

BUS USER SUPPORT SYSTEM

DETAIL DESIGN DOCUMENT

Class Design

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SIGNATURE PAGE

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# Introduction

## Purpose

Bus user support system class design document contains descriptions of all classes of the Bus user support system. It includes:

* Class diagrams that describe the static relation of all classes in the system.

## Definitions, Acronyms and Abbreviations

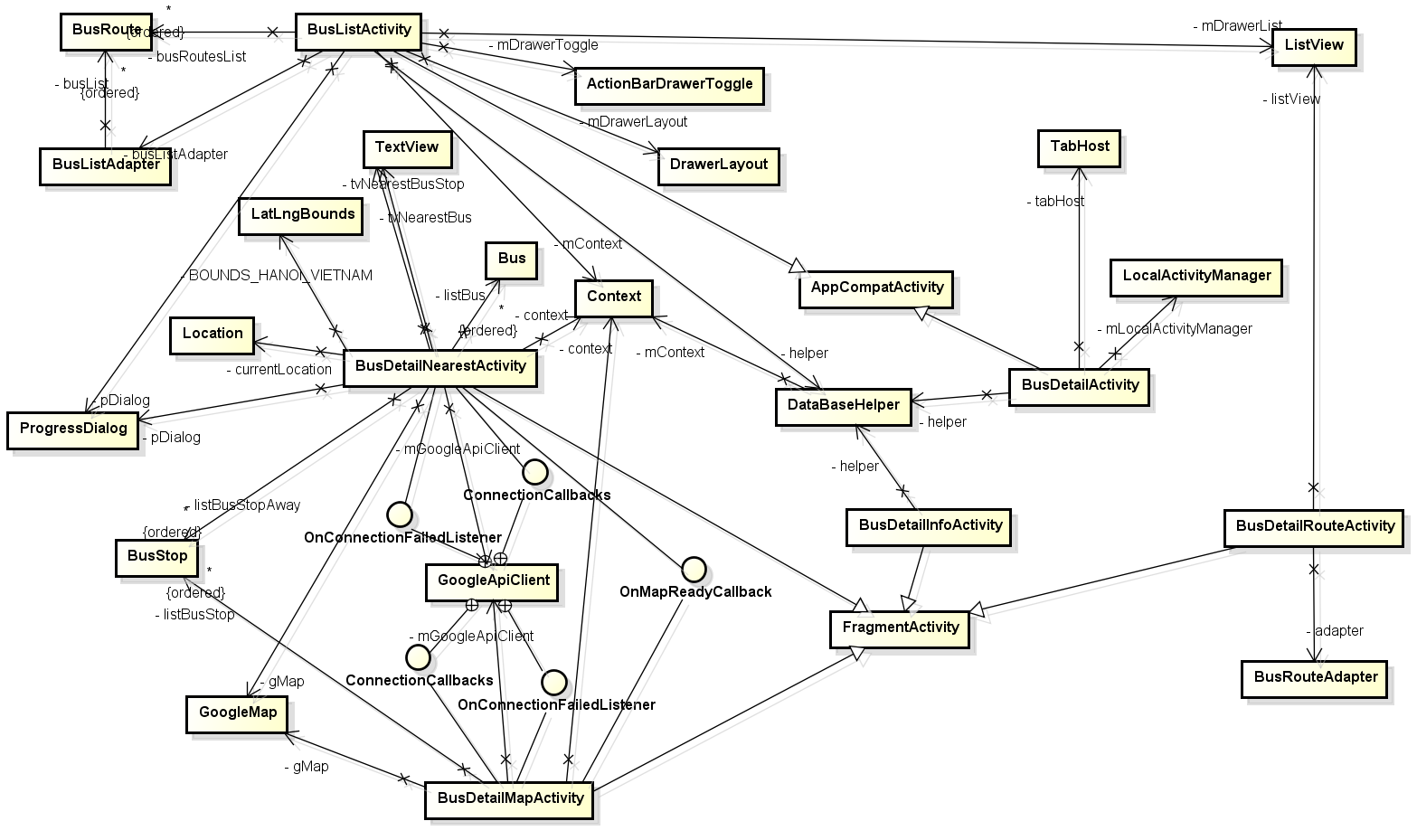
|  |  |  |
| --- | --- | --- |
| Abbreviations | Description | Comment |
| BUSS | Bus User Support System |  |

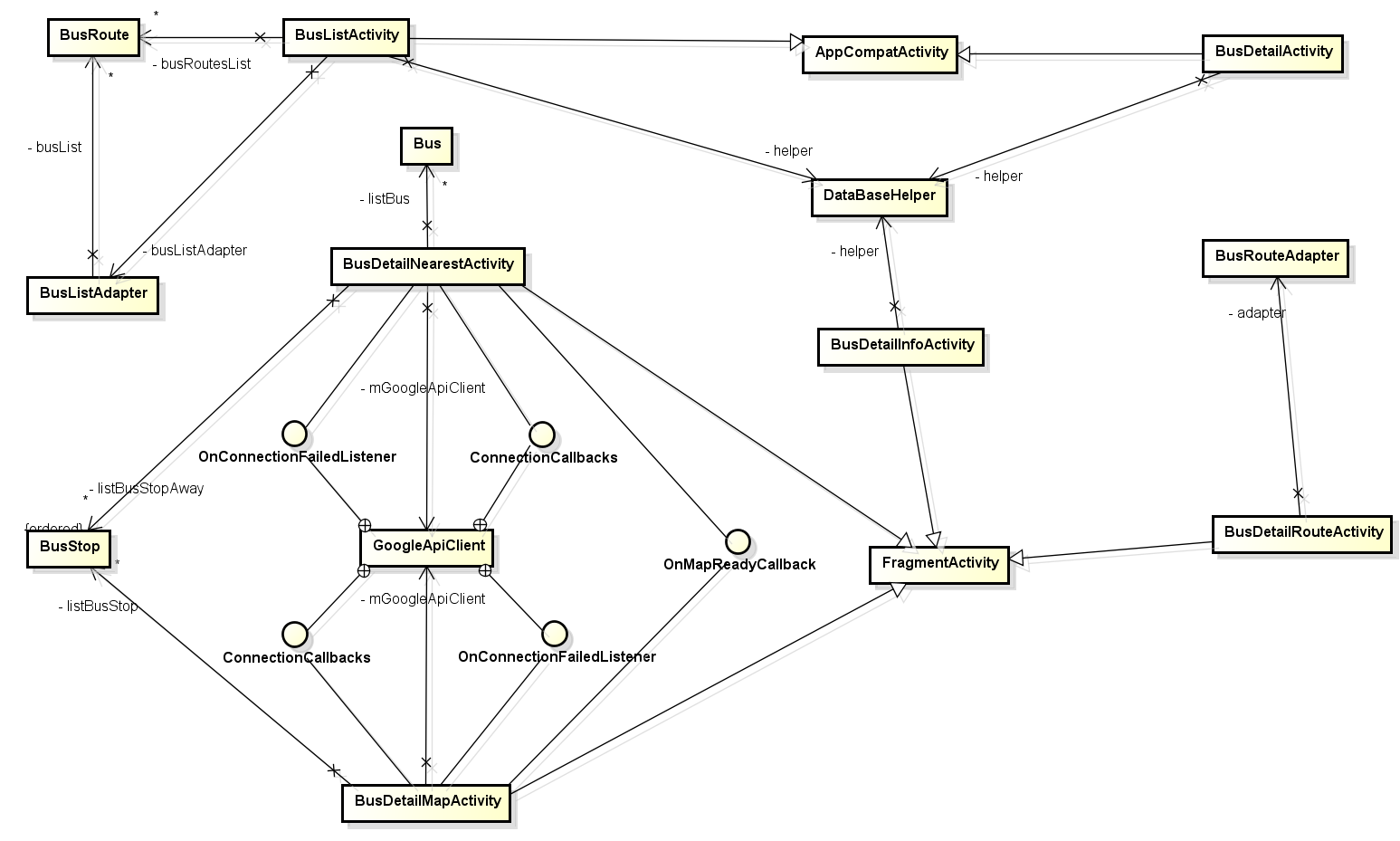
# Packages

|  |  |  |  |
| --- | --- | --- | --- |
| No | Package | Language | Description |
| 1. 01 | activity | Java | Store all activities |
|  | adapter | Java | Store all adapters for activities |
|  | common | Java | Store all common class/object |
|  | dao | Java | Store all class which provide access to data |
|  | wsclient | Java | Store all class which work with web service |
|  | libs | Java | Store all libraries |
|  | res | XML | Store all resources (layout files, images, strings, values, colors, menu….) |

