Odoo Mobile v2 Documentation

Release 2.0alpha

Dharmang Soni

December 14, 2015

Contents

CHAPTER 1

Contents:

1.1 About Framework

Odoo is a powerful open source framework. With help of this framework we can rapidly develop almost any application.

World is contracting with the growth of mobile phone technology. As the number of users is increasing day by day, facilities are also increasing. Now a days mobiles are not used just for making calls but they have innumerable uses and can be used as a Camera , Music player, Tablet PC, T.V. , Web browser etc. And with the new technologies, new software and operating systems are required.

One of the most widely used mobile OS these days is ANDROID. Android is a software bunch comprising not only operating system but also middleware and key applications.

Odoo Mobile framework is an open source mobile application development framework with Odoo integration. With the help of mobile framework we can rapidly develop almost all Odoo supported application as faster as we can develop in Odoo Framework.

This framework contains its own ORM to handle mobile's local database. So you do not have to worry about data comming from Odoo Server. It has pre-developed services and providers to make your application data synchronized with Odoo.

1.2 Setting up IDE

1.2.1 Downloading & Installing Android Studio

Download Android Studio http://developer.android.com/sdk/index.html

The official Android Development Tool

- Android Studio IDE
- Android SDK tools
- Android 5.0 (Lollipop) Platform
- Android 5.0 emulator system image with Google APIs

1.2.2 System Requirements

Windows

- Microsoft® Windows® 8/7/Vista/2003 (32 or 64-bit)
- 2 GB RAM minimum, 4 GB RAM recommended
- 400 MB hard disk space
- At least 1 GB for Android SDK, emulator system images, and caches
- 1280 x 800 minimum screen resolution
- Java Development Kit (JDK) 7
- Optional for accelerated emulator: Intel® processor with support for Intel® VT-x, Intel® EM64T (Intel® 64), and Execute Disable (XD) Bit functionality

Mac OS X

- Mac® OS X® 10.8.5 or higher, up to 10.9 (Mavericks)
- 2 GB RAM minimum, 4 GB RAM recommended
- 400 MB hard disk space
- At least 1 GB for Android SDK, emulator system images, and caches
- 1280 x 800 minimum screen resolution
- Java Runtime Environment (JRE) 6
- Java Development Kit (JDK) 7
- Optional for accelerated emulator: Intel® processor with support for Intel® VT-x, Intel® EM64T (Intel® 64), and Execute Disable (XD) Bit functionality
- On Mac OS, run Android Studio with Java Runtime Environment (JRE) 6 for optimized font rendering. You can then configure your project to use Java Development Kit (JDK) 6 or JDK 7.

Linux

- GNOME or KDE desktop
- GNU C Library (glibc) 2.15 or later
- 2 GB RAM minimum, 4 GB RAM recommended
- 400 MB hard disk space
- At least 1 GB for Android SDK, emulator system images, and caches
- 1280 x 800 minimum screen resolution
- Oracle® Java Development Kit (JDK) 7
- Tested on Ubuntu® 14.04, Trusty Tahr (64-bit distribution capable of running 32-bit applications).

1.2.3 Setting up testing device

Testing with virtual device

Refer : http://developer.android.com/tools/devices/managing-avds.html

Testing with phycial device

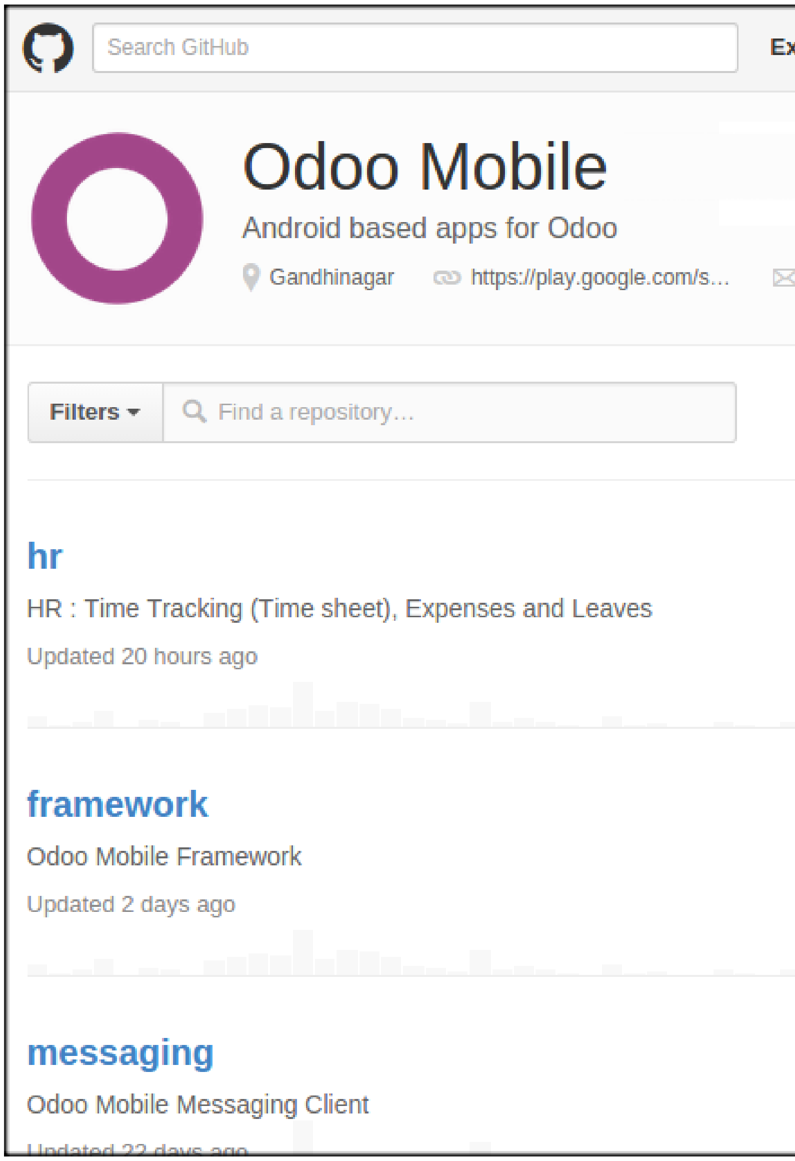
Refer : http://developer.android.com/tools/device.html

1.3 Getting Started with Framework

1.3.1 Download framework from GitHub for Android

Visit Odoo Mobile Repositories

https://github.com/Odoo-mobile



hr

HR : Time Tracking (Time sheet), Expenses and Leaves

Updated 20 hours ago

framework

Odoo Mobile Framework

Updated 2 days ago

messaging

Odoo Mobile Messaging Client

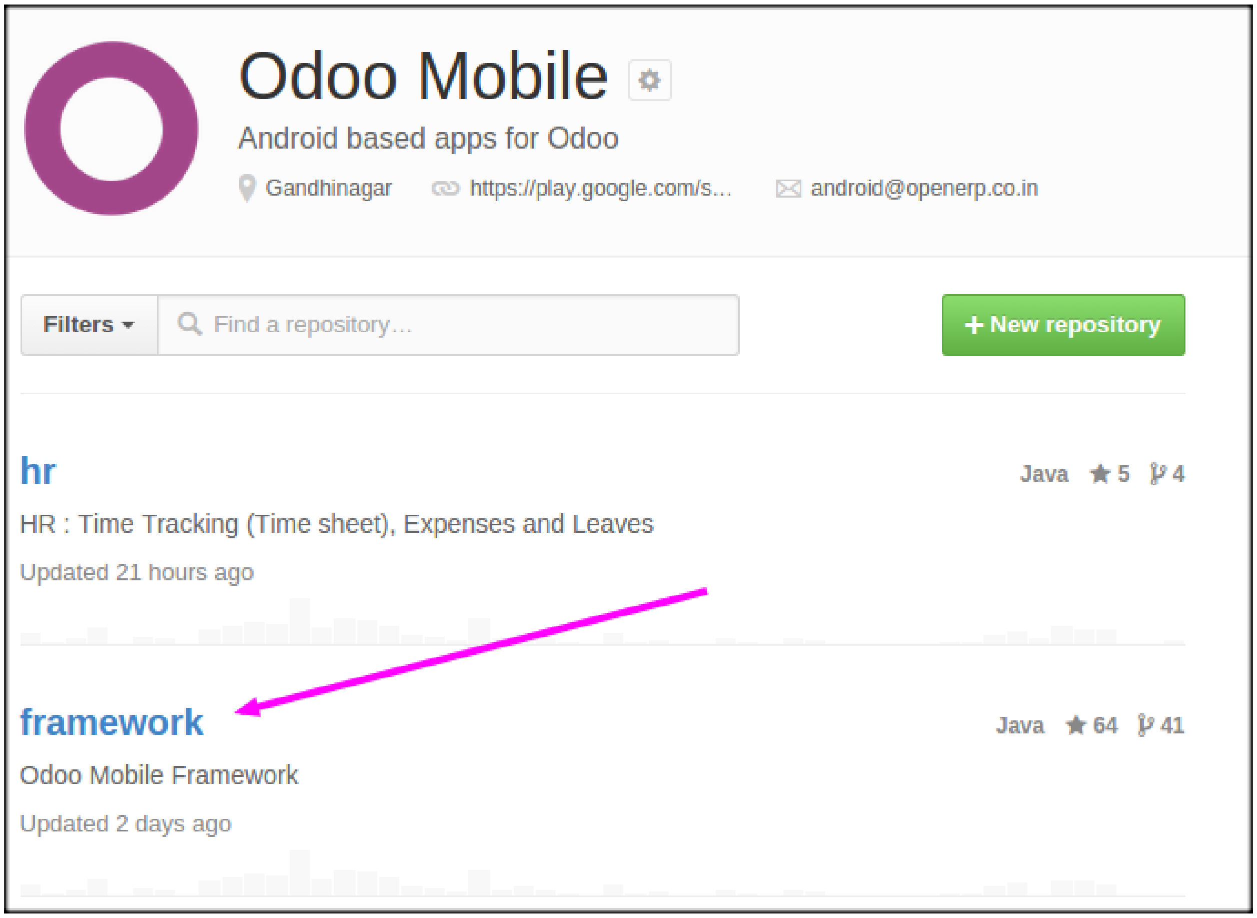
Updated 22 days ago

Here you can find all the repositories developed by Odoo S.A.

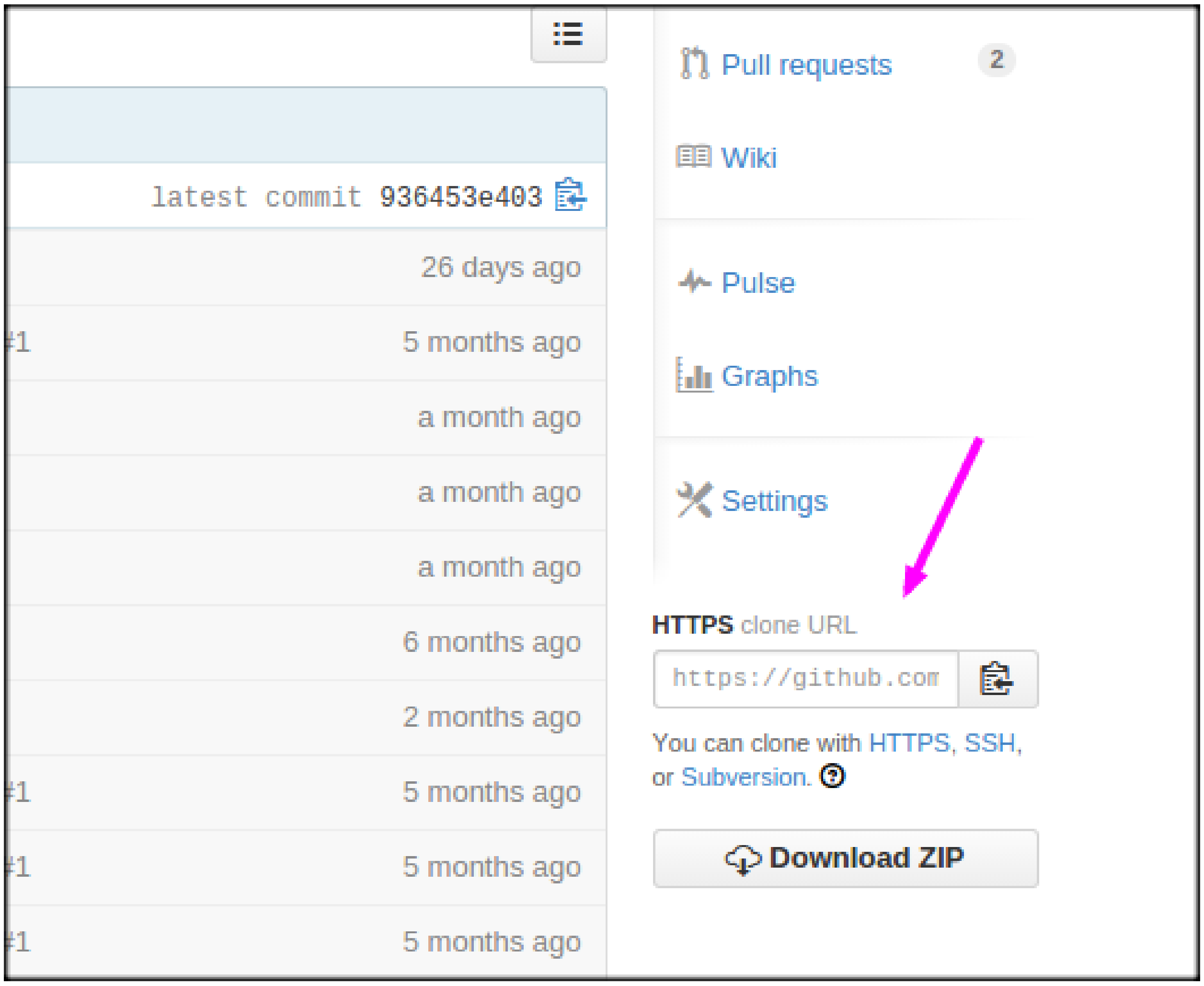
Click on Framework

https://github.com/Odoo-mobile/framework

You can also choose another repository source code such as **crm**, **notes**

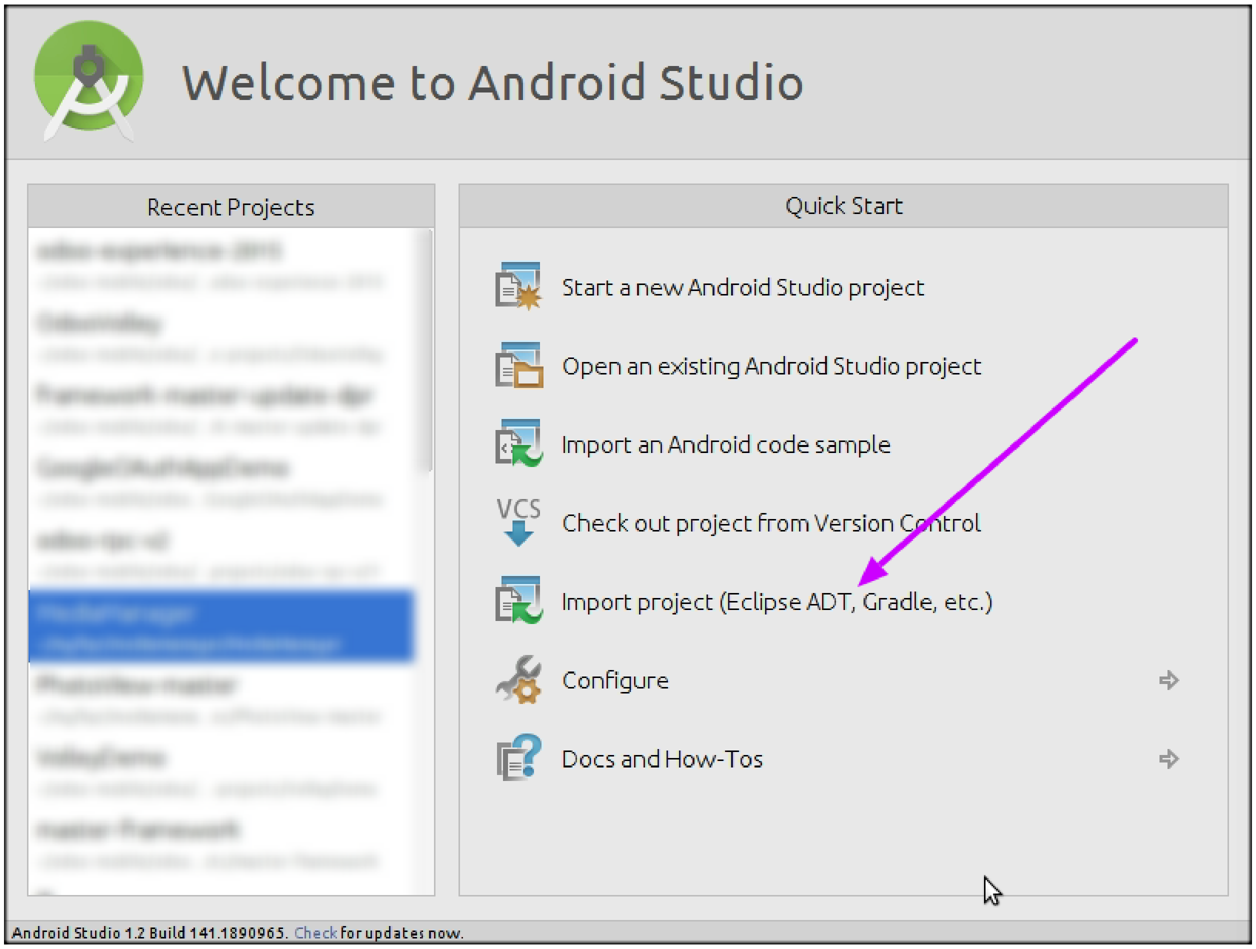

Odoo Mobile
Android based apps for Odoo
Gandhinagar
https://play.google.com/s...
android@openerp.co.in
Filters
Find a repository...
+ New repository
hr
Java ★ 5 4
HR : Time Tracking (Time sheet), Expenses and Leaves
Updated 21 hours ago
framework
Java ★ 64 41
Odoo Mobile Framework
Updated 2 days ago

Clone or download source code for Odoo Mobile Framework



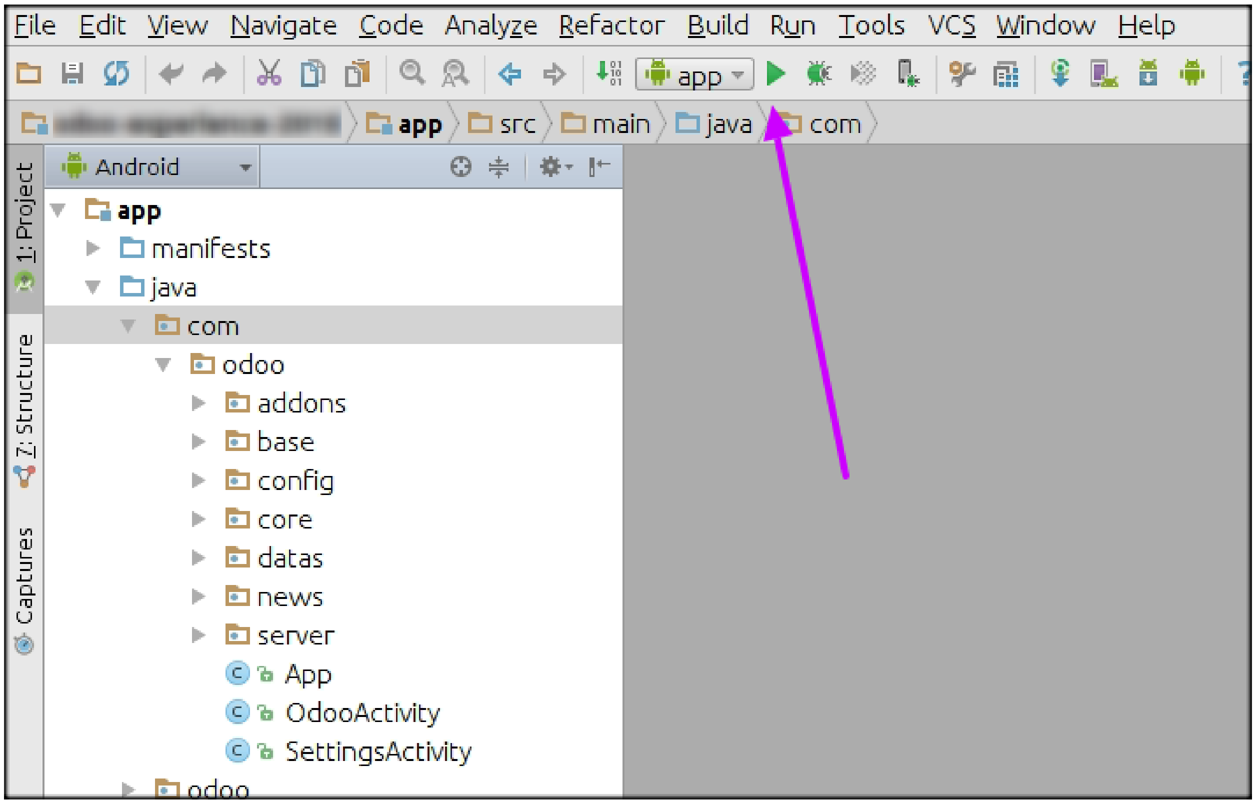
Import framework code to your Android Studio

Import your project source by selecting **Import Project**


Welcome to Android Studio
Recent Projects
Quick Start
Start a new Android Studio project
Open an existing Android Studio project
Import an Android code sample
Check out project from Version Control
Import project (Eclipse ADT, Gradle, etc.)
Configure
Docs and How-Tos
Android Studio 1.2 Build 141.1890965. Check for updates now.