## Activity Package

### Class diagram

****

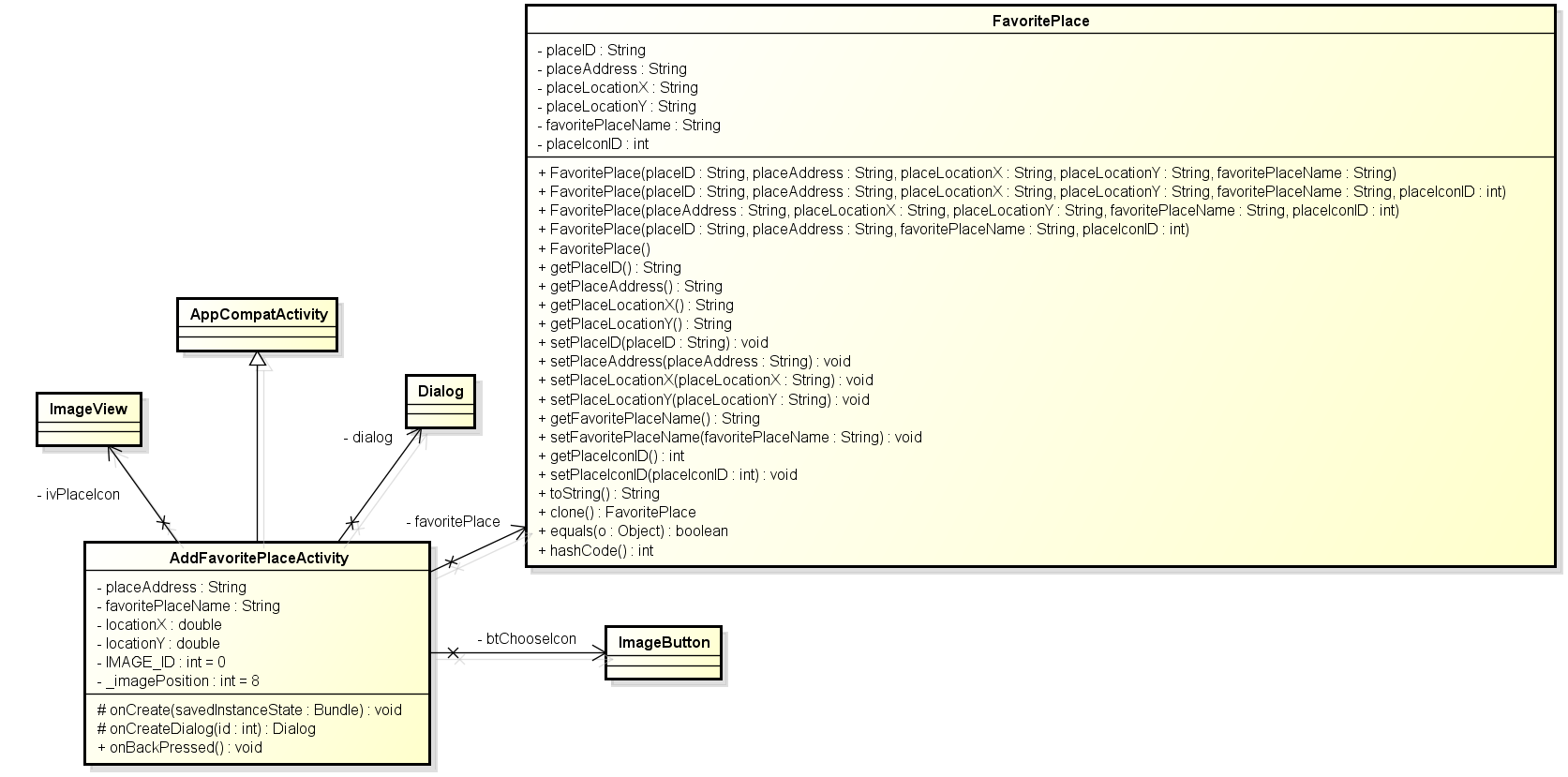
****

**Figure 1: Class diagram activity package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | AddFavoritePlaceActivity | Provide activity add favorite place |
| 2 | AddReminderActivity | Provide activity add reminder |
| 3 | BusDetailActivity | Provide activity bus detail |
| 4 | BusDetailInfoActivity | Provide activity bus detail tab info |
| 5 | BusDetailMapActivity | Provide activity bus detail tab map |
| 6 | BusDetailNearestActivity | Provide activity bus detail tab nearest |
| 7 | BusDetailRouteActivity | Provide activity bus detail tab route |
| 8 | BusListActivity | Provide activity bus list |
| 9 | BusNearMeActivity | Provide activity bus near me |
| 10 | DirectionActivity | Provide activity direction – navigation |
| 11 | EditFavoritePlaceActivity | Provide activity edit favorite place |
| 12 | FavoritesActivity | Provide activity favorites |
| 13 | FavoriteBusesActivity | Provide activity favorite tab bus |
| 14 | FavoritePlacesActivity | Provide activity favorite tab place |
| 15 | FindPathActivity | Provide activity find path |
| 16 | FindPathFavoriteActivity | Provide activity find path tab favorite |
| 17 | FindPathHistoryActivity | Provide activity find path tab history |
| 18 | FindPathMapActivity | Provide activity find path tab map |
| 19 | FindPlaceActivity | Provide activity find place |
| 20 | LoginActivity | Provide activity login |
| 21 | PathDetailByListActivity | Provide activity path detail by list |
| 22 | PathDetailByMapActivity | Provide activity path detail by map |
| 23 | PathFoundActivity | Provide activity path found |
| 24 | SettingsActivity | Provide activity settings |
| 25 | SignUpActivity | Provide activity sign up |
| 26 | TrackActivity | Provide activity track |

### 

### AddFavoritePlaceActivity class



#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1. 1 | \_imagePosition | Int | 8 | private |  |
| 1. 2 | actionMode | ActionMode |  | Private |  |
| 1. 3 | btChooseIcon | ImageButton |  | Private |  |
|  | callback | ActionMode.CallBack |  | Private |  |
|  | dialog | Dialog |  | Private |  |
|  | favoritePlace | FavoritePlace |  | Private |  |
|  | favoritePlaceName | String |  | Private |  |
|  | IMAGE\_ID | Int | 0 | Private |  |
|  | ivPlaceIcon | ImageView |  | Private |  |
|  | locationX | Double |  | Private |  |
|  | location | Double |  | Private |  |
|  | placeAddress | String |  | Private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | onBackPressed() | Handle onBackPressed event |
|  | onCreate(Bundle) | Called when activity create |
|  | onCreateDialog(int) | Called when create dialog |

**onCreate**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Parameter name | Type | I/O | Default | Description |
| 1 | savedInstanceState | Bundle | In |  |  |

**onCreateDialog**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Parameter name | Type | I/O | Default | Description |
| 1 | Id | int | In |  |  |
| 2 | Dialog | Dialog | Out |  |  |

### AddReminderActivity class

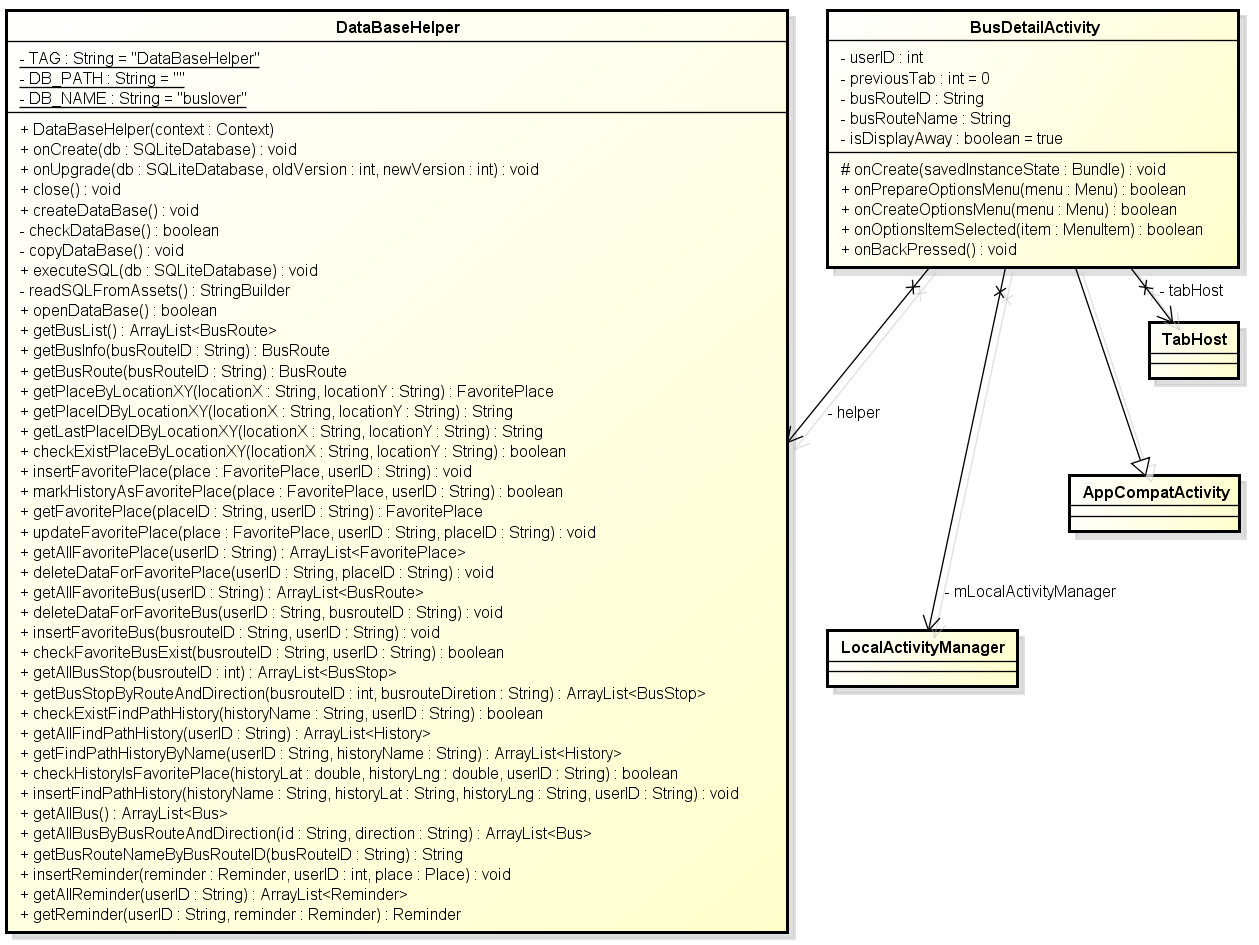
#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | departure | TextView |  | Private |  |
| 2 | DEPARTURE\_DIALOG\_ID | int | 2 | Private |  |
| 3 | direction | TextView |  | Private |  |
| 4 | distance | TextView |  | Private |  |
| 5 | DISTANCE\_DIALOG\_ID | Int | 4 | Private |  |
| 6 | favoritePlaceList | ArrayList<FavoritePlace> |  | Private |  |
| 7 | hour | Int |  | Private |  |
| 8 | Min | Int |  | Private |  |
| 9 | mRedToolTipView | ToolTipView |  | Private |  |
| 10 | mToolTipFrameLayout | ToolTipRelativeLayout |  | Private |  |
| 11 | mYellowToolTipView | ToolTipView |  | Private |  |
| 12 | recurrence | TextView |  | Private |  |
| 13 |  |  |  | Private |  |
| 14 |  |  |  | Private |  |
| 15 |  |  |  | Private |  |
| 16 |  |  |  | Private |  |
| 17 |  |  |  | Private |  |
| 18 |  |  |  | Private |  |
| 19 |  |  |  | Private |  |
| 20 |  |  |  | Private |  |
|  |  |  |  | Private |  |
|  |  |  |  | Private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | changeAccountInfo() | Interact with model to change account info in database |
|  | forgotPassword() | Interact with model to get password from database and send to user’s email |
|  | logIn() | Interact with model to check if user input validated data to log in or not and let them log in. |
|  | logOut() | Log user out of the application |
|  | signUp() | Interact with model to create new user in database and let user sign up. |

### BusDetailActivity



#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | userID | int |  | private |  |
| 2 | previousTab | int | 0 | private |  |
| 3 | busRouteID | String |  | private |  |
| 4 | busRouteName | String |  | private |  |
| 5 | isDisplayAway | boolean | true | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | onCreate() | Called when activity create |
| 2 | onPrepareOptionsMenu() | Called when prepare option menu |
| 3 | onCreateOptionsMenu () | Called when create option menu |
| 4 | onOptionsItemSelected() | Called when option menu is selected |
| 5 | onBackPressed() | Called when back button is pressed |

**onCreate**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Parameter name | Type | I/O | Default | Description |
| 1 | savedInstanceState | Bundle | In |  |  |

**onPrepareOptionsMenu**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Parameter name | Type | I/O | Default | Description |
| 1 |  | Boolean | Out |  |  |
| 2 | menu | Menu | In |  |  |