Test Framework application build for loading customers, suppliers and companies

After successfully load your project to Android Studio you can run it by pressing **Run App** button from toolbar.



Usefull links and emails

Odoo Mobile Repositories : https://github.com/odoo-mobile

Odoo Mobile Framework Issues : https://github.com/Odoo-mobile/framework/issues

Contact us: android@openerp.co.in

1.3.2 Working with Odoo Mobile Framework

First step to Odoo Mobile

Odoo is the fastest evolving business software in the world. Odoo has a complete suite of business applications covering all business needs, from Website/Ecommerce down to manufacturing, inventory and accounting, all seamlessly integrated. It is the first time ever a software editor managed to reach such a functional coverage.

World is contracting with the growth of mobile phone technology. As the number of users is increasing day by day, facilities are also increasing. Now a days mobiles are not used just for making calls but they have innumerable uses and can be used as a Camera , Music player, Tablet PC, T.V. , Web browser etc. And with the new technologies, new software and operating systems are required.

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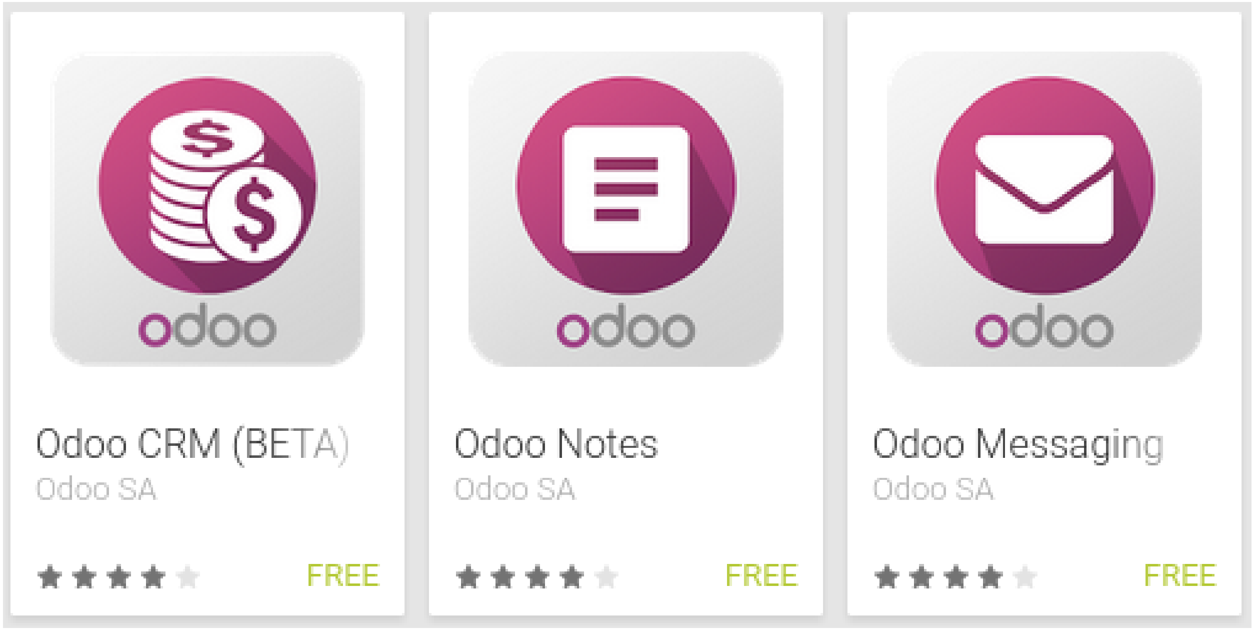
This framework contains its own ORM to handle mobile's local database. So you do not have to worry about data comming from Odoo Server. It has pre-developed services and providers to make your application data synchronized with Odoo.

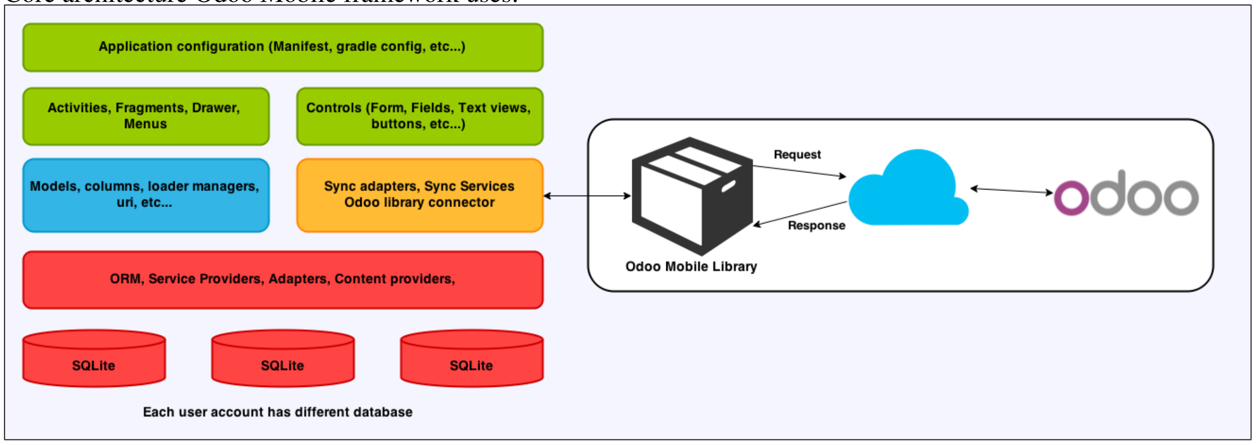
Here is some of the application build with Odoo Mobile Framework (Also available on PlayStore):



Understanding architecture

Framework Architecture

Core architecture Odoo Mobile framework uses:


Application configuration (Manifest, gradle config, etc...)
Activities, Fragments, Drawer, Menus
Controls (Form, Fields, Text views, buttons, etc...)
Models, columns, loader managers, uri, etc...
Sync adapters, Sync Services Odoo library connector
ORM, Service Providers, Adapters, Content providers,
SQLite
SQLite
SQLite
Each user account has different database
Request
Response
Odoo Mobile Library
odoo

Green Layer Full user customizable part.

Application Configuration

Android Manifest, Gradle configuration are at this layer. Generally used for changing package (application ID), application version, register activities, providers, services, receivers and more.

Ref (Android Manifest): http://developer.android.com/guide/topics/manifest/manifest-intro.html

Ref (Build Gradle) : https://developer.android.com/tools/building/configuring-gradle.html

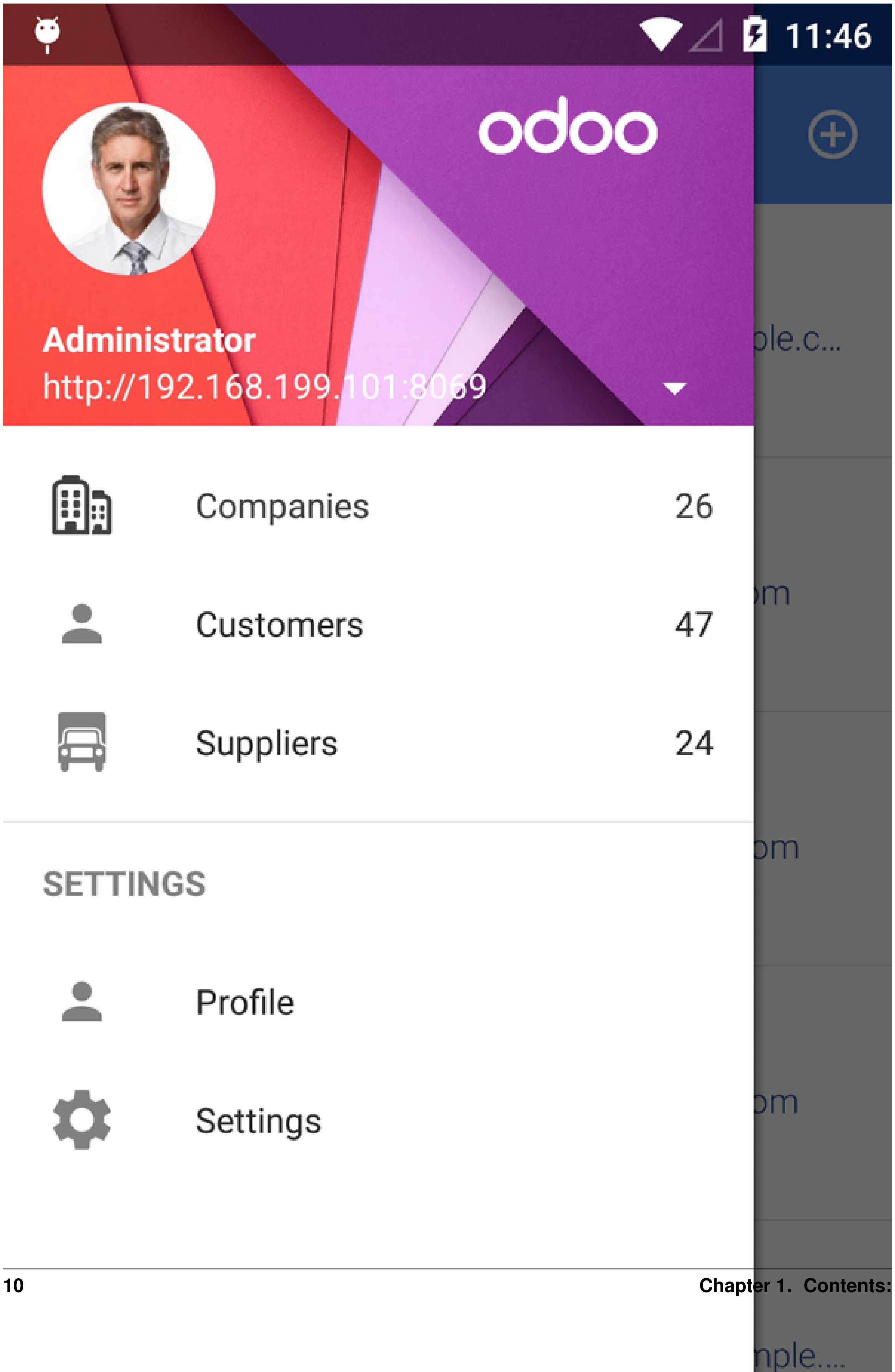
Activities, Fragments, Drawer menus

An **Activity** is an application component that provides a screen with which users can interact in order to do something, Each activity is given a window in which to draw its user interface. The window typically fills the screen, but may be smaller than the screen and float on top of other windows. More at http://developer.android.com/guide/components/activities.html

A **Fragment** represents a behavior or a portion of user interface in an Activity. You can combine multiple fragments in a single activity to build a multi-pane UI and reuse a fragment in multiple activities. More at http://developer.android.com/guide/components/fragments.html

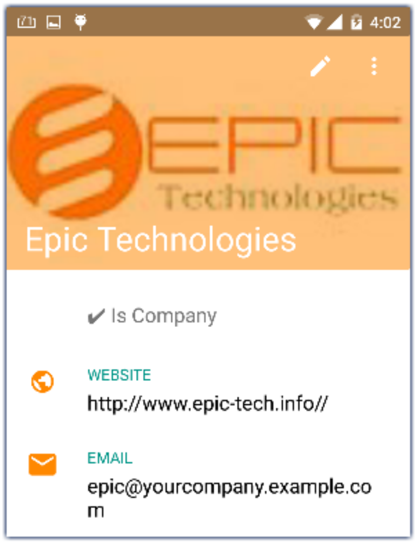
The **navigation drawer** is a panel that transitions in from the left edge of the screen and displays the app's main navigation options. More at https://developer.android.com/training/implementing-navigation/nav-drawer.html

Framework provide easy management with the navigation drawer. You just need to provide menu items and its callback. Have a look for Odoo Mobile drawer. Also it is fully customizable.


11:46
odoo
Administrator
http://192.168.199.101:8069
Companies 26
Customers 47
Suppliers 24
SETTINGS
Profile
Settings

Controls (Form, Fields, Actionbar menus, FAB Button, and more..)

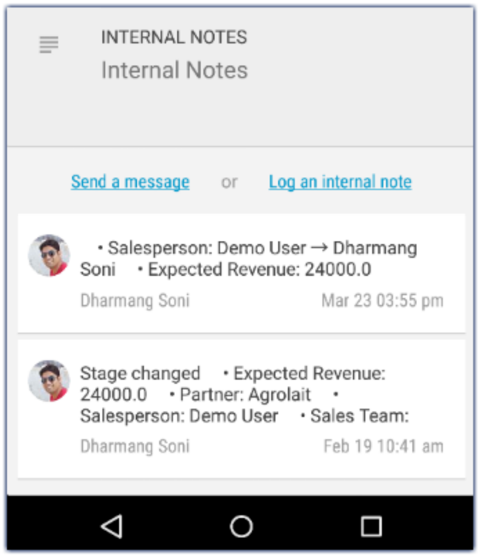
Odoo Mobile framework provides inbuild controls for faster build your layouts.



✔ Is Company

WEBSITE
http://www.epic-tech.info//

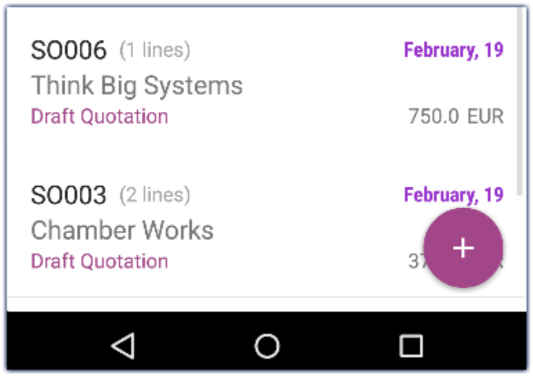
EMAIL
epic@yourcompany.example.com



INTERNAL NOTES
Internal Notes

• Salesperson: Demo User → Dharmang Soni • Expected Revenue: 24000.0
Dharmang Soni Mar 23 03:55 pm

Stage changed • Expected Revenue: 24000.0 • Partner: Agrolait • Salesperson: Demo User • Sales Team:
Dharmang Soni Feb 19 10:41 am



SO006 (1 lines) February, 19
Think Big Systems
Draft Quotation 750.0 EUR

SO003 (2 lines) February, 19
Chamber Works
Draft Quotation 37

- Form
- **Fields**
  - Boolean
  - Text
  - Radio
  - Checkbox
  - ManyToOne
  - Spinner
  - DateTime
  - and more...
- FAB Button

- Pull to refresh (works with listview)

Blue Layer Database models, data loaders, custom uris, custom content providers...

Blue layer contais all your addons model (database table) archicture, business logic for your addon, code behind for your activities and fragments.

Also, there are loaders for your listviews, works with your model content provider. You can also create your custom content provider for custom queries and data loading.

Orange Layer Orange layer is repsonsible to get data from odoo server and provide it to framework synchronization base adapter. Framework will take care for offline data. It will compare your latest updated record and synchronize them as well update record in local and server. We have tried to give 100% offline support, but in some cases you need to override synchronization and have to put your own mechanism. Yes, of-course its customizable. :P

Red Layer Red layer contains all the core components used by the frameworks. ORM, Synchronization base adapters, Base service providers, base content model providers and some utilitity classes. Red layer also responsible to manage application accounts, synchronization settings.

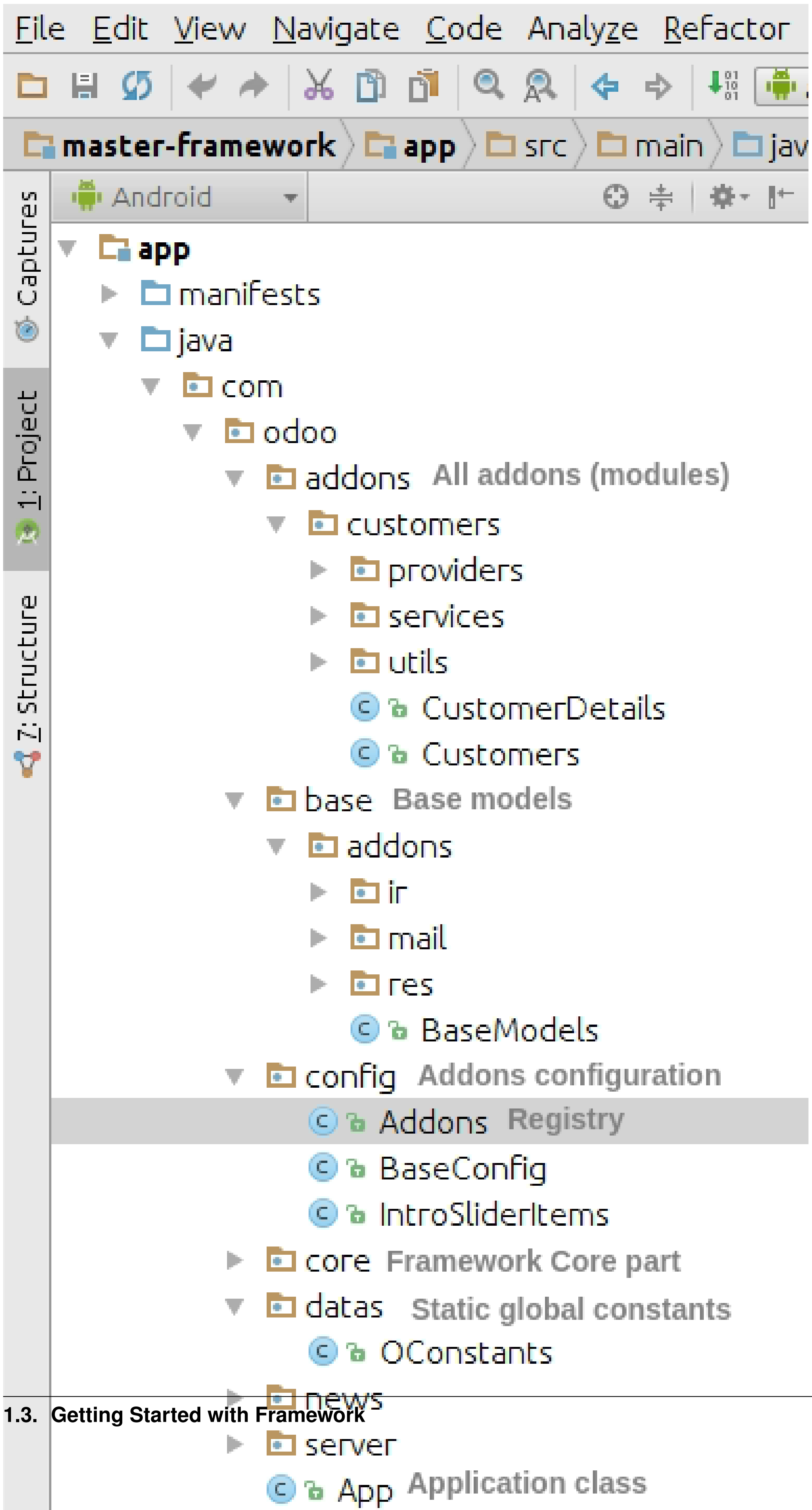
Red layer and Orange layer are dependend part.