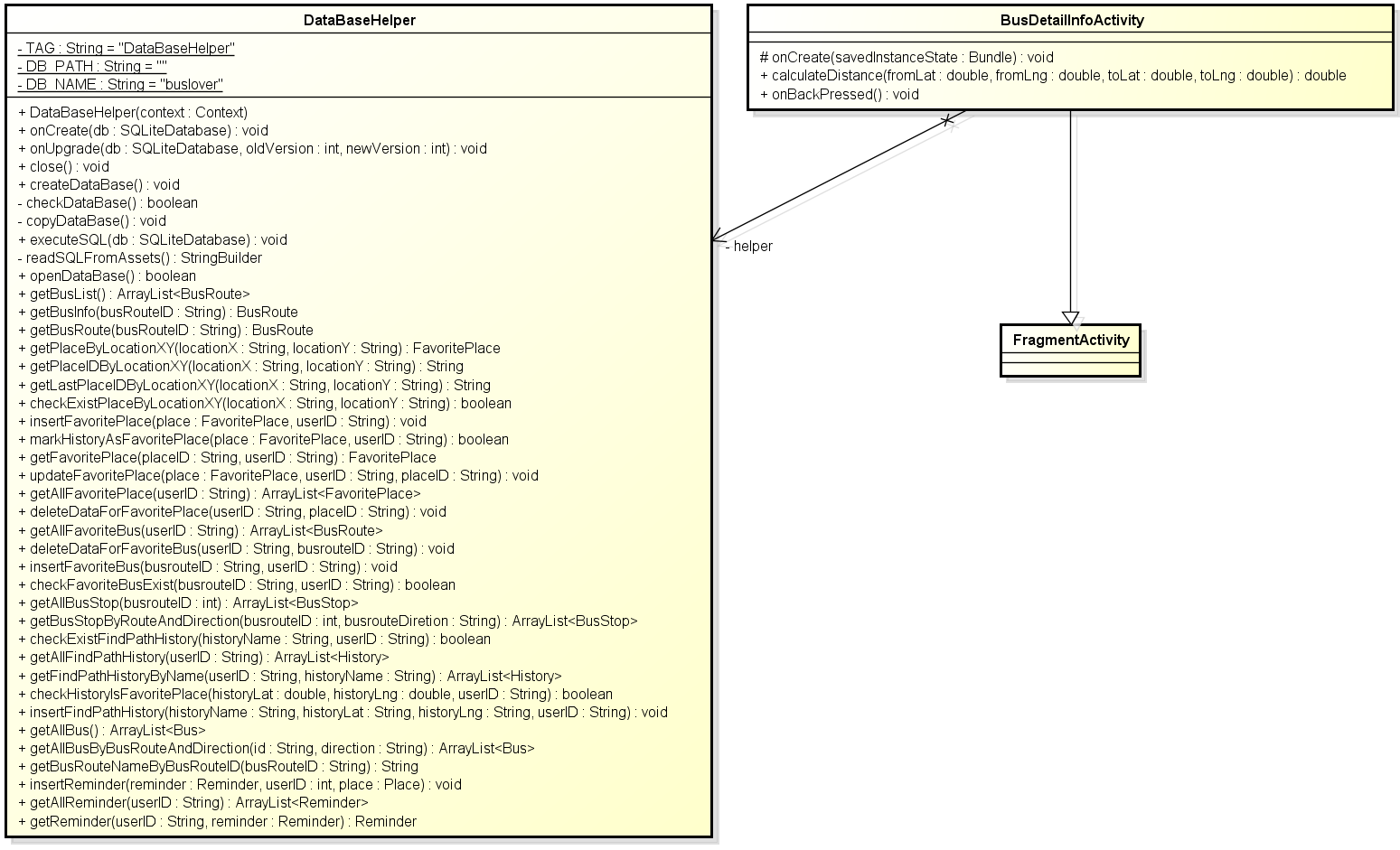
**onCreateOptionsMenu**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Parameter name | Type | I/O | Default | Description |
| 1 |  | Boolean | Out |  |  |
| 2 | menu | Menu | In |  |  |

**onOptionsItemSelected**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Parameter name | Type | I/O | Default | Description |
| 1 |  | Boolean | Out |  |  |
| 2 | item | MenuItem | In |  |  |

### BusDetailInfoActivity



#### Attributes

N/A

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | onCreate() | Called when activity create |
| 2 | calculateDistance() | Call to calculate distance between two LatLng point |
| 3 | onBackPressed() | Called when back button is pressed |

|  |  |  |  |
| --- | --- | --- | --- |
|  | | | |
| * **Return:** * **Visibility:** * **Purpose:** | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| onCreate() | | | |
| * **Return:** void * **Visibility:** protected * **Purpose:** create activity | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

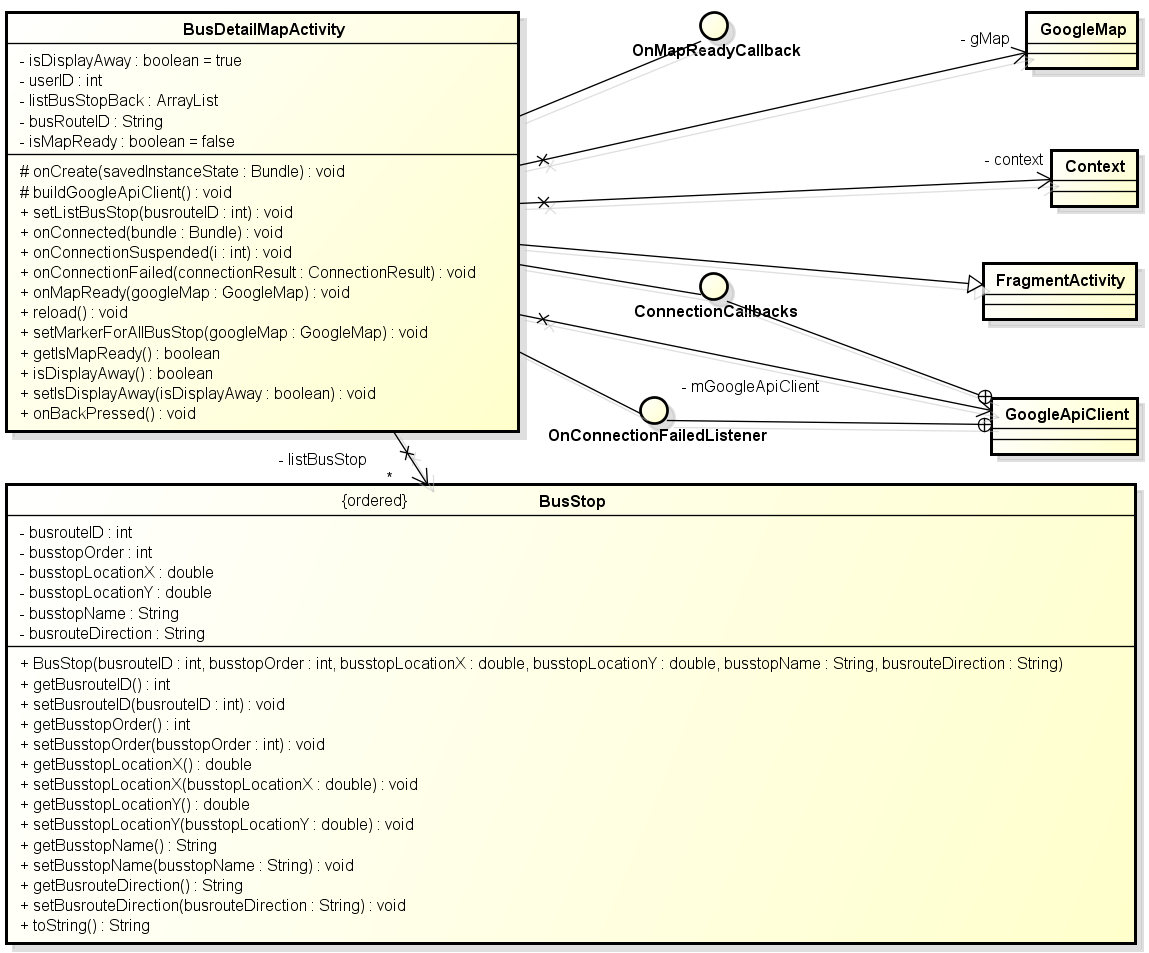
|  |  |  |  |
| --- | --- | --- | --- |
| 1 | saveInstanceState | Bundle |  |

|  |  |  |  |
| --- | --- | --- | --- |
| calculateDistance() | | | |
| * **Return:** double * **Visibility:** public * **Purpose:** calculate distance between two latlng | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | fromLat | Double | From point’s latitude |
| 2 | toLat | Double | From point’s longitude |
| 3 | fromLng | Double | To point’s latitude |
| 4 | toLng | Double | To point’s longitude |

|  |
| --- |
| onBackPressed() |
| * **Return:** void * **Visibility:** public * **Purpose:** handle when back button is pressed |

### BusDetailMapActivity



#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | isDisplayAway | boolean | True | private |  |
| 2 | userID | int | 0 | private |  |
| 3 | listBusStopBack | ArrayList<BusStop> |  | private |  |
| 4 | busRouteID | String |  | private |  |
| 5 | isMapReady | boolean | false | private |  |