Danger: Change in this fiels causes system flow break. Kindly take copy before changes in red layer part.

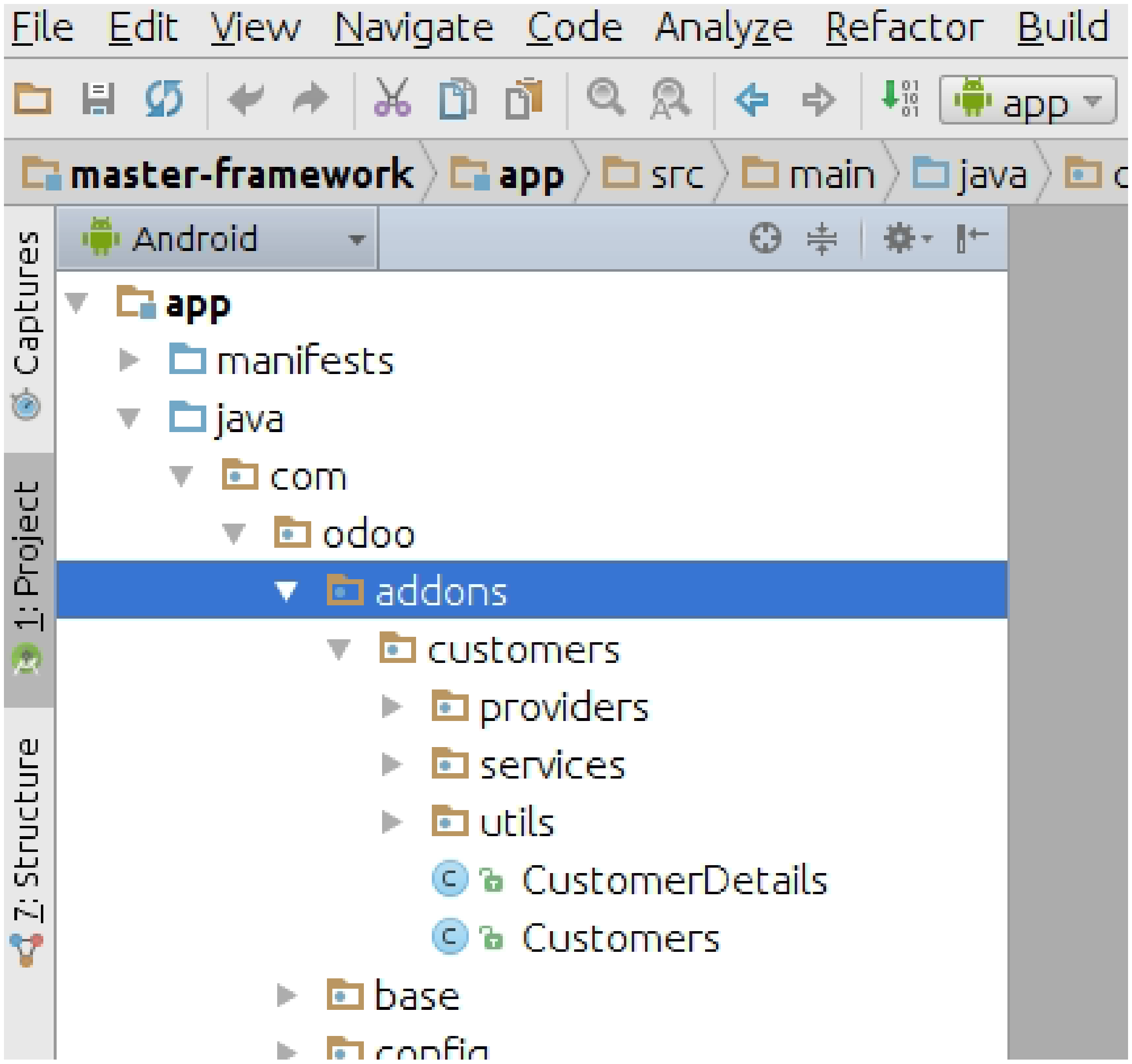
Framework will create separate database for each of different account. By creating separate database it is possible to create different database version as per odoo versions.

Directory structure

Directory structure is same as standard android studio android application structure. Framework has organized some of the packages for faster development and easy understandability of addons (modules).


File Edit View Navigate Code Analyze Refactor
master-framework
app
src
main
jav
Captures
1: Project
7: Structure
Android
app
manifests
java
com
odoo
addons All addons (modules)
customers
providers
services
utils
CustomerDetails
Customers
base Base models
addons
ir
mail
res
BaseModels
config Addons configuration
Addons Registry
BaseConfig
IntroSliderItems
core Framework Core part
datas Static global constants
OConstants
news
server
App Application class

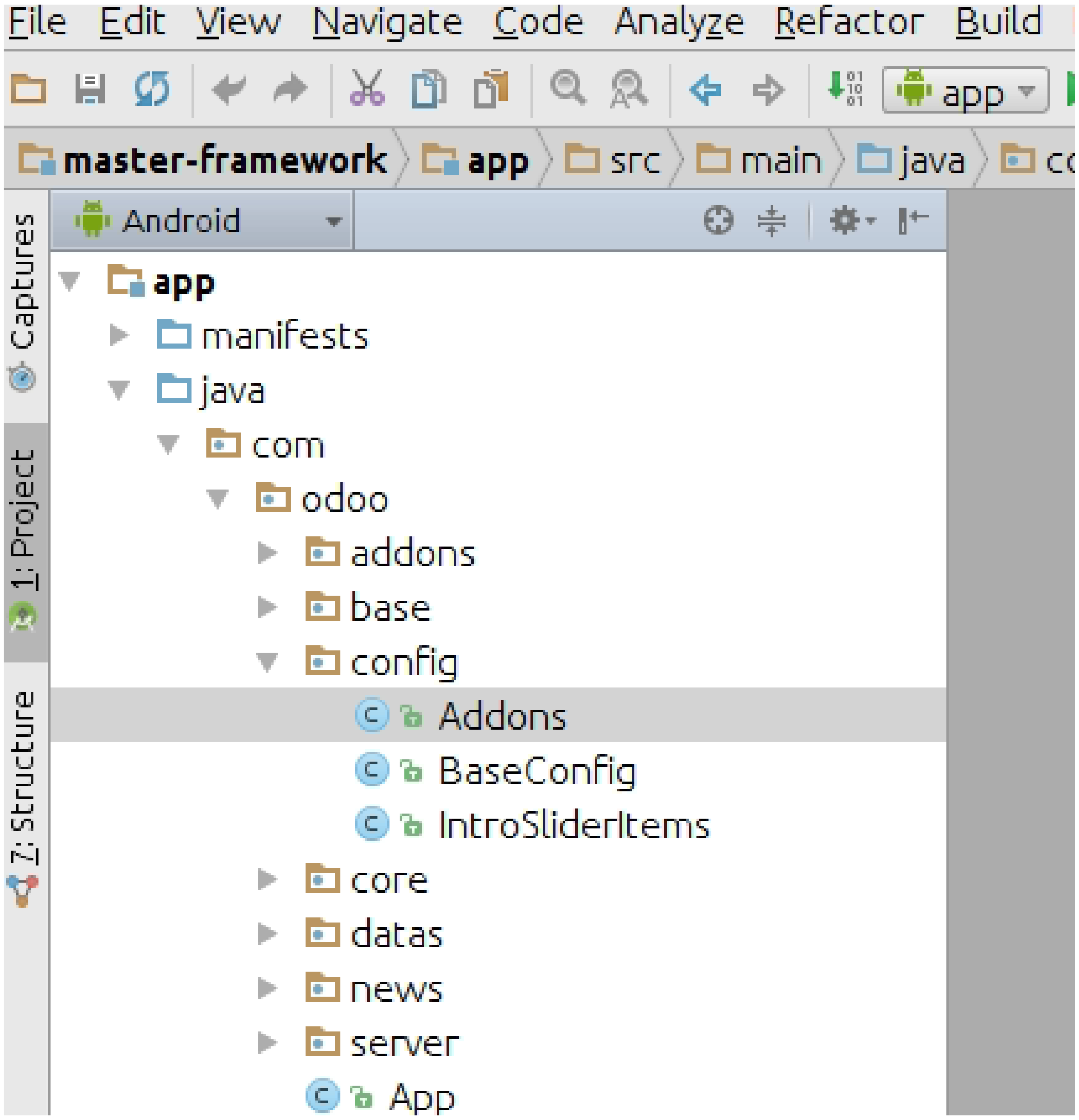
Addons All modules (addons) are under `com.odoo.addons` package



All the modules are created under **addons** package along with module package name as shown in figure.

@See Working with addons

Addons Registry Each addons has its parent view. Such as List of customers, which loaded when user click on Drawer menu item. We have to register each of the parent class for addon in `Addons.java` under `com.odoo.config` package.



Create your feature object with OAddon class named with your feature and provide your feature class (which extends BaseFragment) as below:

```
public class Addons extends AddonsHelper {

    /**
     * Declare your required module here
     * NOTE: For maintain sequence use object name in asc order.
     * Ex.:
     * OAddon partners = new OAddon(Partners.class).setDefault();
     */
    OAddon customers = new OAddon(Customers.class).setDefault();
}
```

If you want to make your addons default to load when application starts. Just add chaining method **setDefault()**

You can create multiple object as member in this class.

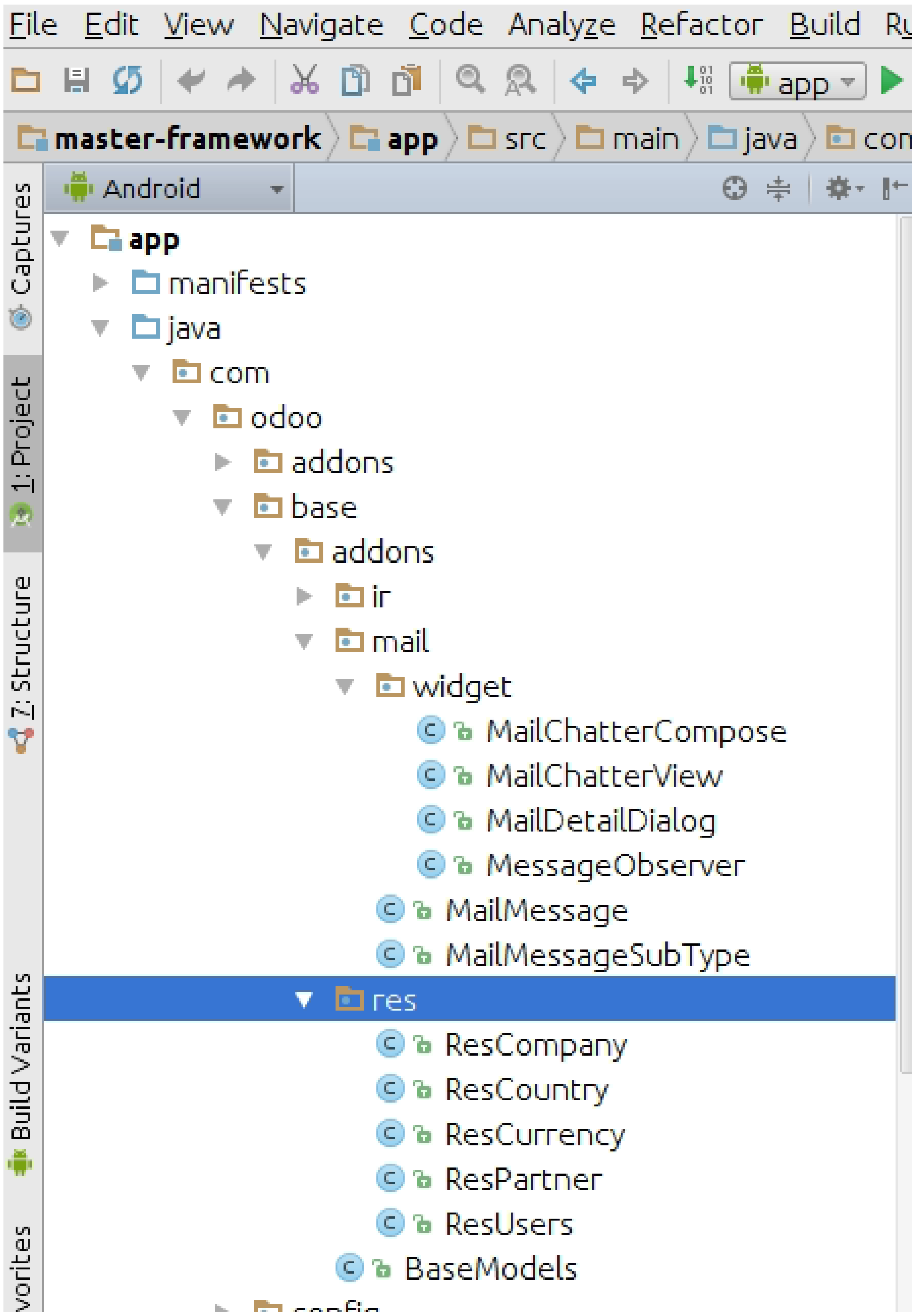
Tips: For shorting your features just put alphabetical ordered name to your features.

E.g:

```
OAddon a_sales = new OAddon(Sale.class).setDefault();
OAddon b_messaging = new OAddon(Messaging.class);
OAddon c_customers = new OAddon(Customer.class);
```

Note: System automatically create database as you applied in your `BaseFragment.java` but if some of the model are not creating automaticallly then you can add thoes models in `BaseModels.java`

Base models Odoo mobile framework comes with some of base models, such as *res.partners, res.users, mail.message, ir.attachments* and more..


File Edit View Navigate Code Analyze Refactor Build
app
master-framework app src main java
Android
Captures
1: Project
7: Structure
Build Variants
vorites

```
app
  manifests
  java
    com
      odoo
        addons
        base
          addons
            ir
            mail
              widget
                MailChatterCompose
                MailChatterView
                MailDetailDialog
                MessageObserver
              MailMessage
              MailMessageSubType
            res
              ResCompany
              ResCountry
              ResCurrency
              ResPartner
              ResUsers
            BaseModels
```

Contains all the base models (database models) used by framework itself.

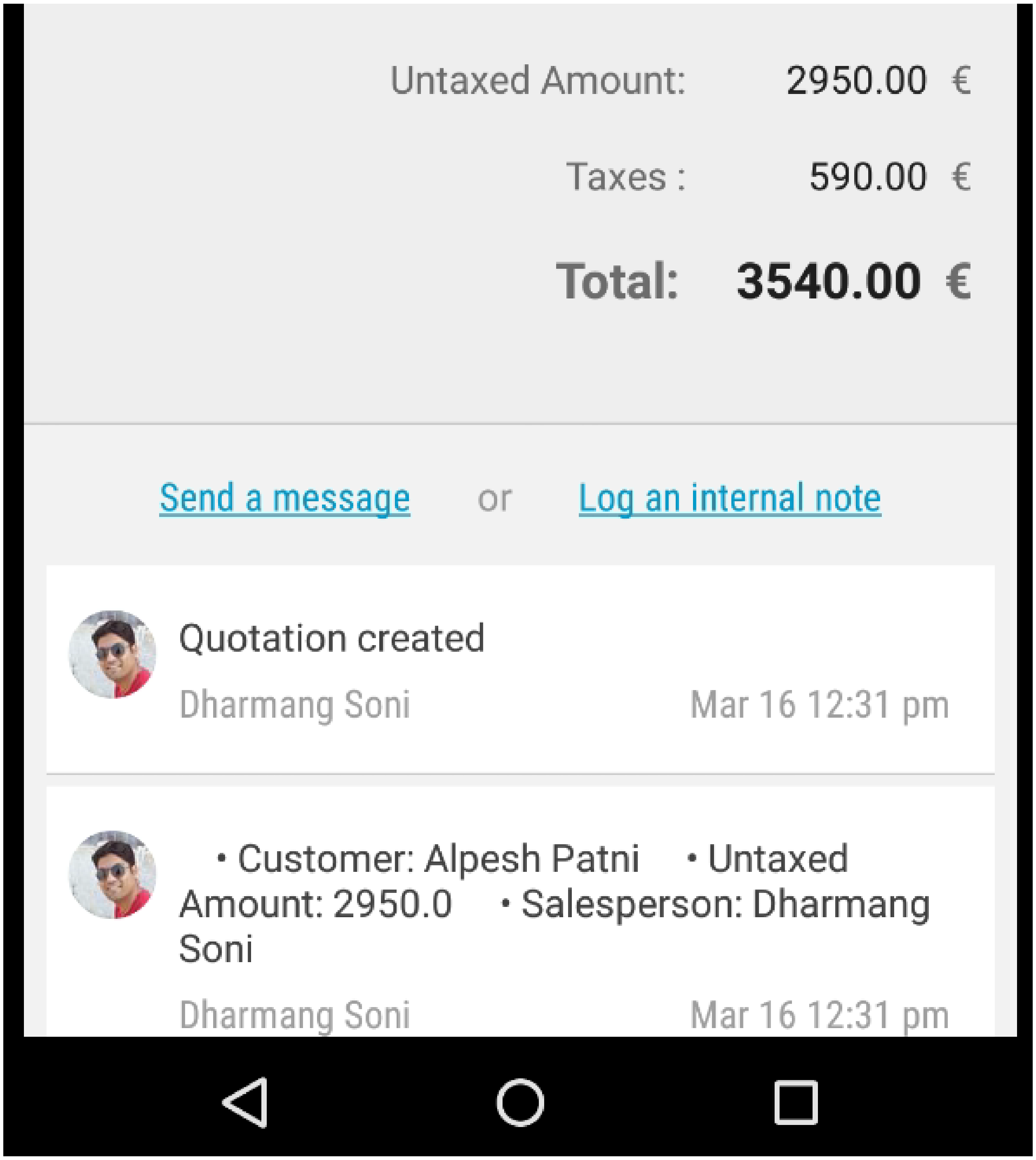
You can modify it (add or update columns as you required). Default it contains, ir.attachment, ir.model, mail.message (for chatter), res_* related models such as res_partner, res_users and so on.

You can also add your base model; after adding your model you need to register it in `BaseModels.java` file.

```java
public class BaseModels {
    public static final String TAG = BaseModels.class.getSimpleName();

    public static List<OModel> baseModels(Context context, OUser user) {
        List<OModel> models = new ArrayList<>();
        models.add(new OdooNews(context, user));
        models.add(new IrModel(context, user));
        models.add(new ResPartner(context, user));
        models.add(new ResUsers(context, user));
        models.add(new ResCompany(context, user));
        models.add(new IrAttachment(context, user));
        models.add(new MailMessage(context, user));
        return models;
    }
}
```

Mail Chatter (Widget) Widget under `com.odoo.base.addons.mail.widget`

Mail chatter widget : provide chatter view for each of the record after form view. **Note: works with OForm control only**.


Untaxed Amount: 2950.00 €

Taxes : 590.00 €

Total: 3540.00 €

Send a message or Log an internal note

Quotation created

Dharmang Soni Mar 16 12:31 pm

• Customer: Alpesh Patni • Untaxed Amount: 2950.0 • Salesperson: Dharmang Soni

Dharmang Soni Mar 16 12:31 pm

You can integrate mail chatter widget with OForm control by providing **setHasChatter(true);** in models constructor.

```
...
public ResPartner(Context context, OUser user) {
        super(context, "res.partner", user);
        setHasMailChatter(true);
}
...
```

@See Chatter View

Basic Components

Base Classes

BaseFragment.java `BaseFragment.java` class extends `android.support.v4.app.Fragment.Fragment` class and implements `IBaseFragment` interface which contains two methods:

```
public interface IBaseFragment {
    public List<ODrawerItem> drawerMenus(Context context);

    public <T> Class<T> database();
}
```

We must have to create one file that extends `BaseFragment.java` which will be registered in `Addons.java`

These two methods are used by framework for creating database and drawer menu. Here, `<T>` indicate your model class type. We will see it in `OModel.java`

BaseFragment.java contains some of usefull methods we can used in our fragment. As below:

`setTitle()` Syntax:

`Void setTitle(String title)`

Used for setting actionbar title:

```
setTitle("My Title");
```

`db()` Syntax:

`OModel db()`

Used to get current db object returned in `database()` method which implemented in our fragment class.

```
db().select();

OValues values = new OValues();
...
...
db().insert(values);
```

`user()` Syntax:

`OUser user()`

Used to get current active user object. It is easy when you want to do some operation with current user.

```
user().getName();
user().getPartner_id();
user().getUser_id();
...
```

`parent()` **Syntax:**

`OdooActivity parent()`

Returns parent activity (`i.e., getActivity()`). It will automatically cast Activity object to `OdooActivity` So you can easyliy access public methods of `OdooActivity`

```
parent().closeDrawer();
parent().refreshDrawer();
parent().setOnActivityResultListener(callback);
```

We will see more methods of `parent()` method in `OdooActivity.java`

`inNetwork()` **Syntax:**

`boolean inNetwork()`

Returns `true` if device in network, otherwise `false`

```
if(inNetwork()){
        // Do some stuff
}else{
        // Ignore stuff
}
```

`startFragment()` **Syntax:**

`Void startFragment(Fragment fragment, boolean addToBackState)`

`Void startFragment(Fragment fragment, boolean addToBackState, Bundle data)`

Used to start another fragment from current fragment. You can also specify backstate when starting another fragment.

```
startFragment(new MyNewFragment(), true); // Starting fragment with backstate

Bundle data = new Bundle();
...
...
startFragment(new MyNewFragment(), false, data); // Starting new fragment without backstate but with
```

`setHasFloatingButton()` **Syntax:**

`void setHasFloatingButton(View view, int viewId, ListView listViewObj, View.OnClickListener callback)`

By default floating button is hidden. You need to activate floating button to use. It will auto add callback method. Also you need to add ListView object as parameter so when you scroll your listview FAB will automatically hide/visible on listview scroll.

```
setHasFloatingButton(view, R.id.fabButton, listViewObj, this);

// this will implement onClick(View v) method

@Override
public void onClick(View v) {
    switch (v.getId()) {
        case R.id.fabButton:
            // Do your stuff
            break;
    }
}
```

`hideFab()` and `showFab()` Syntax:

`void hidFab()`

`void showFab()`

After setting fab button you can call `hideFab()` and `showFab()` as per your requirements

```
if(inNetwork()){
        showFab();
}else{
        hideFab();
}
```

`setHasSearchView()` Syntax:

`void setHasSearchView(IOnSearchViewChangeListener callback, Menu menu, int menu_id)`

If there is a menu with search option. You can directly set `setHasSearchView()` and framework will work for you. It will give you callback on search text changed and search view close.

It takes callback to its first paramenter of `IOnSearchViewChangeListener` interface which has following methods:

```
public interface IOnSearchViewChangeListener {
    public static final String TAG = IOnSearchViewChangeListener.class.getSimpleName();

    public boolean onSearchViewTextChange(String newFilter);

    public void onSearchViewClose();
}
```

To apply search view callback just call method when you create your menu:

```
@Override
public void onCreateOptionsMenu(Menu menu, MenuInflater inflater) {
    super.onCreateOptionsMenu(menu, inflater);
    menu.clear();
    inflater.inflate(R.menu.menu_partners, menu);
    setHasSearchView(this, menu, R.id.menu_partner_search);
}
```

It will implement two methods:

```
@Override
public boolean onSearchViewTextChange(String newFilter) {
    mCurFilter = newFilter;
    // Do any other stuff when change filter text
    return true;
}

@Override
public void onSearchViewClose() {
    // Any stuff when user close search view
}
```

`setHasSwipeRefreshView()` **Syntax:**

`void setHasSwipeRefreshView(View parentView, int resourceId, SwipeRefreshLayout.OnRefreshListener callback)`

When using swipe refresh view, you can easyly set it's call back by calling `setHasSwipeRefreshView`

```
setHasSwipeRefreshView(view, R.id.swipe_container, this);
```

It will implement one method for calling swipe event:

```
@Override
public void onRefresh() {
    if (inNetwork()) {
        // Do your stuff
    } else {
        // Do your stuff
    }
}
```

`setSwipeRefreshing()` and `hideRefreshingProgress()` **Syntax:**

`void setSwipeRefreshing(boolean refreshing)`

`void hideRefreshingProgress()`

When using swipe refresh view you can use these method for hiding and showing refreshing operation.

```
@Override
public void onRefresh() {
    if (inNetwork()) {
        setSwipeRefreshing(true);
    } else {
        hideRefreshingProgress();
    }
}
```

`setHasSyncStatusObserver()` **Syntax:**

`void setHasSyncStatusObserver(String menuKEY, ISyncStatusObserverListener callback, OModel model)`

Used when any of your data are synchronizing in background and you need to notify when sync finished or data set update. By calling this method it is easy to notify on dataset change.

```
setHasSyncStatusObserver(KEY, this, db());
```

1. It takes drawer KEY or TAG which passed when creating drawer menu
2. Callback for data set change. Implement `onStatusChange()` method
3. database object on which you need to set observer

```
@Override
public void onStatusChange(Boolean changed) {
        if(changed){
                getLoaderManager().restartLoader(0, null, this); // Updating listview
        }
}
```

`_s()`, `_c()` and `_dim()` **Syntax:**

`String _s(int resource_id)`

`int _c(int resource_id)`

`int _dim(int resource_id)`

Used to get quick string, color and dimention.

```
String name = _s(R.string.app_name);
int color = _c(R.color.theme_primary);
int height = _dim(R.dimen.statusBarHeight);
```

Sample class using `BaseFragment`

```
public class Messages extends BaseFragment {
    public static final String TAG = Messages.class.getSimpleName();


    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        return inflater.inflate(R.layout.common_listview, container,false);
    }

    @Override
    public void onViewCreated(View view, Bundle savedInstanceState) {
        super.onViewCreated(view, savedInstanceState);
                setTitle(_s(R.string.title_messages));
    }

    @Override
    public Class<MailMessage> database() {
        return MailMessage.class;
    }

    @Override
    public List<ODrawerItem> drawerMenus(Context context) {
        return null;
    }

}
```

OColumn.java Used to create column for model.

Syntax:

```
OColumn(String label, Class<?> type);
OColumn(String label, Class<?> type, RelationType relationType);
```

Here,

1. `label` indicate column label. It auto load in form control as control title.
2. `type` type of datatype. (Basic type + Relation type)
3. **`relationType` [optional] if `type` is related to another model class**
    - **Possible Types**

  - OneToMany
  - ManyToOne
  - ManyToMany

Some chaining methods

each method returns, OColumn object with updated value.

`setName()` Syntax:

`OColumn setName(String name)`

Used to set column name. Generally variable name is considered as column name but if you want to change its name runtime you can change it.

```
OColumn dummy_column = new OColumn("Name", OVarchar.class).setName("name");
```

Danger: Remeber that, You can not change column name after model's constructor call finish. If you trying to change outside of constructor, it will affect your local database.

`setRecordSyncLimit()` Syntax:

`OColumn setRecordSyncLimit(int limit)`

Limiting syncing record for **OneToMany** and **ManyToMany**.

```
OColumn tag_ids = new OColumn("Tags", NoteTag.class, RelationType.ManyToMany)
        .setRecordSyncLimit(10);
```

Note: Not all records are synced for OneToMany and ManyToMany if you set record sync limit.

`setLabel()` Syntax:

`OColumn setLabel(String label)`

Sets label for column name. Used as title for column.

```
OColumn name = new OColumn("Dummy Name", OVarchar.class).setLabel("Name");
```

`setRelatedColumn()` Syntax:

`OColumn setRelatedColumn(String related_column)`

Used when you have created `OneToMany` relation column. OneToMany required `related column` to maintain relation.

```
OColumn child_ids = new OColumn("Contacts", ResPartner.class, RelationType.OneToMany)
        .setRelatedColumn("parent_id");
```

`setSize()` Syntax:

`OColumn setSize(int size)`

Used to set column size. Takes integer value.

```
OColumn title = new OColumn("Blog Title", OVarchar.class).setSize(100);
```

`setDefaultValue()` **Syntax:**

`OColumn setDefaultValue(Object value)`

Sets default value for column. Will store into database if user not pass value for column

```
OColumn published = new OColumn("Published", OBoolean.class).setDefaultValue(false);
```

`setRequired()` **Syntax:**

`OColumn setRequired()`

Sets column value required. OForm will automatically show validation error if column is required.

```
OColumn name = new OColumn("Name", OVarchar.class).setRequired();
```

`setLocalColumn()` **Syntax:**

`OColumn setLocalColumn()`

Sometime you need some local column that will not available on server. You can make any column local only.

```
OColumn total_amount = new OColumn("Total Amount", OInteger.class).setLocalColumn();
```

`setType()` **Syntax:**

`OColumn setType(Class<?> type)`

Sets data type for column. You can change data type for column as runtime but only in constructor. In some cases, such as different type for different odoo version.

```
    OColumn date = new OColumn("Date", ODate.class);

    public ResPartner(Context context, OUser user) {
        super(context, "crm.lead", user);
        if(getOdooVersion().getVersion_number() > 7){
            date.setType(ODateTime.class);
        }
}
```

`addDomain()` Adds default filter domain for column. Basically you need `ManyToOne` column to be filter on some conditions.

Syntax:

```
addDomain(String column_name, String operator, Object value);
addDomain(String conditional_operator);
```

Example:

```
OColumn parent_id = new OColumn("Related Company", ResPartner.class, RelationType.ManyToOne)
        .addDomain("is_company","=",true);
```

`addSelection()` Syntax:

`OColumn addSelection(String key, String value)`

Used to add key value selection pair. Used with `OSelection` data type.

```
OColumn state = new OColumn("State", OSelection.class)
        .addSelection("draft","Draft")
        .addSelection("confirm","Confirmed")
        .addSelection("close","Canceled")
        .addSelection("done","Done");
```

Column annotations

`@Odoo.api.v7`, `@Odoo.api.v8` and `@Odoo.api.v9alpha` api annotations are used when your column name is different in odoo versions. Or may be it is possible that some of column not present in older version and newer version. Framework column annotation provide feature for making your model compitible for different odoo versions.

You need to just add annotation on column with your supported version.

```
@Odoo.api.v7
OColumn to_read = new OColumn("To Read", OBoolean.class);

@Odoo.api.v8
OColumn is_read = new Column("Is read", OBoolean.class);
```

Here, `api.v7` column will created only if connected odoo server is version 7.0, same as for `api.v8`

`@Odoo.SyncColumnName()` Some time you need to create column name that is not supported in SQLite (such as `limit`) or some variable name are not allowed in `java` such as `class`

By using `SyncColumnName` annotation framework will treat that column in different behaviour. For example, just create `_class` column and add annotation named with `class`.

Synchronization will done with `class` column name but stored in `_class` also you can treat it with `_class` name locally.

```
@Odoo.SyncColumnName("class")
OColumn _class = new OColumn("Class", OVarchar.class);

@Odoo.SyncColumnName("limit")
OColumn _limit = new OColumn("Limit", OInteger.class);
```

`@Odoo.onChange()` Compitable with OForm control only

Used when column value changed. It takes method name as first parameter and boolean value as second parameter if you want to execute onchange task in background process.

```
@Odoo.onChage(method="onParentIdChange")
OColumn parent_id = new OColumn("Company", ResPartner.class, RelationType.ManyToOne);
OColumn city = new OColumn("City", OVarchar.class);

public ODataRow onParentIdChange(ODataRow parent_id){
        ODataRow newValues = new ODataRow();
        newValues.put("city", parent_id.getString("city")); // get city from parent_id and returning
        return newValues;
}
```

`OForm` call it automatically and fill the values in form object.

`@Odoo.Functional()` One can define a field whose value is computed instead of simply being read from the database.

Takes three parameters:

1. `method`, name of method
2. `store`, boolean flag for storing value in database (if true, database will create column)
3. `depends`, array of string, depended column names

```
OColumn first_name = new OColumn("First name", OVarchar.classs);
OColumn last_name = new OColumn("Last name", OVarchar.class);

@Odoo.Functional(method="storeDisplayName", depends = {"first_name","last_name"}, store = true)
OColumn display_name = new OColumn("Display name", OVarchar.class).setLocalColumn();

public String storeDisplayName(OValues values){
        String displayName = "";

        displayName = values.getString("first_name");
        displayName += " " + values.getString("last_name");

        return displayName;
}
```

Info:

For ManyToOne, ManyToMany and OneToMany values will be different.

ManyToOne

```
public String storeManyToOne(OValues values){
        String manyToOne = "";
        if(!values.getString("parent_id").equals("false")){
                List<Object> parent_id = (ArrayList<Object>) value.get("parent_id");
                // Here, list index 0 contain record id (server id), and
                // list index 1 contains record name
                manyToOne = parent_id.get(1).toString();
        }
        return manyToOne;
}
```

ManyToMany or *OneToMany*

```
public int storeChildCount(OValues values){
        if(!values.getString("child_ids").equals("false")){
                // Contains list of ids (server ids)
                return ((ArrayList<Object>) values.get("child_ids")).size();
        }
        return 0;
}
```

`@Odoo.hasDomainFilter()` In some cases, you need to filter your record depended on some value change at runtime. For example, by changing country, states are loaded related to country.

By using `hasDomainFilter` annotation you can deal with it.

Add column domain, and annotation. If system found domains with `hasDomainFilter` annotation it will be treated runtime. **Note: it works with OForm control only**

```
OColumn country_id = new OColumn("Country", ResCountry.class, RelationType.ManyToOne);

@Odoo.hasDomainFilter()
OColumn state_id = new OColumn("State", ResStates.class, RelationType.ManyToOne)
        .addDomain("country_id","=", this);
```

OModel.java All the model (database class) extends `OModel` class. It contains all database required methods. Also allow you to add column easily by declaring as member variable type `OColumn`

- It automatically create relation tables and maintain relations for records.
- Works with `ContentProvider` so faster performance for loading data from SQLite database.
- Properly maintain local relation.

OModel is binded with own ORM. It easy and fast.

OModel support different datatypes which will create dynamic table with its type and return records as per its column type.

Basic Data Types

`OVarchar` A string of limited length. Default length : 64

```
OColumn name = new OColumn("Name", OVarchar.class).setSize(100).setRequired();
```

`OInteger` An integer

```
OColumn counter = new OColumn("Counter", OInteger.class);
```

`OBoolean` A boolean (true, false). Default false

```
OColumn is_active = new OColumn("Active", OBoolean.class);
```

`OFloat` A floating point number.

```
OColumn weight = new OColumn("Weight", OFloat.class);
```

`OText` A text field with no limit in length.

```
OColumn body = new OColumn("Message body", OText.class);
```

`OHtml` A html (actual text) field with no limit in length.

```
OColumn body = new OColumn("Message body", OHtml.class);
```

`ODate` A date. Stores `yyyy-MM-dd` formatted date or `false` if value not set

```
OColumn date = new OColumn("Date", ODate.class);
```

`ODateTime` Allows to store a date and the time of day in the same field. Stores `yyyy-MM-dd HH:mm:ss` formatted date or `false` if value not set

```
OColumn date = new OColumn("Date", ODateTime.class);
```

`OBlob` Allows to store a base64 data in database. Generally used by ir.attachment

```
OColumn image = new OColumn("Avatar", OBlob.class);
```

`OSelection` Allows to store a string value (i.e., key for selection). Used selection for parsing Label for stored key.

```
OColumn state = new OColumn("State", OSelection.class)
        .addSelection("draft","Draft")
        .addSelection("confirm","Confirmed")
        .addSelection("close","Canceled")
        .addSelection("done","Done");
```

`OTimestamp` Stores current date time to column.

```
OColumn order_date = new OColumn("Order date", OTimestamp.class);
```

Relation tyeps

`OneToMany` One2many field; the value of such a field is the recordset of all the records in comodel_name such that the field inverse_name is equal to the current record.

It required Type as another model's class type and also required realted column (as ManyToOne in related model)

```
OColumn parent_id = new OColumn("Company", ResPartner.class, RelationType.ManyToOne);
OColumn child_ids = new OColumn("Contacts", ResPartner.class, RelationType.OneToMany).
        setRelatedColumn("parent_id");
```

`ManyToOne` The value of such a field is a recordset of size 0 (no record) or 1 (a single record).

```
OColumn parent_id = new OColumn("Company", ResPartner.class, RelationType.ManyToOne);
```

`ManyToMany` Many2many field; the value of such a field is the recordset.

```
OColumn tag_ids = new OColumn("Tags", NoteTag.class, RelationType.ManyToMany);
```

Base structure of class

- extends `OModel` class
- Contains columns, methods (custom method used for model)

```
class ResPartner extends OModel{

        public ResPartner(Context context, OUser user){
                super(context,"res.partner",user);
        }

}
```

- Constructor with `Context` and `OUser` parameter only. Pass **model name** in super.
- This will create table with some base columns `_id, id, create_date, write_date` and more..

Note: Note that database is created when you first time run your application, or when you clean your data from app setting. You need to clean application data everytime when you update your database column.

Adding some columns

```
class ResPartner extends OModel{

        OColumn name = new OColumn("Name", OVarchar.class);
        OColumn parent_id = new OColumn("Company", ResPartner.class, RelationType.ManyToOne);

        public ResPartner(Context context, OUser user){
                super(context,"res.partner",user);
        }

}
```

Note that, if you pass second parameter `null` while creating model object. It will take current active user object and treat all operation to current user database only.