#### Methods

|  |
| --- |
| buildGoogleApiClient() |
| * **Return:** void * **Visibility:** protected * **Purpose:** build api client |
| Parameters |

|  |  |  |  |
| --- | --- | --- | --- |
| onCreate() | | | |
| * **Return:** void * **Visibility:** protected * **Purpose:** create activity | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | saveInstanceState | Bundle |  |

|  |  |  |  |
| --- | --- | --- | --- |
| setListBusStop() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** set list bus stop | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | busrouteID | Int | Bus route id |

|  |
| --- |
| onBackPressed() |
| * **Return:** void * **Visibility:** public * **Purpose:** handle when back button is pressed |

|  |
| --- |
| onConnected() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when connected |

|  |  |  |  |
| --- | --- | --- | --- |
| onConnectionSuspended() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** called when connection suspended | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | i | Int |  |

|  |  |  |  |
| --- | --- | --- | --- |
| onConnectionFailed() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** called when connect failed | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | connectionResult | ConnectionResult | Bus route id |

|  |
| --- |
| onMapReady() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when map ready |

|  |
| --- |
| reload() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when activity reload |

|  |  |  |  |
| --- | --- | --- | --- |
| setMarkerForAllBusStop() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** called when app content reconnect | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | busrouteID | Int | Bus route id |
| 2 | googleMap | GoogleMap | Map to handle things |

|  |
| --- |
| getIsMapReady() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when app content reconnect |

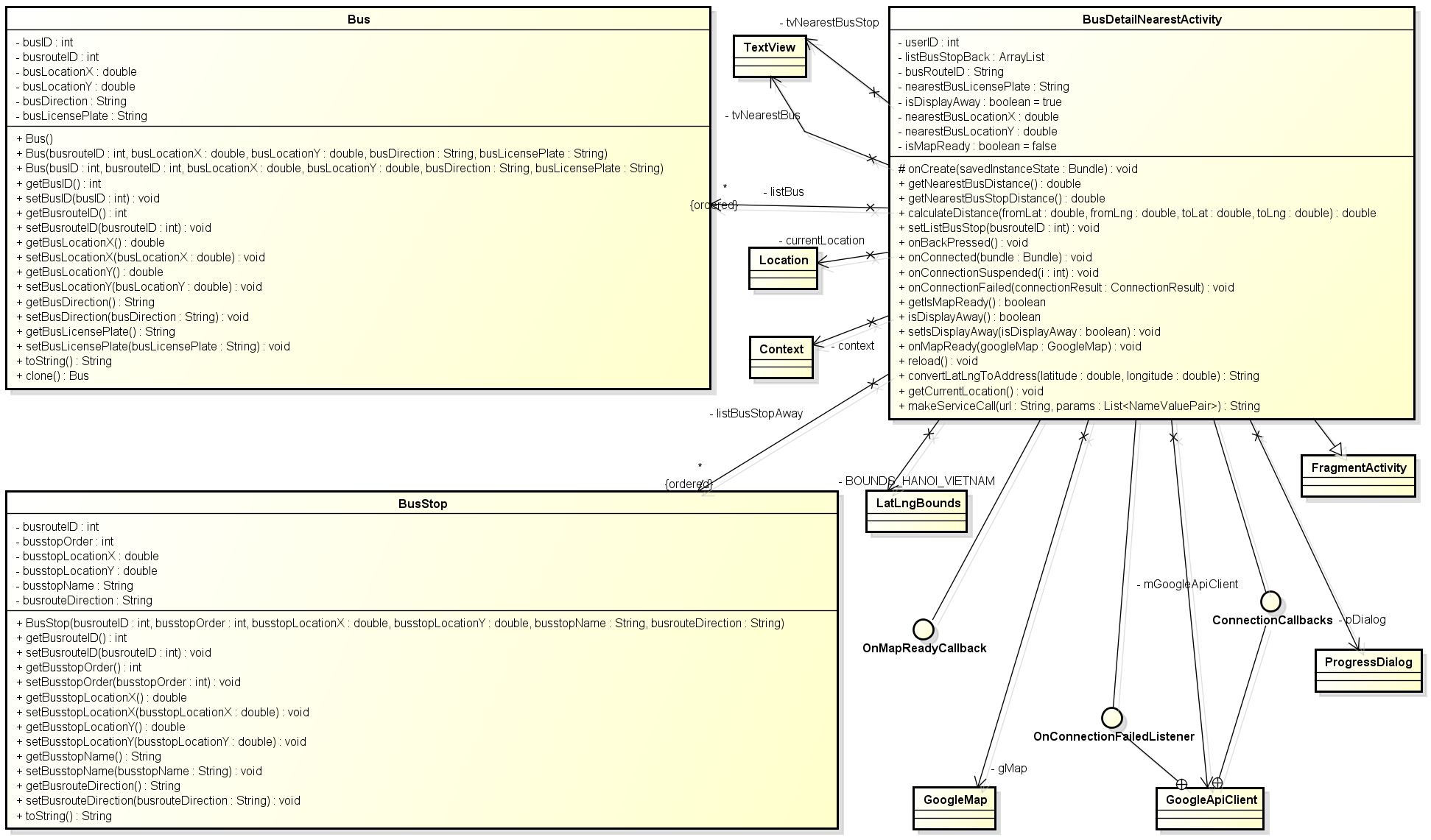
|  |
| --- |
| isDisplayAway() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when app content reconnect |

|  |  |  |  |
| --- | --- | --- | --- |
| setIsDisplayAway() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** called when app content reconnect | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | isDisplayAway | Int | Parameter indicate is display away or not |

|  |
| --- |
| onBackPressed() |
| * **Return:** void * **Visibility:** public * **Purpose:** handle when back button is pressed |

### BusDetailNearestActivity



#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | isDisplayAway | boolean | True | private |  |
| 2 | nearestBusLicensePlate | String |  | private |  |
| 3 | listBusStopBack | ArrayList<BusStop> |  | private |  |
| 4 | busRouteID | String |  | private |  |
| 5 | isMapReady | boolean | false | private |  |
| 6 | nearestBusLocationX | Double |  | private |  |
| 7 | nearestBusLocationY | double |  | private |  |
| 8 | userID | Int | 0 | private |  |

#### Methods

|  |
| --- |
| getNearestBusDistance() |
| * **Return:** double * **Visibility:** public * **Purpose:** get nearest bus distance |
| Parameters |

|  |
| --- |
| getNearestBusStopDistance() |
| * **Return:** double * **Visibility:** public * **Purpose:** get nearest bus stop distance |
| Parameters |

|  |  |  |  |
| --- | --- | --- | --- |
| setListBusStop() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** set list bus stop | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | busrouteID | Int | Bus route id |

|  |  |  |  |
| --- | --- | --- | --- |
| calculateDistance() | | | |
| * **Return:** double * **Visibility:** public * **Purpose:** calculate distance between two latlng | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | fromLat | Double | From point’s latitude |
| 2 | toLat | Double | From point’s longitude |
| 3 | fromLng | Double | To point’s latitude |
| 4 | toLng | Double | To point’s longitude |

|  |
| --- |
| reload() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when activity reload |

|  |  |  |  |
| --- | --- | --- | --- |
| onCreate() | | | |
| * **Return:** void * **Visibility:** protected * **Purpose:** create activity | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | saveInstanceState | Bundle |  |

|  |
| --- |
| onConnected() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when connected |

|  |  |  |  |
| --- | --- | --- | --- |
| onConnectionSuspended() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** called when connection suspended | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | i | Int |  |

|  |  |  |  |
| --- | --- | --- | --- |
| onConnectionFailed() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** called when connect failed | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | connectionResult | ConnectionResult | Bus route id |

|  |
| --- |
| onMapReady() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when map ready |

|  |
| --- |
| getIsMapReady() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when app content reconnect |

|  |
| --- |
| isDisplayAway() |
| * **Return:** void * **Visibility:** public * **Purpose:** called when app content reconnect |

|  |  |  |  |
| --- | --- | --- | --- |
| setIsDisplayAway() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** called when app content reconnect | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | isDisplayAway | Int | Parameter indicate is display away or not |

|  |
| --- |
| onBackPressed() |
| * **Return:** void * **Visibility:** public * **Purpose:** handle when back button is pressed |

|  |
| --- |
| getCurrentLocation() |
| * **Return:** void * **Visibility:** public * **Purpose:** called to get current location |
| Parameters |

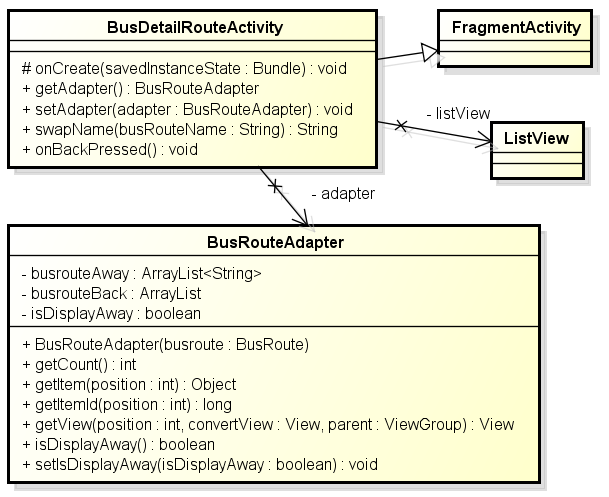
|  |  |  |  |
| --- | --- | --- | --- |
| convertLatLngToAddress() | | | |
| * **Return:** String * **Visibility:** public * **Purpose:** called to convert latlng to address | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Lat | Double |  |
| 2 | Lng | Double |  |

|  |  |  |  |
| --- | --- | --- | --- |
| makeServiceCall() | | | |
| * **Return:** String * **Visibility:** public * **Purpose:** called to convert latlng to address | | | |
| Parameters | | | |
| No. | Parameter | Type | Description |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | url | String |  |
| 2 | params | List<NameValuePair> |  |

### BusDetailRouteActivity



#### Attributes

N/A

#### Methods

|  |  |  |  |
| --- | --- | --- | --- |
| onCreate() | | | |
| * **Return:** void * **Visibility:** protected * **Purpose:** create activity | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | saveInstanceState | Bundle |  |

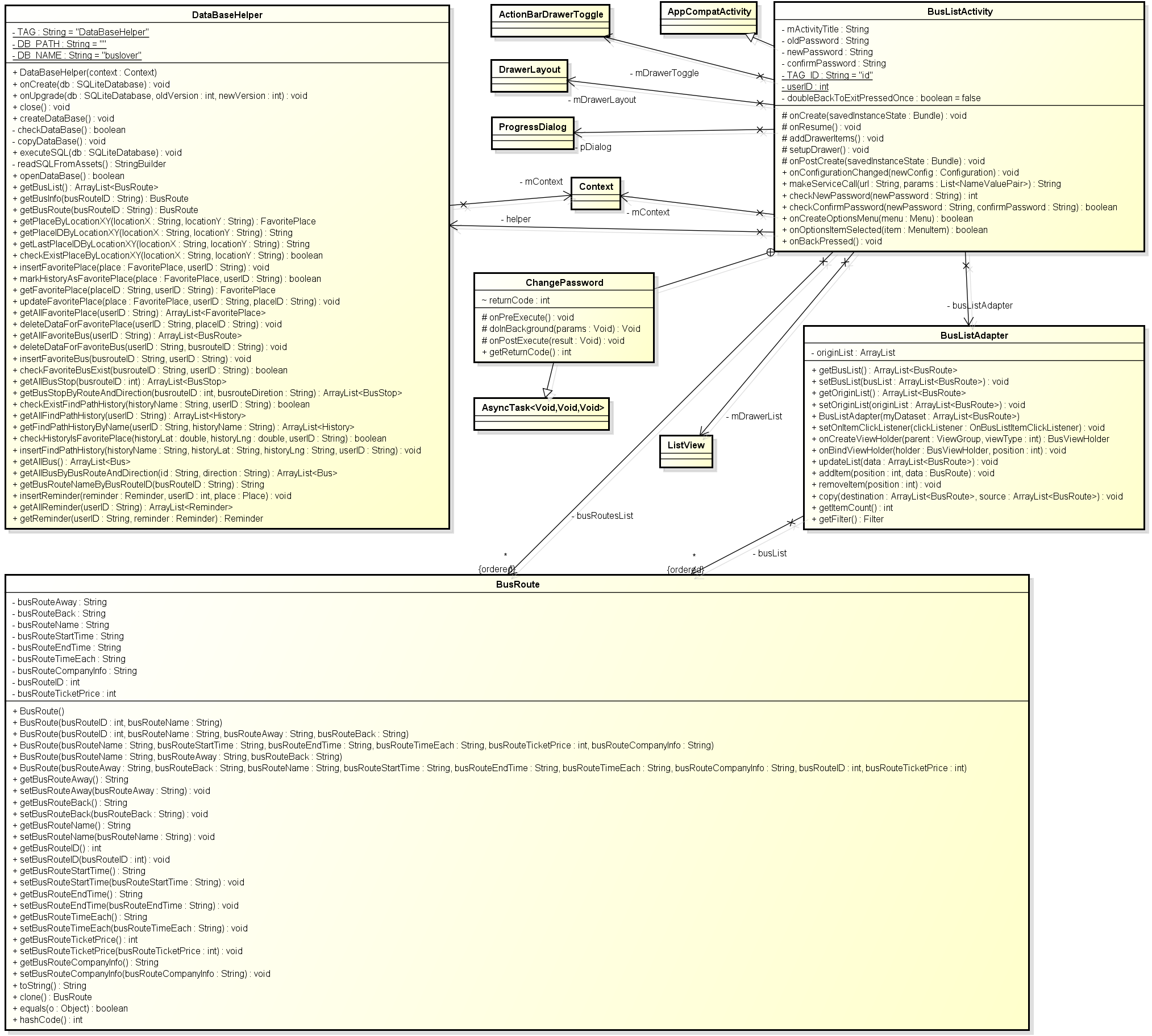
|  |
| --- |
| getAdapter() |
| * **Return:** BusRouteAdapter * **Visibility:** public * **Purpose:** get adapter |

|  |  |  |  |
| --- | --- | --- | --- |
| setAdapter() | | | |
| * **Return:** void * **Visibility:** protected * **Purpose:** set adapter | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | adapter | BusRouteAdapter | Adapter of BusRoute |

|  |  |  |  |
| --- | --- | --- | --- |
| swapName() | | | |
| * **Return:** String * **Visibility:** public * **Purpose:** swap bus direction | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | busRouteName | String | Bus route name |

|  |
| --- |
| onBackPressed() |
| * **Return:** void * **Visibility:** public * **Purpose:** Handle onBackPressed event |

### BusListActivity



#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | mActivityTitle | String |  | private |  |
| 2 | oldPassword | String |  | private |  |
| 3 | newPassword | String |  | private |  |
| 4 | confirmPassword | String |  | private |  |
| 5 | TAG\_ID | String | id | private |  |
| 6 | userID | int |  | private |  |
| 7 | doubleBackToExitPressedOnce | boolean | false | private |  |

#### Methods

|  |  |  |  |
| --- | --- | --- | --- |
| onCreate() | | | |
| * **Return:** void * **Visibility:** protected * **Purpose:** create activity | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | saveInstanceState | Bundle | Save instance state |

|  |
| --- |
| onResume() |
| * **Return:** void * **Visibility:** protected * **Purpose:** call when activity is on resume |

|  |
| --- |
| addDrawerItems() |
| * **Return:** void * **Visibility:** protected * **Purpose:** add drawer item |

|  |
| --- |
| setupDrawer() |
| * **Return:** void * **Visibility:** protected * **Purpose:** setup drawer |

|  |  |  |  |
| --- | --- | --- | --- |
| onPostCreate() | | | |
| * **Return:** void * **Visibility:** protected * **Purpose:** call before starting activity | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | savedInstanceState | Bundle | Save instance state |

|  |  |  |  |
| --- | --- | --- | --- |
| onConfigurationChanged() | | | |
| * **Return:** void * **Visibility:** public * **Purpose:** call when configuration was changed | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | newConfig | Configuration |  |

|  |  |  |  |
| --- | --- | --- | --- |
| makeServiceCall() | | | |
| * **Return:** String * **Visibility:** public * **Purpose:** | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | url | String |  |
| 2 | params | List<NameValuePair> |  |

|  |  |  |  |
| --- | --- | --- | --- |
| checkNewPassword() | | | |
| * **Return:** int * **Visibility:** public * **Purpose:** check new password field | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | newPassword | String |  |

|  |  |  |  |
| --- | --- | --- | --- |
| checkConfirmPassword() | | | |
| * **Return:** boolean * **Visibility:** public * **Purpose:** check confirm password field | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | newPassword | String |  |
| 2 | confirmPassword | String |  |