You can add columns as your requirement. Framework will create each relation column table automatically. But if there is no any relation column for specific model and you need to create that table. You need to register it in `BaseModels.java` @See *Base models*

Methods

`setDefaultNameColumn()` Syntax:

`void setDefaultNameColumn(String nameColumn)`

Used when default **name** column is different. Default takes `name`. Used for storing name column when ManyToOne record arrive.

```
public class ResPartner extends OModel {

        OColumn display_name = new OColumn("Name", OVarchar.class);

        public ResPartner(Context context, OUser user){
                super(context, "res.partner", user);
                setDefaultNameColumn("display_name");
        }

}
```

getDefaultNameColumn() **Syntax:**

`String getDefaultNameColumn()`

Alternative of `setDefaultNameColumn()` override `getDefaultNameColumn()` method for return default name column.

```
public class ResPartner extends OModel {

        OColumn display_name = new OColumn("Name", OVarchar.class);

        public ResPartner(Context context, OUser user){
                super(context, "res.partner", user);
        }

        @Override
        public String getDefaultNameColumn(){
                return "display_name";
        }
}
```

setModelName() **Syntax:**

`void setModelName(String modelName)`

In some cases, you need to change model name (before just creating database table) depends on odoo version.

```
public class CalendarEvent extends OModel {
        ...
        ...

        public CalendarEvent(Context context, OUser user){
                super(context, "calendar.event", user);

                // Model name different for calendar.event in odoo version 7.0
                if(getOdooVersion().getVersionNumber() ==7){
                        setModelName("crm.meeting");
                }
        }
}
```

getTableName() **Syntax:**

`String getTableName()`

Returns, table name for model. (Generally, `res.partner` become `res_partner`)

```
ResPartner partner = new ResPartner(mContext, null);
String tableName = partner.getTableName();
```

setHasMailChatter() **Syntax:**

`void setHasMailChatter(boolean hasChatter)`

Used to enable mail chatter below `OForm` view. takes boolean parameter

```
public class ResPartner extends OModel {
        ...
        ...
        public ResPartner(Context context, OUser user){
                super(context, "res.partner", user);

                setHasMailChatter(true);
        }
}
```

`getUser()` **Syntax:**

`OUser getUser()`

Used to get current active User object. returns `OUser` object

```
ResPartner partner = new ResPartner(mContext, null);
OUser user = partner.getUser();

String userName = user.getName();
int userId = user.getUserId();
```

`getOdooVersion()` **Syntax:**

`OdooVersion getOdooVersion()`

Used to get current user's odoo version information.

```
ResPartner partner = new ResPartner(mContext, null);

OdooVersion odooVersion = partner.getOdooVersion();

int versionNumber = getOdooVersion().getVersionNumber();
String versionType = getOdooVersion().getVersionType();
```

`getColumns()` **Syntax:**

`List<OColumn> getColumns()`

`List<OColumn> getColumns(boolean local)`

Used to get list of models column. returns, `ArrayList<OColumn>`

Takes one optional parameter boolean, If you want to get only local column or server columns

- `local` boolean

```
ResPartner partner = new ResPartner(mContext, null);

// Getting all columns
for(OColumn column: partner.getColumns()){
        Log.i(column.getName() , column.getLabel());
}

// Getting local columns
for(OColumn column: partner.getColumns(true)){
        Log.i(column.getName() , column.getLabel());
}

// Getting server columns
for(OColumn column: partner.getColumns(false)){
        Log.i(column.getName() , column.getLabel());
}
```

`getRelationColumns()` Syntax:

`List<OColumn> getRelationColumns()`

Used when you need to get all relation columns, `ManyToMany`, `ManyToOne` and `OneToMany`

```
ResPartner partner = new ResPartner(mContext, null);

for(OColumn column : partner.getRelationColumns()){
        Log.i(column.getName(), column.getLabel());
}
```

`getColumn()` Syntax:

`OColumn getColumn(String columnName)`

Used to get `OColumn` object by using its name

```
ResPartner partner = new ResPartner(mContext, null);

OColumn display_name = partner.getColumn("display_name");
```

Note, if annotations applied and version not compitable with that column, it will returns `null`

`getFunctionalColumns()` Syntax:

`List<OColumn> getFunctionalColumns()`

Returns all functional columns (with annotation `@Odoo.Functional`)

```
ResPartner partner = new ResPartner(mContext, null);

for(OColumn column : partner.getFunctionalColumns()){
        Log.i(column.getName(), column.getLabel());
}
```

`getManyToManyColumns()` Syntax:

`List<OColumn> getManyToManyColumns(OModel reationModel)`

Returns list of `OColumn` for many to many table. Takes relation model object as parameter

```
ResPartner partner = new ResPartner(mContext, null);

for(OColumn col: partner.getManyToManyColumns(new Tags(mContext, null))){
        Log.i(col.getName(), col.getLabel());
}
```

`createInstance()` Syntax:

`OModel createInstance(Class<?> type)`

Used to create `OModel` object related to model class type.

```
ResPartner partner = new ResPartner(mContext, null);

Tags tags = (Tags)partner.createInstance(Tags.class);
```

It will take `Context` and `User` from `ResPartner` object

`OModel.get()` Syntax:

`OModel OModel.get(Context context, String modelName, String userAndroidName)`

Used to create `OModel` object for particular model by its model name.

Takes, three parameters:

1. `Context` context object
2. `String` model name (i.e, res.partner or mail.message)
3. `String` user account name (You can see it under account of android settings). Made of `username` and `database` E.g., username : `admin`, database: `production` => account name : `admin[production]` or you can get it by user object. `OUser.getAndroidName()`

```
OUser user = OUser.current(mContext);
ResPartner partner = (ResPartner) OModel.get(mContext, "res.partner", user.getAndroidName());
```

`authority()` Syntax:

`String authority()`

returns, default authority. Used by `BaseModelProvider`. can be change if you have custome `ContentProvider`

```
ResPartner partner = new ResPartner(mContext, null);
String authority  = partner.authority();
```

`uri()` Syntax:

`Uri uri()`

Returns, model `Uri` object. Works with `BaseModelProvider`

```
ResPartner partner = new ResPartner(mContext, null);

Cursor cr = getContentResolver().query(
        partner.uri(), // URI
        null, // Projection
        null, // Selection
        null, // Selection arguments
        null // sort order
);
```

`buildURI()` Syntax:

`Uri buildURI(String authority)`

Used to create custom uri with different authority and path segments.

```
public class ResPartner extends OModel {

        public static final String CUSTOMER_FILTER = "com.odoo.base.addons.res.res_partner";
        ...
        ...

        public ResPartner(Context context, OUser user){
                super(context, "res.partner", user);
        }

        @Override
    public Uri uri() {
        return buildURI(CUSTOMER_FILTER);
    }

    public Uri indianCustomers() {
        return uri().buildUpon().appendPath("in_customer_filter").build();
    }
}
```

`projection()` **Syntax:**

`String[] projection()`

`String[] projection(boolean onlyServerColumns)`

Returns string array of columns used as projection to `ContentResolver` `query()` method.

Optional parameter for getting only local column projection or server column projection.

```
ResPartner partner = new ResPartner(mContext, null);

Cursor cr = getContentResolver().query(
        partner.uri(), // URI
        partner.projection(), // Projection
        null, // Selection
        null, // Selection arguments
        null // sort order
);
```

Database Operations

`getLabel()` Returns label for selection value. Works with `OSelection` type

```
CRMLead leads = new CRMLead(mContext, null);

ODataRow row = leads.browse(1);

String stateLabel = leads.getLabel("state", row.getString("state"));
```

`browse()` Returns `DataRow` object for record. `null` if no record found

```
ResPartner partner = new ResPartner(mContext, null);
ODataRow row = partner.browse(2); // Here, 2 is belong to SQLite local auto incremented id i.e, _id
```

`browse()` with projection:

```
ResPartner partner = new ResPartner(mContext, null);
ODataRow row = partner.browse(new String[]{
                "name", "parent_id"
        }, 2);
```

`browse()` with projection, selection and selection arguments

```
ResPartner partner = new ResPartner(mContext, null);

List<ODataRow> rows = partner.browse(
        new String[]{"name","parent_id"},        // Projection
        "city = ?",                              // Selection
        new String[]{"Gandhinagar"}              // Selection arguments
        );
```

`getServerIds()`

returns list of server ids.

```
ResPartner partner = new ResPartner(mContext, null);

List<Integer> serverIds = partner.getServerIds();
```

`isEmptyTable()` returns true, if table is empty.

```
ResPartner partner = new ResPartner(mContext, null);

if(partner.isEmptyTable()){
        // Do synchronization stuff
}
```

`select()` Select all records from database

returns, list of `ODataRow`

```
ResPartner partner = new ResPartner(mContext, null);
List<ODataRow> rows = partner.select();
for(ODataRow row: rows){

        // code of block

}
```

`select()` with projection

```
ResPartner partner = new ResPartner(mContext, null);

List<ODataRow> rows = partner.select(
                new String[]{"name","parent_id","city"}
        );

for(ODataRow row: rows){

        // code of block

}
```

`select()` with projection, selection and selection arguments

```
ResPartner partner = new ResPartner(mContext, null);

List<ODataRow> rows = partner.select(
                new String[]{"name","parent_id","city"},
                "city = ?",
                new String[]{"Gandhinagar"}
        );

for(ODataRow row: rows){

        // code of block

}
```

`select()` with projection, selection, selection arguments and sortOrder

```
ResPartner partner = new ResPartner(mContext, null);

List<ODataRow> rows = partner.select(
                new String[]{"name","parent_id","city"},
                "city = ?",
                new String[]{"Gandhinagar"},
                "name DESC"
        );

for(ODataRow row: rows){

        // code of block

}
```

`insertOrUpdate()` Syntax:

`int insertOrUpdate(int serverId, OValues values)`

`int insertOrUpdate(String selection, String[] selectionArgs, OValues values)`

Creates new record if not exists or update if exists

```
ResPartner partner = new ResPartner(mContext, null);

OValues values = new OValues();
values.put("id",1);
values.put("name", "Dharmang Soni");

int newId = partner.insertOrUpdate(1, values);
```

`insertOrUpdate()` **with selection and selection arguments**

```
ResPartner partner = new ResPartner(mContext, null);

OValues values = new OValues();
values.put("id",1);
values.put("name", "Dharmang Soni");

int newId = partner.insertOrUpdate("id = ?", new String[]{"1"}, values);
```

insert() create new record with values. returns new created id if successfull, otherwise `OModel.INVALID_ROW_ID` ie., `-1`

```
ResPartner partner = new ResPartner(mContext, null);

OValues values = new OValues();
values.put("id",1);
values.put("name", "Dharmang Soni");

int newId = partner.insert(values);
```

delete() Delete record from local. Server record will be deleted when synchronization done.

Syntax:

`delete(int row_id)`

`delete(String selection, String[] selectionArgs)`

retuns number of record deleted.

```
ResPartner partner = new ResPartner(mContext, null);

int count = partner.delete(5);

// or

int count = partner.delete(OColumn.ROW_ID +" = ?", new String[]{"5"});
```

selectServerId() **Syntax:**

`int selectServerId(int row_id)`

returns server id for local record.

If record not found, returns `OModel.INVALID_ROW_ID` i.e., `-1`

```
ResPartner partner = new ResPartner(mContext, null);

int serverId = partner.selectServerId(2);
```

selectManyToManyRecords() **Syntax:**

`List<ODataRow> selectManyToManyRecords(String[] projection, String column_name, int row_id)`

Returns list of many to many relation records for column and row.

```
ResPartner partner = new ResPartner(mContext, null);

List<ODataRow> tags = partner.selectManyToManyRecords(new String[]{"name"}, "tag_ids", 2);
```

Here, **projection** is for related table (i.e., tags).

count() **Syntax:**

`int count(String selection, String[] selectionArgs)`

Returns number or record affecting selection.

```
ResPartner partner= new ResPartner(mContext, null);
int total = partner.count("is_company = ?", new String[]{"true"});
```

`update()` **Syntax:**

`int update(String selection, String[] args, OValues values)`

`int update(int row_id, OValues values)`

Update record value.

```
ResPartner partner = new ResPartner(mContext, null);

OValues values =new OValues();
values.put("name","Parth Gajjar");

int updated = partner.update(5, values);
```

`query()` **Syntax:**

`List<ODataRow> query(String sql)`

`List<ODataRow> query(String sql, String[] args)`

Returns list of record generated by query.

```
ResPartner partner = new ResPartner(mContext, null);

String sql = "SELECT _id, name, city FROM res_partner WHERE country_id = ?";

List<ODataRow> records = partner.query(sql, new String[]{"4"});
```

`executeRawQuery()` **Syntax:**

`Cursor executeRawQuery(String sql, String[] args)`

Used to execute raw queries.

```
ResPartner partner = new ResPartner(mContext, null);

Cursor cr = partner.executeRawQuery("select * from res_partner where customer = ?", new String[]{"tru
```

`executeQuery()` **Syntax:**

`void executeQuery(String sql)`

Execute queries. DROP TABLE, CREATE TABLE, etc...

`getName()` **Syntax:**

`String getName(int row_id)`

Returns `name` column value for record. *(@See setDefaultNameColumn() and getDefaultNameColumn())*

```
ResPartner partner = new ResPartner(mContext, null);

String name = partner.getName(3);
```

countGroupBy() **Syntax:**

`ODataRow countGroupBy(String column, String group_by, String having, String[] args)`

Returns `ODataRow` object with `total` column contains total number of records

```
ResPartner partner = new ResPartner(mContext, null);

int total = partner.countGroupBy("parent_id", "parent_id", "parent_id != ?", new String[]{"false"});
```

Synchronization related methods

getLastSyncDateTime() **Syntax:**

`String getLastSyncDateTime()`

Returns last synchronized date time for model.

```
ResPartner partner = new ResPartner(mContext, null);

String lastSyncDateTime = partner.getLastSyncDateTime();
```

defaultDomain() **Sytanx:**

`ODomain defaultDomain()`

Returns, default domain for model. called when synchronization occured. Default it return only blank object `new ODomain()` with no domain filter. You need to `override` this method for return you default domain filter for model.

```
class ResPartner extends OModel {

        ....
        ....
        ....

        @Override
        public ODomain defaultDomain(){
                ODomain domain = new ODomain();
                domain.put("customer","=",true);
                return domain;
        }

}
```

checkForCreateDate() **Syntax:**

`boolean checkForCreateDate()`

Return true if you need to check for create date on synchronization. It will filter `create_date` with sync limit from setting.

If return false, all the data are re-synchronized every time.

Default is `True`

```
class ResPartner extends OModel {
        ...
        ...
        ...

        @Override
        public boolean checkForCreateDate(){
                return true;
        }
}
```

`checkForWriteDate()` **Syntax:**

`boolean checkForWriteDate()`

Return true if you need to compare each of record with `write_date`. It will reduce the trafic for requests. Only different write_date records are syncronized.

If return false, nothing will checked with `write_date`

Default `True`

```
class ResPartner extends OModel {
        ...
        ...
        ...

        @Override
        public boolean checkForWriteDate(){
                return true;
        }
}
```

`allowUpdateRecordOnServer()` **Syntax:**

`boolean allowUpdateRecordOnServer()`

If true, framework will update record on server if local record dirty and `write_date` is newer that server's `write_date`

If false, framework will never update record on server with locally changed values.

Default `True`

```
class ResPartner extends OModel {
        ...
        ...
        ...

        @Override
        public boolean allowUpdateRecordOnServer(){
                return true;
        }
}
```

`allowCreateRecordOnServer()` **Syntax:**

`boolean allowCreateRecordOnServer()`

If true, framework will create record on server if it found `0` value to `id` column. (i.e., locally created records)

If false, framework will never create record on server.

Default `True`

```
class ResPartner extends OModel {
        ...
        ...
        ...

        @Override
        public boolean allowCreateRecordOnServer(){
                return true;
        }
}
```

`allowDeleteRecordOnServer()` **Syntax:**

`boolean allowDeleteRecordOnServer()`

If true, framework will delete record from server if it locally `inactive` (deleted by user locally)

If false, framework will never delete record from server

Default `True`

```
class ResPartner extends OModel {
        ...
        ...
        ...

        @Override
        public boolean allowDeleteRecordOnServer(){
                return true;
        }
}
```

`allowDeleteRecordInLocal()` **Syntax:**

`boolean allowDeleteRecordInLocal()`

If true, framework will remove local record if server record not exist.

If false, framework will not remove any local record if server record not exist.

Default `True`

```
class ResPartner extends OModel {
        ...
        ...
        ...

        @Override
        public boolean allowDeleteRecordInLocal(){
                return true;
        }
}
```

`onSyncStarted()` and `onSyncFinished()` Syntax:

`void onSyncStarted()`

`void onSyncFinished()`

Used when you need to perform any operation on sync start and finish.

```
class ResPartner extends OModel {
        ...
        ...
        ...

        @Override
        public void onSyncStarted(){
                // Code of block
        }

        @Override
        public void onSyncFinished(){
                // code of block
        }
}
```

`quickSyncRecords()` Syntax:

`void quickSyncRecords(ODomain domain)`

Used when you need to synchronize some of records depends on some domain. You need to run this method in `AsynTask` or any background service.

```
new AsyncTask<Void,Void,Void>{

        public Void doInBackground(Void...args){
                ResPartner partner = new ResPartner(mContext, null);

                ODomain domain = new ODomain();
                domain.add("is_company", "=", true);

                partner.quickSyncRecords(domain);

                return null;
        }
}.execute();
```

`quickCreateRecord()` Syntax:

`void ODataRow quickCreateRecord(ODataRow row)`

Return fully synced record data row object. You need to pass datarow object which contain `id` column with its server id value. Method will sync full record and return updated object.

```
new AsyncTask<Void,Void,Void>{

        public Void doInBackground(Void...args){
                ResPartner partner = new ResPartner(mContext, null);

                ODataRow row = new ODataRow();
                row.put("id", 49);
                row = partner.quickCreateRecord(row);
                return null;
        }
}.execute();
```

Other

`isInstalledOnServer()` Syntax:

`void isInstalledOnServer(String module_name, IModuleInstallListener callback)`

Check for module installed on server or not.

```
ResPartner partner = new ResPartner(mContex, null);
partner.isInstalledOnServer("notes", new IModuleInstallListener() {
    @Override
    public void installedOnServer(boolean isInstalled) {
                // isInstalled ?
    }
});
```

`getServerDataHelper()` Syntax:

`ServerDataHelper getServerDataHelper()`

Used to perform some of server operations (works with live network only).

Contains following methods:

- `getOdoo()` : Returns `Odoo` object
- `nameSearch()` : Name search on server
- `read()` : Read record from server
- `searchRecords()` : search records with fields, domain and limit
- `executeWorkFlow()` : execute server workflow with signal
- `callMethod()` : call model's custom methods
- `createOnServer()` : quick create record on server (not create locally)
- `updateOnServer()` : quick update record on server (not update locally)

BaseModelProvider.java Provide base database operation with `ContentResolver`,

extends `ContentProvider` and works with `Uri`

We required to use `BaseModelProvider` when creating custom sync service for model.

```
public class CustomersSyncProvider extends BaseModelProvider {

    @Override
    public String authority() {
        return ResPartner.AUTHORITY;
    }
}
```

```
<provider
    android:name="com.odoo.addons.customers.providers.CustomersSyncProvider"
    android:authorities="com.odoo.core.provider.content.sync.res_partner"
    android:label="@string/sync_label_customers"
    android:multiprocess="true" />
```

Adding custom Uri

- Register New Uri in model:

```
class MailMesage extends OModel {
        public static final String AUTHORITY = "your.custom.authority";
        ...
        ...
        ...

        @Override
    public Uri uri() {
        return buildURI(AUTHORITY);
    }

    public Uri inboxURI(){
        return uri().buildUpon().appendPath(MailProvider.KEY_INBOX_MESSAGES).build();
    }
}
```

- Adding Uri to `MailProvider`

```
public class MailProvider extends BaseModelProvider {
    public static final String TAG = MailProvider.class.getSimpleName();
    public static final int INBOX_MESSAGES = 234;
    public static final String KEY_INBOX_MESSAGES = "inbox_messages";

    @Override
    public boolean onCreate() {
        String path = new MailMessage(getContext(), null).getModelName()
                .toLowerCase(Locale.getDefault());
        matcher.addURI(authority(), path + "/" + KEY_INBOX_MESSAGES, INBOX_MESSAGES);
        return super.onCreate();
    }

    @Override
    public void setModel(Uri uri) {
        super.setModel(uri);
        mModel = new MailMessage(getContext(), getUser(uri));
    }

    @Override
    public String authority() {
        return MailMessage.AUTHORITY;
    }

    @Override
    public Cursor query(Uri uri, String[] base_projection, String selection, String[] selectionArgs,
                        String sortOrder) {
        int match = matcher.match(uri);
        if (match != INBOX_MESSAGES)
            return super.query(uri, base_projection, selection, selectionArgs, sortOrder);
        else {
                MailMessage mail = new MailMessage(getContext(), getUser(uri));
                return mail.executeRawQuery("select * from mail_message", null);
        }
    }
}
```

OSyncService.java Provide support for managing your sync requests and perform operation with your model data.. When uses sync adapter for custom sync service. Use `OSyncService` We need to extends `OSyncService` class which implement two methods:

1. getSyncAdapter()
2. performDataSync()

`getSyncAdapter()` **Syntax:**

`OSyncAdapter getSyncAdapter(OSyncService serviceObj, Context context)`

Used to return intial sync adapter object. (do not use chaining methods in this method)

```
public class CustomerSyncService extends OSyncService {

    @Override
    public OSyncAdapter getSyncAdapter(OSyncService service, Context context) {
        return new OSyncAdapter(context, ResPartner.class, this, true);
    }

    @Override
    public void performDataSync(OSyncAdapter adapter, Bundle extras, OUser user) {

    }
}
```

`performDataSync()` Called just before data sync start. You can put some filters (domains), limiting data requiest in this method. Also you can specify the next sync operation after its sync finish.

```
public class CustomerSyncService extends OSyncService {
    public static final String TAG = CustomerSyncService.class.getSimpleName();

    @Override
    public OSyncAdapter getSyncAdapter(OSyncService service, Context context) {
        return new OSyncAdapter(context, ResPartner.class, service, true);
    }

    @Override
    public void performDataSync(OSyncAdapter adapter, Bundle extras, OUser user) {
        ODomain domain = new ODomain();
        domain.add("active","=",true);
        adapter.syncDataLimit(80).setDomain(domain);
    }
}
```

Specify next sync operation for different model

```
public class CustomerSyncService extends OSyncService implements ISyncFinishListener {
    public static final String TAG = CustomerSyncService.class.getSimpleName();
    private Context mContext;
    @Override
    public OSyncAdapter getSyncAdapter(OSyncService service, Context context) {
        mContext = context;
        return new OSyncAdapter(context, ResPartner.class, service, true);
    }

    @Override
    public void performDataSync(OSyncAdapter adapter, Bundle extras, OUser user) {
        if(adapter.getModel().getModelName().equals("res.partner")) {
            ODomain domain = new ODomain();
            domain.add("active", "=", true);
            adapter.syncDataLimit(80).setDomain(domain);
            adapter.onSyncFinish(this);
        }
    }

    @Override
    public OSyncAdapter performNextSync(OUser user, SyncResult syncResult) {
        return new OSyncAdapter(mContext, ResCountry.class, this, true);
    }
}
```

Here, You can see we have checked for model name. Each time when you have chaining sync adapters you need to check for model name in `performDataSync`. Otherwise, your service will go in infinite loop.

`onSyncFinish()` will tell service to perform next operation and service will continue to complete all the task in chain.

Note: You have to check everytime for each of model to pass domain and filters by getting its model name.

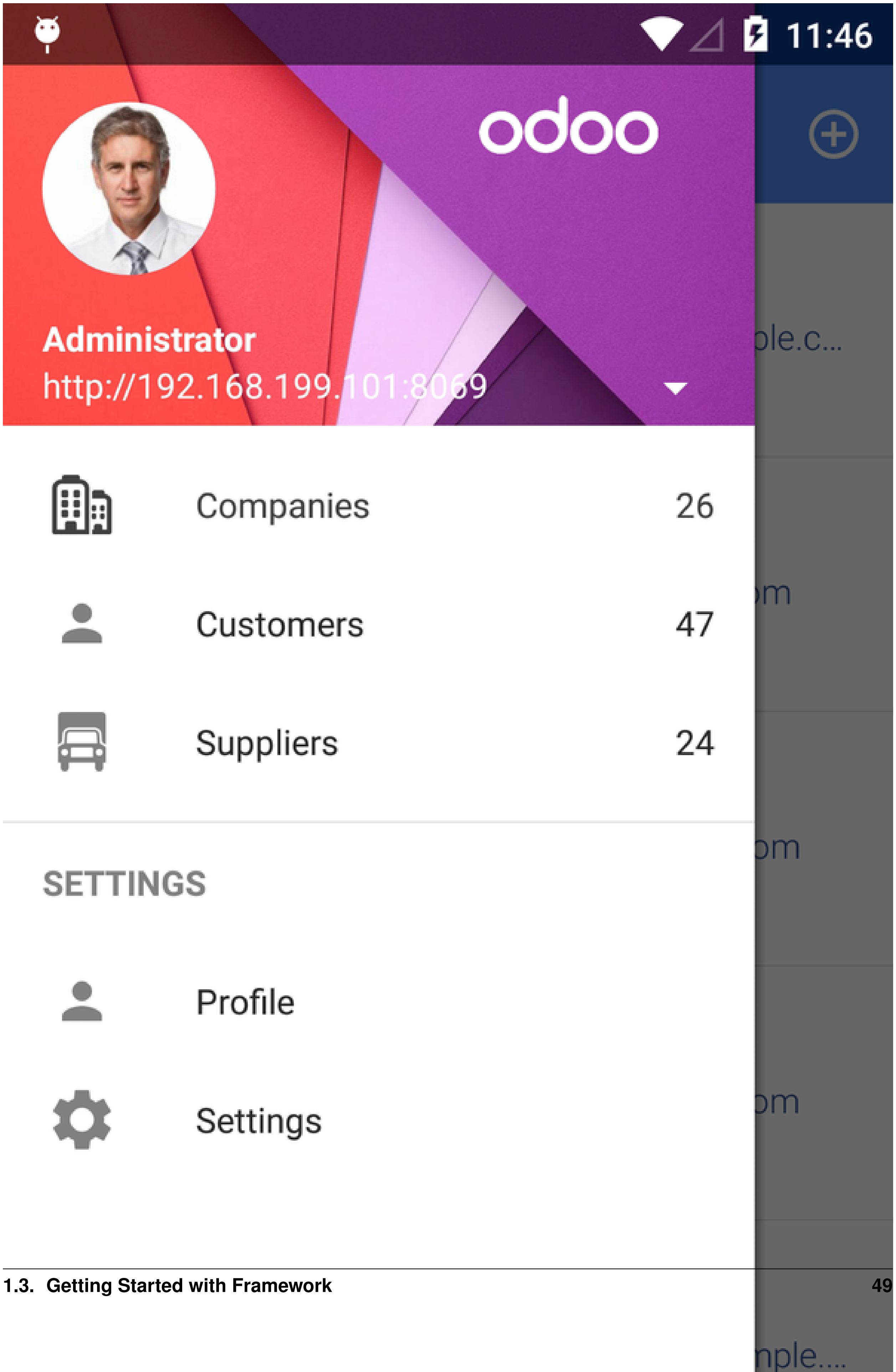
If you dont wont to continue with next sync operation but you need to do some operation after sync finish. You can do it in two ways:

1. Just add sync finish call back and return `null`. Do your operation before returning `null` or
2. Just override `onSyncFinished()` method in your model. Where you can perform your operations.

Drawer Menu

The navigation drawer is a panel that transitions in from the left edge of the screen and displays the app's main navigation options.

Odoo mobile framework provide feature to add dynamic menu to your application just by providing list of menus.


11:46
odoo
Administrator
http://192.168.199.101:8069
Companies 26
Customers 47
Suppliers 24
SETTINGS
Profile
Settings
ple.c...
om
om
om
mple....

By extending `BaseFragment` class you are allowed to implement `drawerMenu()` method. Which returns list of `DrawerItem` with key, title and your object of fragment or class type for Activity.

Here is simple example for loading drawer items:

```
class Customers extends BaseFragment {
        ...
        ...

        @Override
        public List<ODrawerItem> drawerMenus(Context context) {
            List<ODrawerItem> items = new ArrayList<>();
            items.add(new ODrawerItem(KEY).setTitle("Customers")
                    .setIcon(R.drawable.ic_action_customers)
                    .setExtra(extra(Type.Customer))
                    .setInstance(new Customers()));
            items.add(new ODrawerItem(KEY).setTitle("Suppliers")
                    .setIcon(R.drawable.ic_action_suppliers)
                    .setExtra(extra(Type.Supplier))
                    .setInstance(new Customers()));
            items.add(new ODrawerItem(KEY).setTitle("Companies")
                    .setIcon(R.drawable.ic_action_company)
                    .setExtra(extra(Type.Company))
                    .setInstance(new Customers()));
            return items;
        }

        public Bundle extra(Type type) {
            Bundle extra = new Bundle();
            extra.putString(EXTRA_KEY_TYPE, type.toString());
            return extra;
        }

        ...
        ...
}
```

ODrawerItem.java `ODrawerItem` class contains information for your menu item.

Syntax:

`ODrawerItem(String key)`

This class contains chaining methods such as :

- setTitle()
- setGroupTitle()
- setCounter()
- setInstance()
- setExtra()
- setIcon()

`setTitle()` Sets title for drawer menu.

Sytanx:

`ODrawerItem setTitle(String title)`

```
ODrawerItem item = new ODrawerItem("my_menu")
        .setTitle("Dashboard");
```

`setGroupTitle()` Works as seperator.

Syntax:

`ODrawerItem setGroupTitle()`

```
ODrawerItem item = new ODrawerItem("my_menu")
        .setTitle("Dashboard")
        .setGroupTitle();
```

`setCounter()` Shows number of record at right of menu.

Syntax:

`ODrawerItem setCounter(int counter)`

```
ODrawerItem item = new ODrawerItem("my_menu")
        .setTitle("Dashboard")
        .setCounter(10);
```

`setInstance()` Sets loading fragment instance or activity class.

Syntax:

`ODrawerItem setInstance(Fragment fragment)`

`ODrawerItem setInstance(Class<? extends Activity> classType)`

`ODrawerItem setInstance(Class<? extends ActionbarActivity> classType)`

`ODrawerItem setInstance(Class<? extends FragmentActivity> classType)`

```
ODrawerItem dashboard = new ODrawerItem("dashbaord")
        .setTitle("Dashboard")
        .setCounter(10)
        .setInstance(new Dashbaord());

ODrawerItem settings  = new ODrawerItem("settings")
        .setTitle("Settings")
        .setInstance(SettingActivity.class);
```

`setExtra()` Sets extra bundle passed with fragment or activity.

Syntax:

`ODrawerItem setExtra(Bundle data)`

```
Bundle data = new Bundle();
data.putInt("record_id", 10);

ODrawerItem item = new ODrawerItem("my_menu")
        .setTitle("Projects")
        .setInstance(new Projects())
        .setExtra(data);
```

`setIcon()` Shows icon for menu

Syntax:

`ODrawerItem setIcon(int resource_id)`

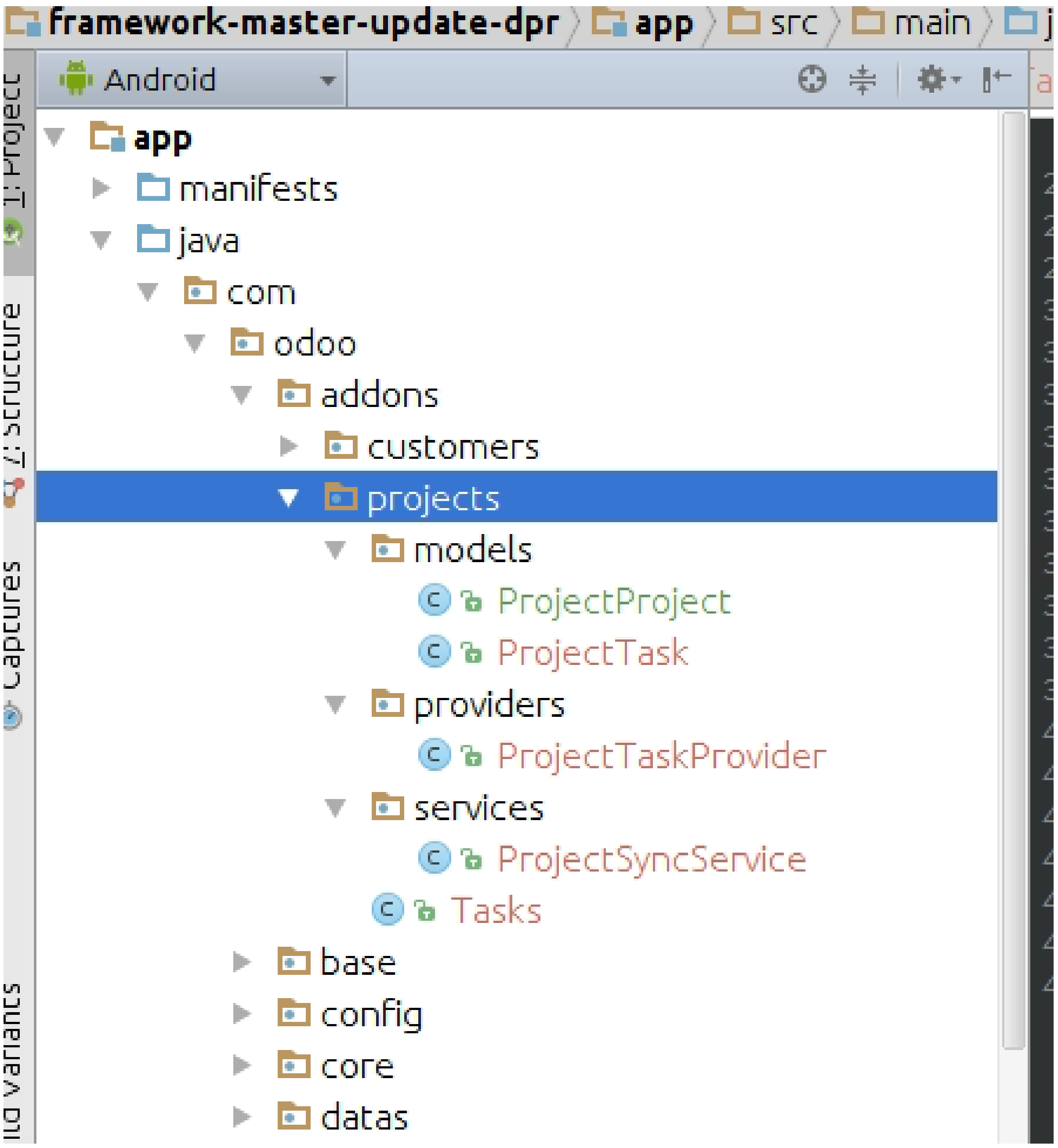
```
ODrawerItem item = new ODrawerItem("my_key")
        .setTitle("Projects")
        .setInstance(new Projects())
        .setIcon(R.drawable.ic_action_projects);
```

Addons

Here, We take example for Project tasks.

Creating addon with odoo mobile Each of the addon in the odoo mobile app is the feature for your application. It contains, models, providers (for synchronization service and database operation), background services, **BaseFragment** (your addon startup class fragment), another **Activities** or **Fragments** as you required and other utilities used by your addon.

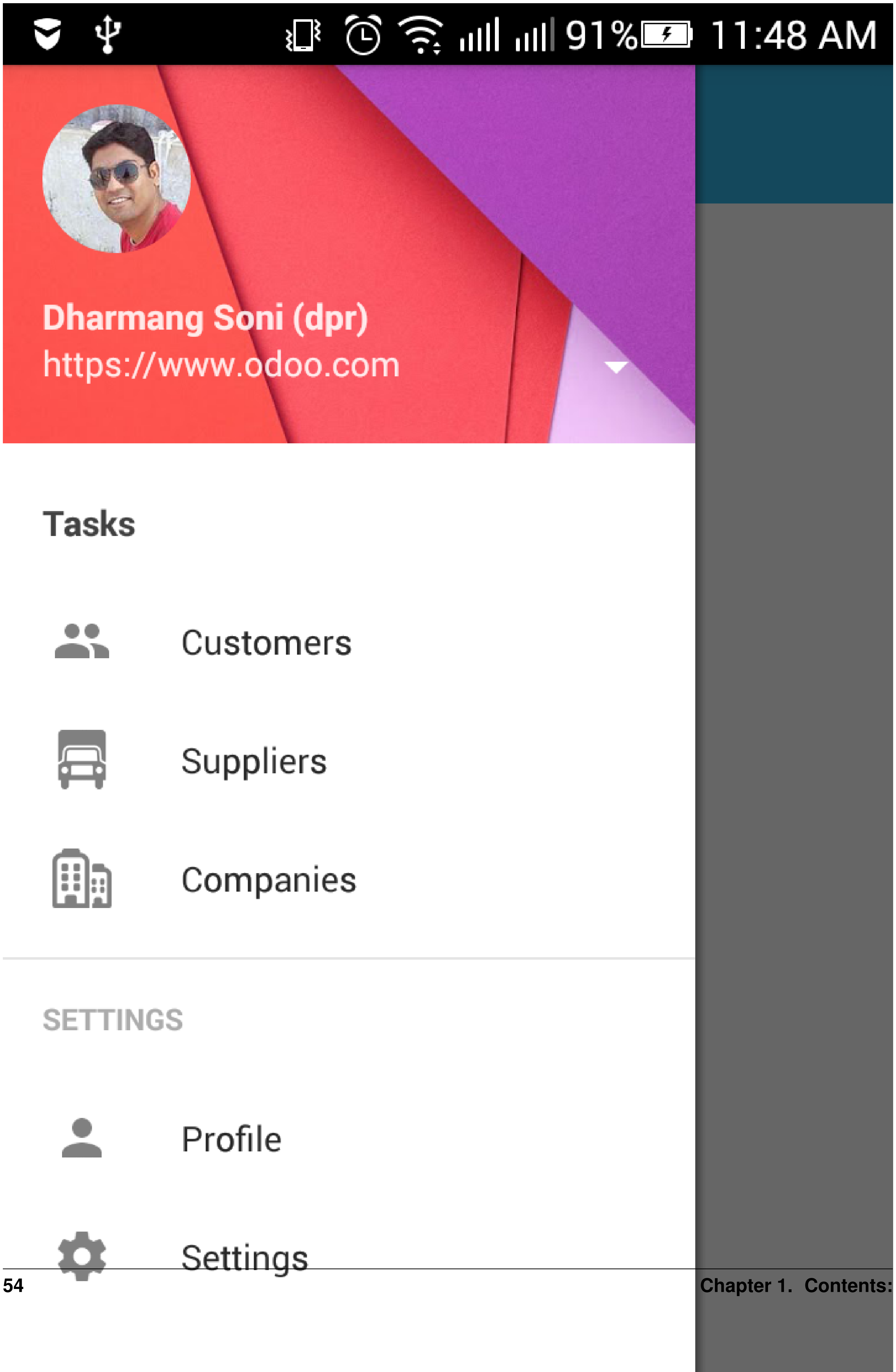
Here you can see one example with some of models, services, providers and other classes.



Your addon main class extends `BaseFragment` and implement two methods:

1. drawerMenus()
2. database()

`drawerMenus()` For your addons navigation menus, BaseFragment provide method to be implement for generating menu under application drawer. Returns list of `DrawerItem`


91%
11:48 AM
Dharmang Soni (dpr)
https://www.odoo.com
Tasks
Customers
Suppliers
Companies
SETTINGS
Profile
Settings

```
class Tasks extends BaseFragments {

        ...
        ...
        ...

        @Override
    public List<ODrawerItem> drawerMenus(Context context) {
        List<ODrawerItem> menu = new ArrayList<>();
        menu.add(new ODrawerItem(TAG).setTitle("Tasks").setInstance(new Tasks()));
        return menu;
    }
}
```

@See more Drawer Menu

database() Database method return class type of base database model. It used for creating database tables when appliction start first time.

return type class for model.

```
public class Tasks extends BaseFragment {
    public static final String TAG = Tasks.class.getSimpleName();

    @Override
    public List<ODrawerItem> drawerMenus(Context context) {
        List<ODrawerItem> menu = new ArrayList<>();
        menu.add(new ODrawerItem(TAG).setTitle("Tasks").setInstance(new Tasks()));
        return menu;
    }

    @Override
    public Class<ProjectTask> database() {
        return ProjectTask.class;
    }
}
```

Creating Models for addon Here, we are going to create `ProjectProject` model class for `project.project` and `ProjectTask` model class for `project.task` under `com.odoo.addons.projects.models` package

```
public class ProjectProject extends OModel {
    public static final String TAG = ProjectProject.class.getSimpleName();

    OColumn name = new OColumn("Name", OVarchar.class).setSize(100);

    public ProjectProject(Context context, OUser user) {
        super(context, "project.project", user);
    }
}


public class ProjectTask extends OModel {
    public static final String TAG = ProjectTask.class.getSimpleName();

    OColumn name = new OColumn("Name", OVarchar.class).setSize(100);
    OColumn project_id = new OColumn("Project", ProjectProject.class, OColumn.RelationType.ManyToOne)
    OColumn description = new OColumn("Description", OText.class);

    public ProjectTask(Context context, OUser user) {
        super(context, "project.task", user);
    }
}
```

`ProjectTask` contains `project_id` column related to `ProjectProject` class type with `ManyToOne` relation.

We have passed `ProjectTask.class` to `database()` method. So, when framework creating database, it will take all the relation models in columns and create its master table.

Now, for running app. You need to register your main class to addons registery as below.