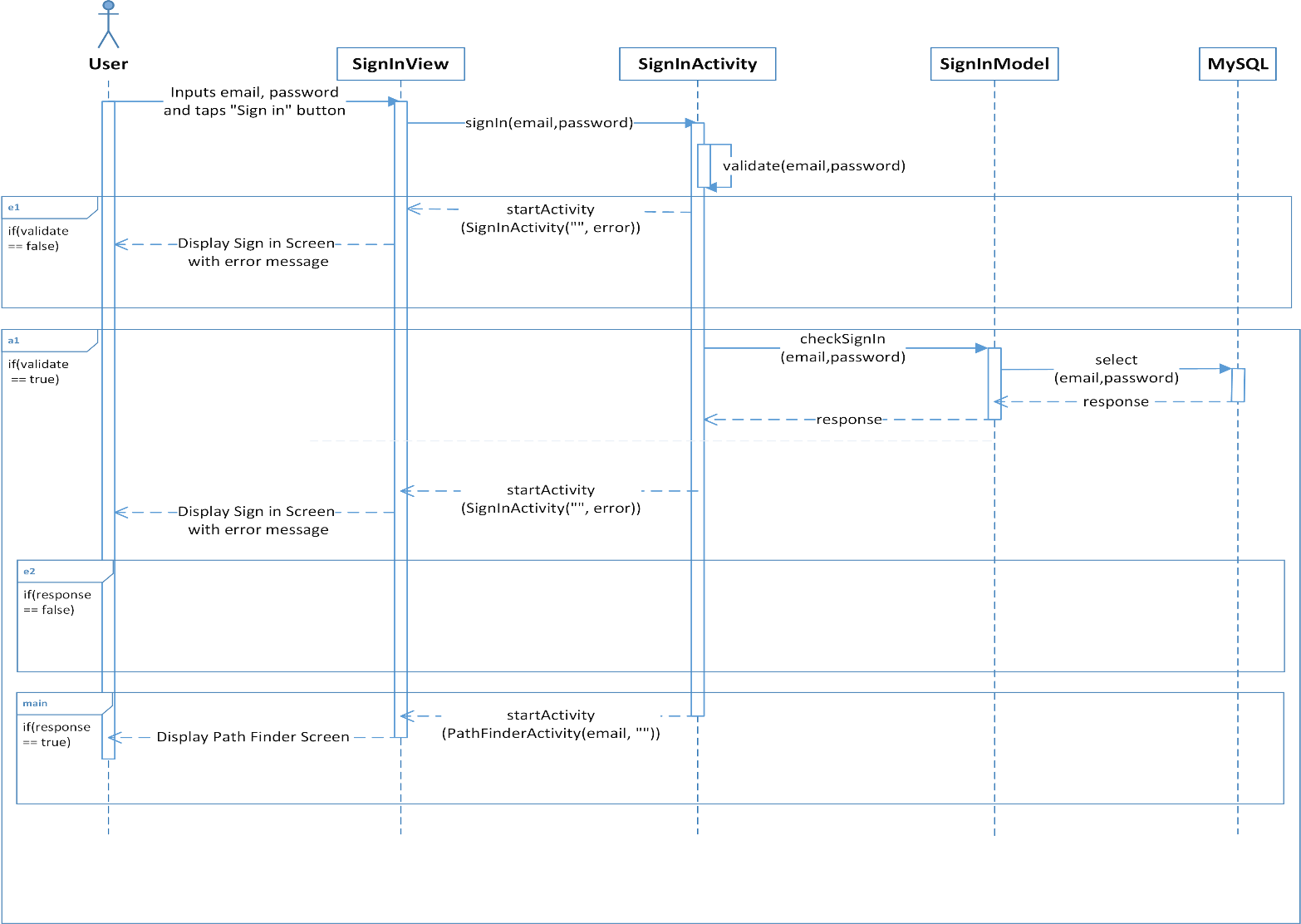
|  |  |  |  |
| --- | --- | --- | --- |
| onCreateOptionsMenu() | | | |
| * **Return:** boolean * **Visibility:** public * **Purpose:** call when create menu | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
| 1 | item | MenuItem |  |

|  |  |  |  |
| --- | --- | --- | --- |
| onOptionsItemSelected() | | | |
| * **Return:** double * **Visibility:** public * **Purpose:** get nearest bus distance | | | |
| Parameters | | | |
| **No.** | **Parameter** | **Type** | **Description** |
|  |  |  |  |

|  |
| --- |
| onBackPressed() |
| * **Return:** void * **Visibility:** public * **Purpose:** Handle onBackPressed event |

### Account management Sequence Diagram

#### UC001\_LogIn



#### UC002\_SignUp

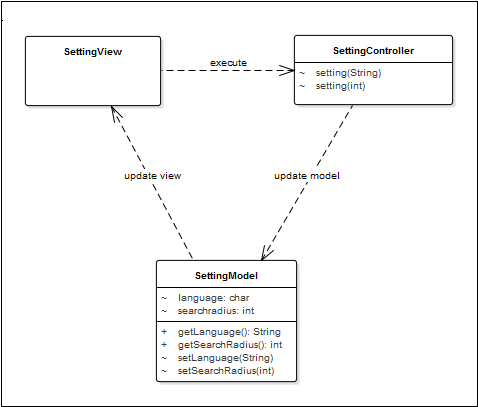
#### UC003\_LogOut

#### UC004\_ForgotPassword

#### UC005\_ChangeAccountInfo

## Common Package

### Class diagram



**Figure 2: Class diagram common package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | SettingModel | Include method interact with database |
| 2 | SettingController | Include method interact with model |

### CommonModel class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | language | String |  | Package |  |
| 2 | searchradius | Number |  | Package |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | getLanguage() | Interact with database: get language info |
|  | getSearchRadius() | Interact with database: get search radius info |
|  | setLanguage() | Interact with database: set language |
|  | setSearchRadius() | Interact with database: set search radius |

### CommonController class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |

#### Methods

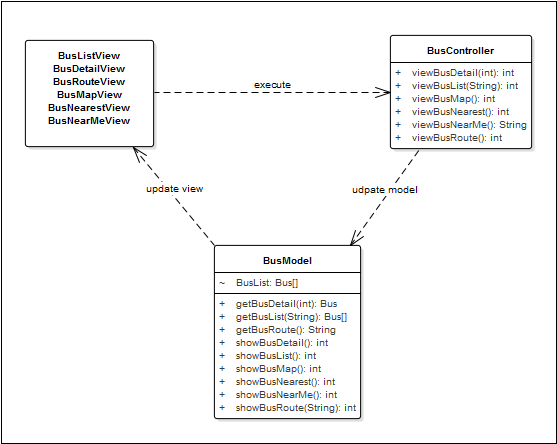
|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | setting(String) | Set language |
|  | setting(int) | Set search radius |

### Sequence Diagram

#### UC006\_Change app setting

## Bus Package

### Class diagram



**Figure 3: Class diagram Contact package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | BusModel | Include method interact with database |
| 2 | BusController | Include method interact with model |