Registering addon to Addons registry Each of the modules (addons) are registered under `Addons.java` class of `com.odoo.config` package.

```
public class Addons extends AddonsHelper {

    OAddon customers = new OAddon(Customers.class).setDefault();
    OAddon tasks = new OAddon(Tasks.class);
}
```

To make tasks default just add chaining method, `setDefault()`

To short menu, by addons just rename your addons variable in alphabatical order.

```
public class Addons extends AddonsHelper {

    OAddon a_tasks = new OAddon(Tasks.class).setDefault();
    OAddon b_customers = new OAddon(Customers.class);
}
```

Creating Sync service The sync service component in app encapsulates the code for the tasks that transfer data between the device and a server. Based on the scheduling and triggers provided by application, the sync service framework runs the code in the sync adapter component and perform database operation with received data from server. To create sync service for your addon, you need to add the following pieces:

- Sync Service class (extends `OSyncService` class)
- Custom database provider class with your `AUTHORITY` (extends `BaseModelProvider` class)
- Sync adapter XML metadata file.
- Declarations in the app manifest.

Sync Service class A component that allows the sync framework to run the code in your sync adapter class for given model.

@See more *OSyncService.java*

```
package com.odoo.addons.projects.services;

import android.content.Context;
import android.os.Bundle;

import com.odoo.addons.projects.models.ProjectTask;
import com.odoo.core.service.OSyncAdapter;
import com.odoo.core.service.OSyncService;
import com.odoo.core.support.OUser;

public class ProjectSyncService extends OSyncService {
    public static final String TAG = ProjectSyncService.class.getSimpleName();

    @Override
    public OSyncAdapter getSyncAdapter(OSyncService service, Context context) {
        return new OSyncAdapter(getApplicationContext(), ProjectTask.class, this, true);
    }

    @Override
    public void performDataSync(OSyncAdapter adapter, Bundle extras, OUser user) {
                adapter.syncDataLimit(80);
    }
}
```

Custom database provider class with your AUTHORITY (extends BaseModelProvider class) The sync adapter framework is designed to work with device data managed by the flexible and highly secure content provider framework. For this reason, the sync adapter framework expects that an app that uses the framework has already defined a content provider for its local data. If the sync adapter framework tries to run your sync adapter, and your app doesn't have a content provider, your sync adapter crashes.

Here, odoo mobile framework have pre defined methods and mechanism to handle your data with content provider. The one `BaseModelProvider` is central `ContentProvider` for all models with base `AUTHORITY` shared with each of the model.

But, in case of creating custom sync service we required different content provider to be registerd in Android Manifest file. To do so, we just need to extend `BaseModelProvider` and provide our custom AUTHORITY by overriding `authority()` method.

Here is snippet:

Adding custom AUTHORITY to Model

```
public class ProjectTask extends OModel {
        public static final String TAG = ProjectTask.class.getSimpleName();
        public static final String AUTHORITY = "com.odoo.addons.projects.project_tasks";

        OColumn name = new OColumn("Name", OVarchar.class).setSize(100);
        OColumn project_id = new OColumn("Project", ProjectProject.class, OColumn.RelationType.ManyTo
        OColumn description = new OColumn("Description", OText.class);

        public ProjectTask(Context context, OUser user) {
            super(context, "project.task", user);
        }

        @Override
        public Uri uri() {
            return buildURI(AUTHORITY);
        }
}
```

Creating provider class:

```
package com.odoo.addons.projects.providers;
```

```
import com.odoo.addons.projects.models.ProjectTask;
import com.odoo.core.orm.provider.BaseModelProvider;

public class ProjectTaskProvider extends BaseModelProvider {
    public static final String TAG = ProjectTaskProvider.class.getSimpleName();

    @Override
    public String authority() {
        return ProjectTask.AUTHORITY;
    }
}
```

Sync adapter XML metadata file A file containing information about your sync adapter. The framework reads this file to find out how to load and schedule your data transfer.

To plug your sync adapter component into the framework, you need to provide the framework with metadata that describes the component and provides additional flags. The metadata specifies the account type you've created for your sync adapter, declares a content provider authority associated with your app, controls a part of the system user interface related to sync adapters, and declares other sync-related flags. Declare this metadata in a special XML file stored in the `/res/xml/` directory in your app project. You can give any name to the file, although it's usually called `syncadapter.xml`.

See more at : https://developer.android.com/training/sync-adapters/creating-sync-adapter.html#CreateSyncAdapterMetadata

```
<sync-adapter xmlns:android="http://schemas.android.com/apk/res/android"
    android:accountType="com.odoo.auth"
    android:contentAuthority="com.odoo.addons.projects.project_tasks"
    android:supportsUploading="true"
    android:userVisible="true" />
```

Declarations in the app manifest Registering Service in Manifest file

```
<service android:name=".addons.projects.services.ProjectSyncService"
        android:exported="true"
        android:process=":sync_tasks">
    <intent-filter>
        <action android:name="android.content.SyncAdapter" />
    </intent-filter>

    <meta-data
        android:name="android.content.SyncAdapter"
        android:resource="@xml/task_sync_adapter" />
</service>
```

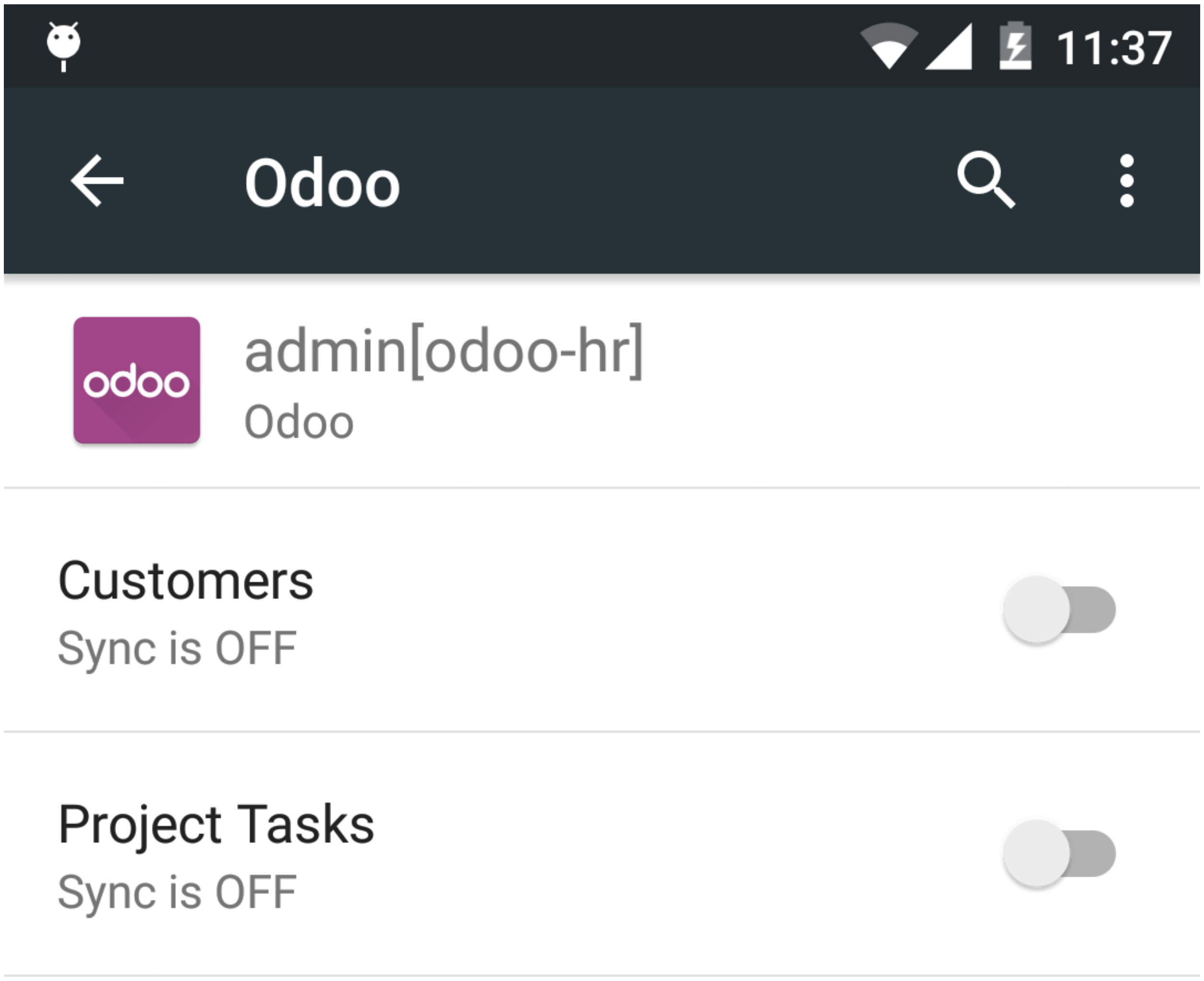
Registering Provider for sync service :

```
<provider
    android:name="com.odoo.addons.projects.providers.ProjectTaskProvider"
    android:authorities="com.odoo.addons.projects.project_tasks"
    android:label="Project Tasks"
    android:multiprocess="true" />
```

All Done !

Launch your application by cleaning app data. (need to clean because we have updated database.)

You can see sync option for project tasks under your account:



admin[odoo-hr]
Odoo

Customers
Sync is OFF

Project Tasks
Sync is OFF

Working with `R.layout.common_listview` layout `common_listview` layout contains `ListView` with `SwipeRefreshLayout` and empty view layout. If you need to load list of rows on your fragment load you can use this common list view which can be easy to integrate with `BaseFragment` as shown below:

Inflating view

```
public class Tasks extends BaseFragment {
    public static final String TAG = Tasks.class.getSimpleName();

    private View mView;

    @Override
    public View onCreateView(LayoutInflater inflater,
                             ViewGroup container, Bundle savedInstanceState) {
        return inflater.inflate(R.layout.common_listview, container, false);
    }

    @Override
    public void onViewCreated(View view, Bundle savedInstanceState) {
        super.onViewCreated(view, savedInstanceState);
        mView = view;
    }


        ...
        ...
}
```

Declare and initialize controls

```
public class Tasks extends BaseFragment {
        public static final String TAG = Tasks.class.getSimpleName();

        private View mView;
        private ListView listView;
        private OCursorListAdapter listAdapter;

        ...
        ...

        @Override
        public void onViewCreated(View view, Bundle savedInstanceState) {
            super.onViewCreated(view, savedInstanceState);
            mView = view;
            listView = (ListView) mView.findViewById(R.id.listview);
            listAdapter = new OCursorListAdapter(getActivity(), null, android.R.layout.simple_list_it
            listView.setAdapter(listAdapter);
        }

        ...
        ...
```

Registering loader manager

```
public class Tasks extends BaseFragment implements LoaderManager.LoaderCallbacks<Cursor> {
    public static final String TAG = Tasks.class.getSimpleName();

    ...
    ...
```

```
        @Override
        public void onViewCreated(View view, Bundle savedInstanceState) {
                super.onViewCreated(view, savedInstanceState);
                mView = view;
                listView = (ListView) mView.findViewById(R.id.listview);
                listAdapter = new OCursorListAdapter(getActivity(), null, android.R.layout.simple_lis
                listView.setAdapter(listAdapter);
                getLoaderManager().initLoader(0, null, this);
        }

        @Override
        public Loader<Cursor> onCreateLoader(int id, Bundle args) {
                return new CursorLoader(getActivity(), db().uri(), null, null, null, null);
        }

        @Override
        public void onLoadFinished(Loader<Cursor> loader, Cursor data) {
                listAdapter.changeCursor(data);
                if (data.getCount() > 0) {
                        OControls.setGone(mView, R.id.loadingProgress);
                        OControls.setVisible(mView, R.id.swipe_container);
                        OControls.setGone(mView, R.id.no_items);
                } else {
                        OControls.setGone(mView, R.id.loadingProgress);
                        OControls.setGone(mView, R.id.swipe_container);
                        OControls.setVisible(mView, R.id.no_items);
                        OControls.setText(mView, R.id.title, "No Tasks found");
                        OControls.setText(mView, R.id.subTitle, "Swipe to check new tasks");
                }
                if (db().isEmptyTable()) {
                        // Request for sync
                }
        }

        @Override
        public void onLoaderReset(Loader<Cursor> loader) {
                listAdapter.changeCursor(null);
        }

        ...
        ...
}
```

Registering sync (SwipeRefresh) control and sync observer @See more *setHasSwipeRefreshView()*

@See more *setHasSyncStatusObserver()*

Swipe refresh view listener:

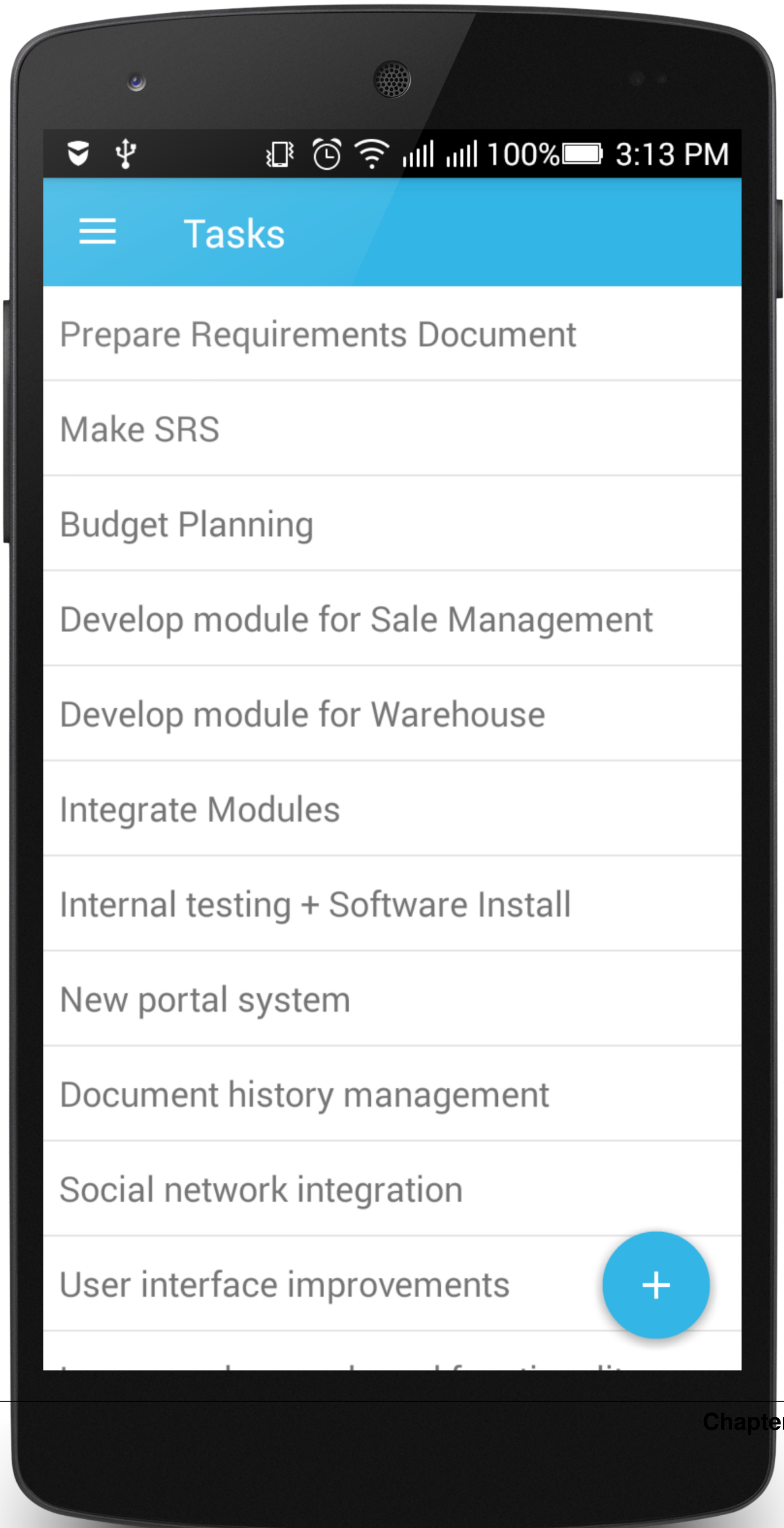
```
public class Tasks extends BaseFragment implements LoaderManager.LoaderCallbacks<Cursor>,
        ISyncStatusObserverListener, SwipeRefreshLayout.OnRefreshListener {
        ...
        ...

        @Override
        public void onLoadFinished(Loader<Cursor> loader, Cursor data) {
                listAdapter.changeCursor(data);
                if (data.getCount() > 0) {
                        OControls.setGone(mView, R.id.loadingProgress);
                        OControls.setVisible(mView, R.id.swipe_container);
                        OControls.setGone(mView, R.id.no_items);
                        setHasSwipeRefreshView(mView, R.id.swipe_container, this);
                } else {
                        OControls.setGone(mView, R.id.loadingProgress);
                        OControls.setGone(mView, R.id.swipe_container);
                        OControls.setVisible(mView, R.id.no_items);
                        setHasSwipeRefreshView(mView, R.id.no_items, this);
                        OControls.setText(mView, R.id.title, "No Tasks found");
                        OControls.setText(mView, R.id.subTitle, "Swipe to check new tasks");
                }
                if (db().isEmptyTable()) {
                        // Request for sync
                        onRefresh();
                }
        }

        @Override
        public void onRefresh() {
                if (inNetwork()) {
                        parent().sync().requestSync(ProjectTask.AUTHORITY);
                }
        }

        ...
        ...
}
```

Sync status observer:

```
public class Tasks extends BaseFragment implements LoaderManager.LoaderCallbacks<Cursor>,
    ISyncStatusObserverListener {

        ...
        ...

        @Override
        public void onViewCreated(View view, Bundle savedInstanceState) {
                super.onViewCreated(view, savedInstanceState);
                mView = view;
                listView = (ListView) mView.findViewById(R.id.listview);
                listAdapter = new OCursorListAdapter(getActivity(), null, android.R.layout.simple_lis
                listView.setAdapter(listAdapter);

                setHasSyncStatusObserver(TAG, this, db());
                getLoaderManager().initLoader(0, null, this);
        }


        @Override
        public void onStatusChange(Boolean changed) {
                if(changed){
                        getLoaderManager().restartLoader(0, null, this);
                }
        }

        ...
        ...

}
```

Binding View

```
public class Tasks extends BaseFragment implements LoaderManager.LoaderCallbacks<Cursor>,
        ISyncStatusObserverListener, SwipeRefreshLayout.OnRefreshListener, OCursorListAdapter.OnViewB
    ...
    ...

    @Override
    public void onViewCreated(View view, Bundle savedInstanceState) {
        super.onViewCreated(view, savedInstanceState);
        mView = view;
        listView = (ListView) mView.findViewById(R.id.listview);
        listAdapter = new OCursorListAdapter(getActivity(), null, android.R.layout.simple_list_item_1
        listView.setAdapter(listAdapter);

        listAdapter.setOnViewBindListener(this);

        setHasSyncStatusObserver(TAG, this, db());
        getLoaderManager().initLoader(0, null, this);
    }

    @Override
    public void onViewBind(View view, Cursor cursor, ODataRow row) {
        OControls.setText(view, android.R.id.text1, row.getString("name"));
    }

    ...
    ...

}
```



Prepare Requirements Document

Make SRS

Budget Planning

Develop module for Sale Management

Develop module for Warehouse

Integrate Modules

Internal testing + Software Install

New portal system

Document history management

Social network integration

User interface improvements

Controls (Form, Fields, actionbar spinner)

To provide faster application development, odoo mobile framework come with some of usefull controls which work with your model record, integrated with chatter view, different data types, on change methods, validations, live search and more.

`OForm` widget `OForm` widget used when you need to show model record. It helps record to bind view as per its type. Uses `OField` as its inner widgets. You need to just add your fields under `OForm` controls.

It extends `LinearLayout` so you can easily change its layout property as per `LinearLayout` does.

Some of other property works with `OForm`:

- `prefix:editableMode` : boolean
- `prefix:modelName` : string
- `prefix:autoUIGenerate` : boolean
- `prefix:controlIconTint`: color

Here, `prefix` is your resource attribute reference.

```
<RelativeLayout xmlns:android=-http://schemas.android.com/apk/res/android-
    xmlns:prefix=-http://schemas.android.com/apk/res-auto-
    android:layout_width=-match_parent-
    android:layout_height=-match_parent->

        <odoo.controls.OForm
                android:id=-@+id/customerFormEdit-
                prefix:modelName=-res.partner-
                android:layout_width=-match_parent-
                android:orientation=-vertical-
                android:layout_height=-wrap_content->

                <!-- OFields controls here //-->

        </odoo.controls.OForm>

</RelativeLayout>
```

You can take any of valid name for prefix, ADT default take `app` as prefix.

What if you want to add other controls in OForm widget ?

Yes, you can also add other controls such as `ImageView`, `TextView` or any other controls under `OForm`.

editableModel Takes boolean value (`true|false`). default `false`. Not required property

Make your form work in editable mode or read only mode.

modelName Takes string value (model name). Required property

OForm uses model name to bind your field property. Such as field label, its type and other properties.

autoUIGenerate Takes boolean value (`true|false`). Default `true` Not required property

Responsible to generate responsive layout for your form fields. (works with OFields only, non of your other controls are affected by autoUIGenerate property)

Adds icon (if you have provided to OField), label for field, proper spacing and marging and some other UI changes.

controlIconTint Takes color reference value or color code. Not required property

Changes all your OField widget icon tint color.

Initialize form widget `OForm form = (OForm) view.findViewById(R.id.myForm);`

Methods:

initForm() **Syntax:**

`void initForm(ODataRow record);`

Initiate form with given record. If record == null, it will load default values if given and create form for new record.

```
OForm form = (OFrom) view.findViewById(R.id.myForm);
form.initForm(null);
```

setEditable() **Syntax:**

`void setEditable(Boolean editable)`

Changes form behaviour to editable/readonly at runtime.

```
OForm form  = (OForm) view.findViewById(R.id.myForm);
form.initForm(null);
form.setEditable(true);
```

loadChatter() **Syntax:**

`void loadChatter(boolean loadChatter)`

Loads chatter view at bottom of form. (If record is not synced on server chatter view is not loaded.).

This method must be called before `initForm()`

```
OForm form  = (OForm) view.findViewById(R.id.myForm);
form.loadChatter(true);
form.initForm(record);
```

setIconTintColor() **Syntax:**

`void setIconTintColor(int color)`

Changes fields icon tint color at runtime. This method must be called before `initForm()`

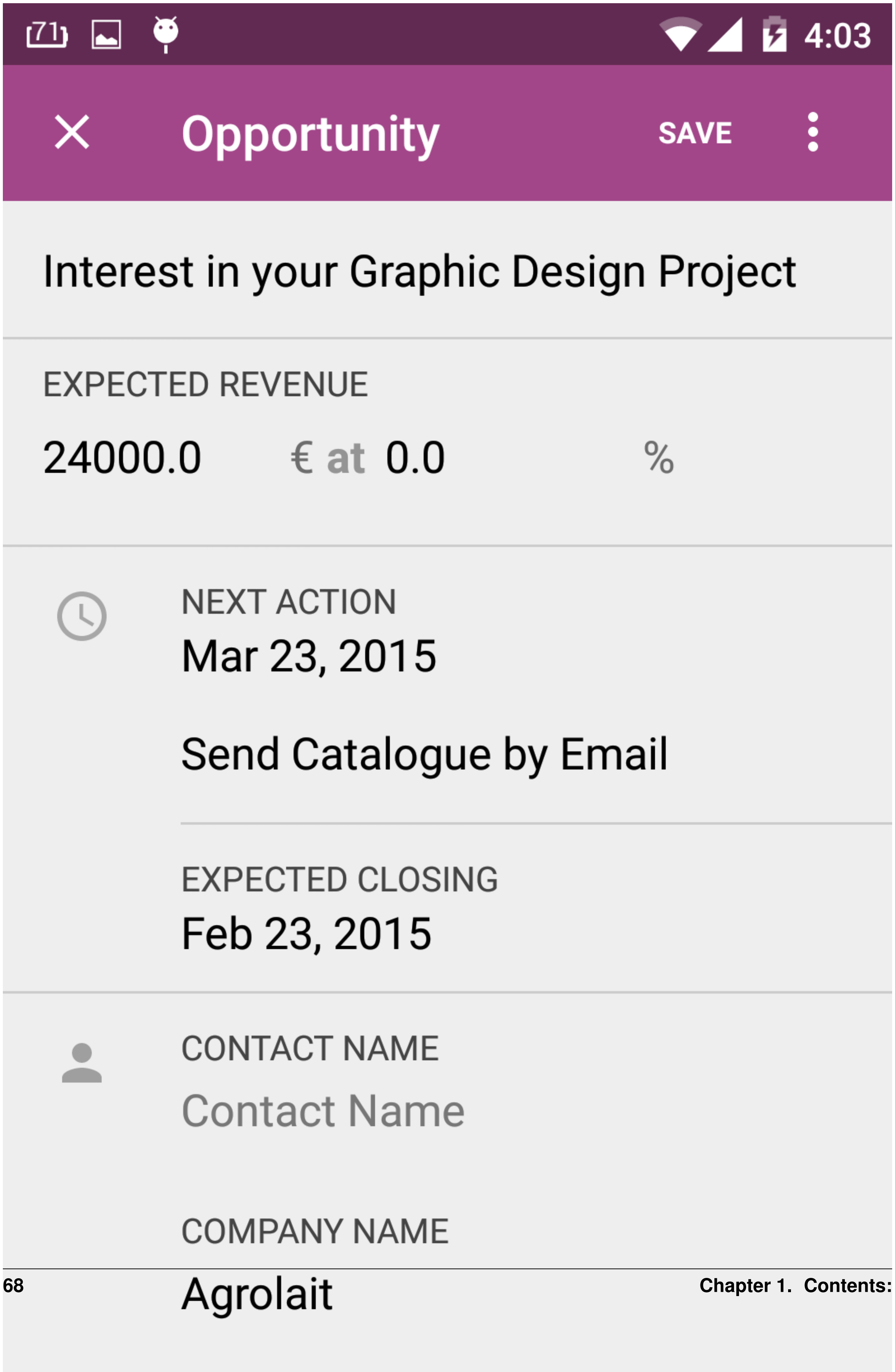
```
OForm form  = (OForm) view.findViewById(R.id.myForm);
form.setIconTintColor(Color.MAGENTA);
form.initForm(record);
```

getValues() **Syntax:**

`OValues getValues()`

Returns form values, used when you need to create or udpate record. If returns null, may be validation failed.

```java
OForm form  = (OForm) view.findViewById(R.id.myForm);
form.initForm(record);

...
...

OValues updatedValues = form.getValues();
if(updatedValues != null){
        // Store updated values.
}
```



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Agrolait

`OField` widget OField widget works with `OForm` widget. Each of OField is your model's column or just dummy column.

If OForm `autoUIGenerate` flag is on, it will create UI with icon (if any), label and column input part. (input box, checkbox, radio button, datetime picker, many to one widget - spinner, and more^^^)

Some of properties you need to know before using `OField` control.

`fieldName` : string Model's column name or your dummy column name.

```
<odoo.controls.OField
        app:fieldName=-name-
        android:layout_height=-wrap_content-
        android:layout_width=-match_parent->
</odoo.controls.OField>
```

`iconResource` : reference Field's icon resource. Shows left of control.

```
<odoo.controls.OField
        android:layout_width=-match_parent-
        app:iconResource=-@drawable/ic_action_message-
        app:fieldName=-email-
        android:layout_height=-wrap_content->
</odoo.controls.OField>
```

`iconTint` : reference|color Changes icon color. takes color refernece or color code.

```
<odoo.controls.OField
        android:layout_width=-match_parent-
        app:iconResource=-@drawable/ic_action_message-
        app:fieldName=-email-
        app:iconTint=-@color/android_green-
        android:layout_height=-wrap_content->
</odoo.controls.OField>
```

`showIcon` : boolean, `showLabel` : boolean Show/Hide icon and label. Takes true or false. Default is true

```
<odoo.controls.OField
        android:layout_width=-match_parent-
        app:iconResource=-@drawable/ic_action_message-
        app:fieldName=-email-
        app:showLabel=-false-
        android:layout_height=-wrap_content->
</odoo.controls.OField>
```

`parsePattern` : string Used with type, Date, DateTime

```
<odoo.controls.OField
        android:layout_width=-match_parent-
        app:fieldName=-create_date-
        app:parsePattern=-MMM dd, yyyy hh:mm a-
        android:layout_height=-wrap_content->
</odoo.controls.OField>
```

`withOutSidePadding` : boolean Ignore auto UI generate side padding.

`fieldType` : enum Generally it automatically taken from Column type. But you can use when you are creating dummy field for OForm

Possible types:

- `Text`
- `Text`
- `ManyToOne`
- `Selection`
- `Date`
- `DateTime`
- `Blob`
- `Time`

`widgetType` : enum In some cases you need to change the control behaviour for your column. such as boolean; it can be shown as checkbox or radio or switch. You can specify your control behaviour by using widget type.

`Switch` Supported types : boolean

Makes your boolean field behave like switch

`RadioGroup` Supported types : boolean

Make your boolean field behave like radio button

`SelectionDialog` Supported types: ManyToOne, Selection

Makes dialog to select from available values refer to manytoone model or given selection.

`Searchable` Supported types: ManyToOne, Selection

Makes reference values searchable. Open other activity for provide search with available records

`SearchableLive` Supported types: ManyToOne

Makes reference value searchable even if there are no any local record regarding your search. If network available it will search on live server and when you click on that record it will available locally

`Image` Supported types: Blob

Consider your blob binary data as image and view image in control.

`ImageCircle` Same as Image, create circular image only.

`Duration` Supported types: Float

Converts float value to duration and display as duration.

`widgetImageSize` : dimension Changes image size (works with Widget type Image or ImageCircle)

`withBottomPadding` : boolean Ignore adding bottom padding by auto UI generator if provided false.

`withTopPadding` : boolean Ignore adding top padding by auto UI generator if provided false.

`controlLabel` : string|reference

Label for control. takes string or string reference.

`defaultValue` : reference|string Default value for control. If no data found from record for field it will takes default value.

`defaultImage` : reference Default image for Image widget type. If no image found.

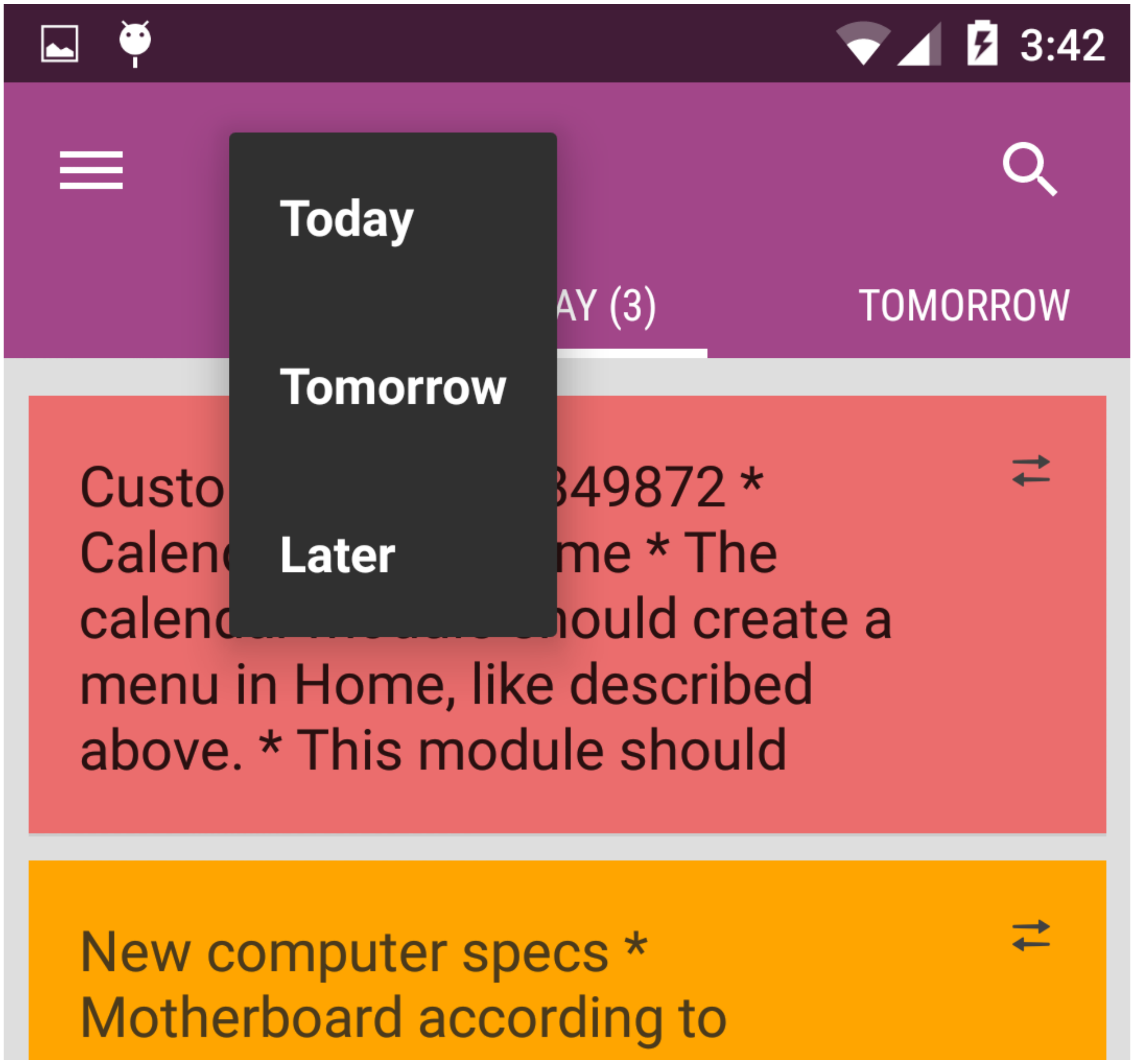
`valueArray` : reference Used for dummy column, value array reference (works with selection type)

`fieldTextAppearance` : reference Field text appearance reference

`fieldTextSize` : dimension, `fieldLabelSize` : dimension Field text and label size in dimension.

`fieldTextColor` : color , `fieldLabelColor` : color Field text and label color

`fieldLabelTextAppearance` : reference Field label text appearance



Actionbar Spinner Actionbar spinner provide quick filter and navigations. `BaseFragment` provide method to implement spinner to your fragment.

By calling following method your can acitvate spinner control for actionbar from `onViewCreated` method.

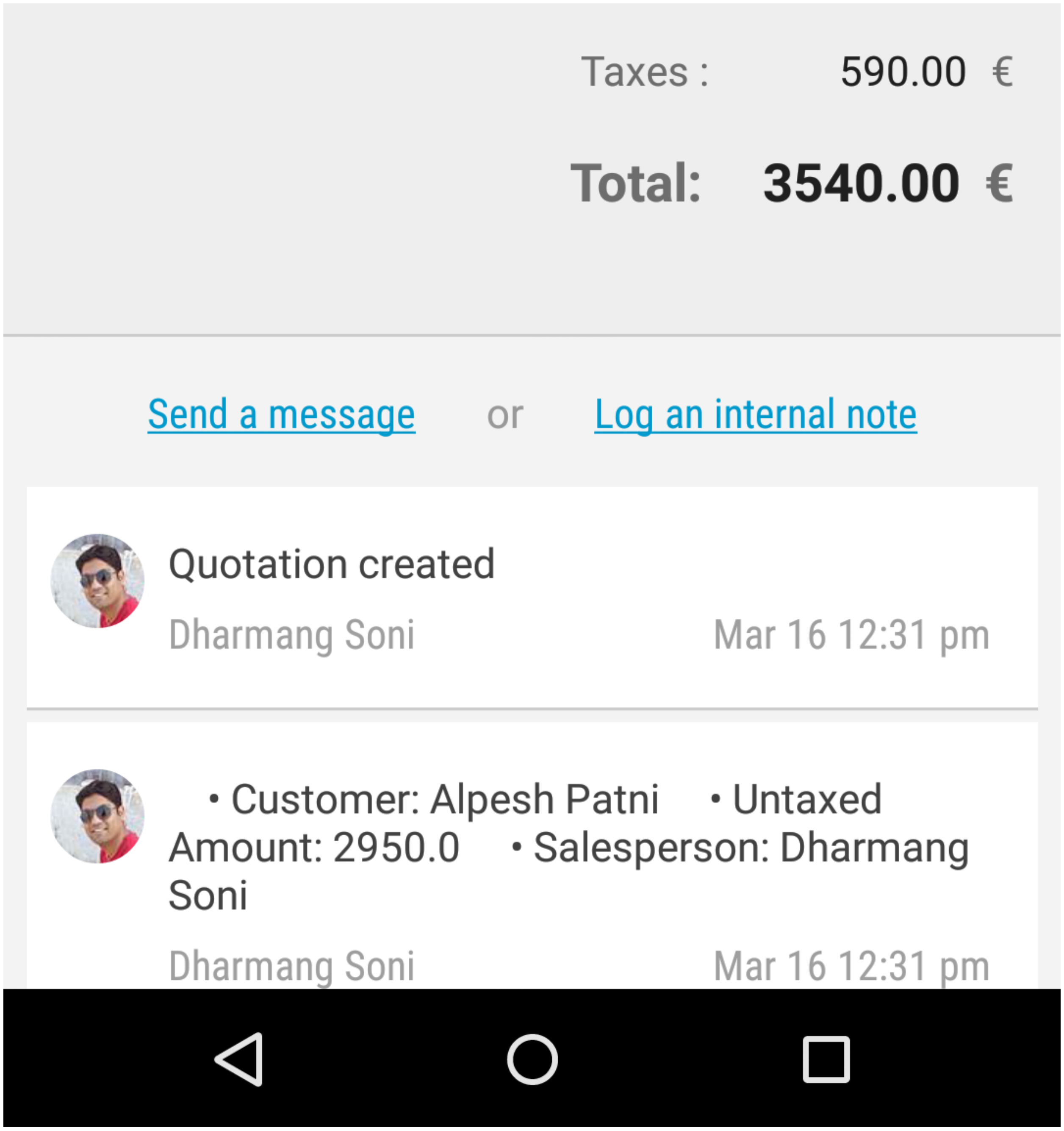
`parent().setHasActionBarSpinner(true);`

```
...
...

@Override
public void onViewCreated(View view, Bundle savedInstanceState) {
    super.onViewCreated(view, savedInstanceState);
    mView = view;
    parent().setHasActionBarSpinner(true);
}

...
...
```

When you call this method, OdooActivity activate spinner for your fragment and returns `Spinner` object by calling `parent().getActionBarSpinner();` method after activating spinner for actionbar.

Now, you can easily manage your spinner with adding items by adapter and custom view.

Chatter view



Quotation created
Dharmang Soni Mar 16 12:31 pm

• Customer: Alpesh Patni • Untaxed Amount: 2950.0 • Salesperson: Dharmang Soni
Dharmang Soni Mar 16 12:31 pm

Full history on your record. OForm control integrated with Mail chatter for your record. You just need to activate chatter for your model and OForm will take care for loading chatter view for your record.

Supported features:

- Log internal note with attachments

- Send message to followers with attachments

Two way to enable chatter for your model:

Enable from model Call method `setHasMailChatter()` in model's constructor.

```
public class ResPartner extends OModel {
    ...
    ...

    public ResPartner(Context context, OUser user){
            super(context, "res.partner", user);

            setHasMailChatter(true);
    }
}
```

It will add chatter view for synced record in `OForm` automatically.

Enable at runtime OForm widget contains method to handle chatter view at runtime even if you have specified it in model. By calling `loadChatter()` before `initForm()`

```
OForm form = (OForm) view.findViewById(R.id.myForm);
form.loadChatter(false);
form.initForm(record);
```

1.4 Contributing

If you would like to contribute code you can do so through GitHub by forking the repository and sending a pull request.

When submitting code, please make every effort to follow existing conventions and style in order to keep the code as readable as possible.

CHAPTER 2

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