### BusModel class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | busList | Bus[] |  | package |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | getBusList() | Interact with database: get bus list |
|  | getBusDetail() | Interact with database: get bus detail |
|  | getBusRoute() | Interact with database: get bus route |
|  | showBusDetail() | Notify change to view – show bus detail |
|  | showBusRoute() | Notify change to view – show bus route |
|  | showBusMap() | Notify change to view – show bus map |
|  | showBusNearest() | Notify change to view – show bus nearest |
|  | showBusNearMe() | Notify change to view – show bus near me |

### BusController class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | viewBusList() | View bus list |
|  | viewBusDetail() | View bus detail |
|  | viewBusRoute() | View bus route |
|  | viewBusMap() | View bus map |
|  | viewBusNearest() | View bus nearest |
|  | viewBusNearMe() | View bus near me |

### Sequence diagram

#### UC0007\_View bus list

#### UC0008\_Search bus in list

#### UC0009\_View bus info

#### UC0010\_View bus route

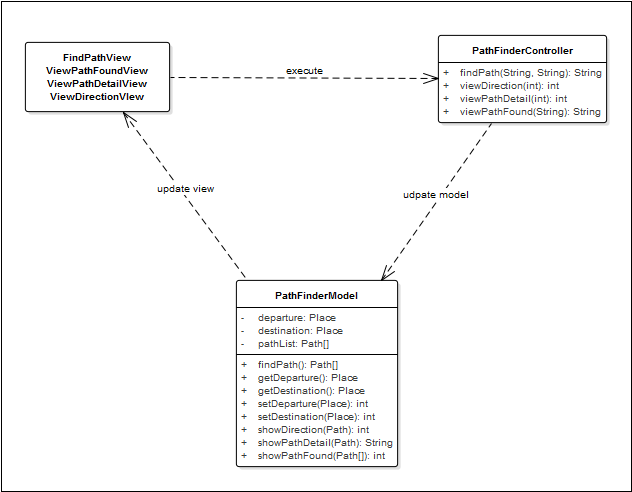
#### UC0011\_View bus map

#### UC0012\_View bus nearest

#### UC0013\_View bus near me

## Path Finder Package

### Class diagram



***Figure 4: Class diagram Path finder package***

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | PathFinderModel | Include method interact with database |
| 5 | PahtFinderController | Include method interact with models |

### PathFinderModel class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1. 1 | departure | Place |  | private |  |
| 1. 2 | destination | Place |  | private |  |
| 1. 3 | pathList | Path[] |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | findPath() | Find path |
|  | getDeparture() | Get departure |
|  | getDestination() | Get destination |
|  | setDeparture() | Set departure |
|  | setDestination() | Set destination |
|  | showPathFound() | Show path found |
|  | showPathDetail() | Show path detail |
|  | showDirection() | Show direction |

### PathFinderController class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | findPath() | Find path |
| 2 | viewPathFound() | View path found |
| 3 | viewPathDetail() | View path detail |
| 4 | viewDirection() | View direction |

### Sequence Diagram

#### UC0014\_Find path

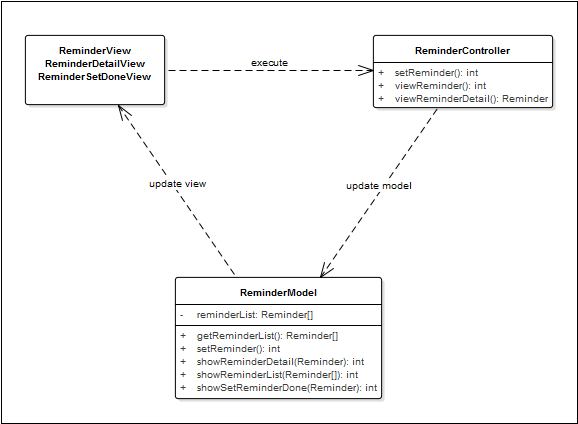
#### UC0015\_View path found

#### UC0016\_View path detail

#### UC0017\_View direction

## Reminder Package

### Class diagram



**Figure 5: Class diagram Reminder package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | ReminderModel | Include method interact with database |
| 2 | ReminderController | Include method interact with model |

### ReminderModel class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | reminderList | Reminder[] |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | getReminderList() | Interact with database: get reminder list |
|  | setReminder() | Interact with database: set a reminder (add/edit/delete/suspend) |
|  | showReminderList() | Notify change to view – show reminder list |
|  | showReminderDetail() | Notify change to view – show reminder detail |
|  | showReminderSetDone() | Notify change to view – show reminder set done |

### ReminderController class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | setReminder() | Set a reminder (add/edit/delete/suspend) |
|  | viewReminder() | View reminder list |
|  | viewReminderDetail() | View reminder detail |

### Sequence Diagram

#### UC0018\_View bus reminder

#### UC0019\_Add reminder

#### UC0020\_Edit reminder

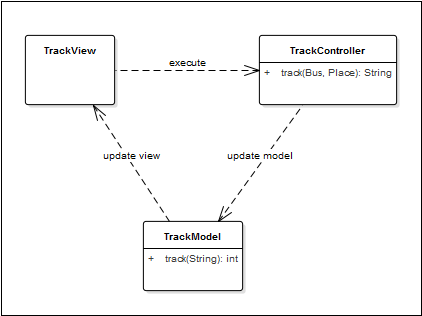
#### UC0021\_Delete reminder

#### UC0022\_ Suspend/Unsuspend all reminder

#### UC0023\_ Suspend/Unsuspend a chosen reminder

## Track Package

### Class diagram



**Figure 6: Class diagram Management member package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | TrackModel | Include method interact with database |
| 2 | TrackController | Include method interact with model |

### TrackModel class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | track() | Interact with database: set track and track bus(es) |

### TrackController class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | track() | Track bus(es) |

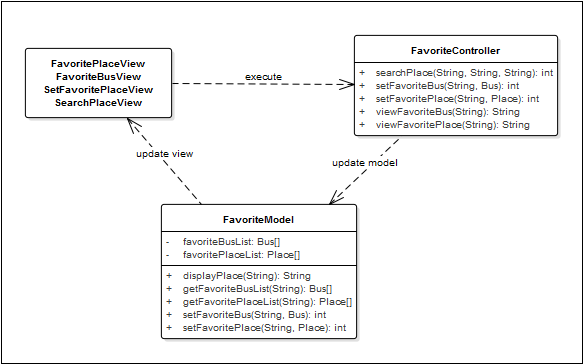
### Sequence Diagram

#### UC0024\_SetTrack

#### UC0025\_CancelTrack

## Favorite Package

### Class diagram



**Figure 7: Class diagram Favorite package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | FavoriteModel | Include method interact with database |
| 2 | FavoriteController | Include method interact with model |

### FavoriteModel class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | favoriteBusList | Bus[] |  | private |  |
| 2 | favoritePlaceList | Place[] |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | displayPlace() | Notify change to view – display found place |
| 2 | getFavoriteBus() | Interact with database: get favorite bus |
| 3 | getFavoritePlac() | Interact with database: get favorite place |
| 4 | setFavoriteBus() | Interact with database: set favorite bus |
| 5 | setFavoritePlace() | Interact with database: set favorite place |

### FavoriteController class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
|  | searchPlace() | Search place |
|  | viewFavoriteBus() | View favorite bus |
|  | viewFavoritePlac() | Get favorite place |
|  | setFavoriteBus() | Set favorite bus |
|  | setFavoritePlace() | Set favorite place |

### Sequence Diagram

#### UC0026\_View favorite place

#### UC0027\_ Add favorite place

#### UC0028\_ Edit favorite place

#### UC0029\_ Delete favorite place

#### UC0030\_Search favorite place

#### UC0031\_View favorite bus

#### UC0032\_Add favorite bus

#### UC0033\_Delete favorite bus

#### UC0033\_ Search favorite bus

# MVC model



***Figure 6: MVC Model***