Widget concept

Common principles

Registration

Widget concept allow to create user interface independently from the **API** calls due `KitWdgetManager` registration.

Code 1: *Example of the widget registration* in the Application singleton

```
/**
 * Method which provide the registering of the widgets for the current {@link Application}
 */
@Override
protected void registerWidgets() {
 //Register the message with type - text
 KitWidgetManager.register(new KitCreatorMessageText());
 //Register the message with type - location
 KitWidgetManager.register(new KitCreatorMessageLocation());
 //Register the message with type - photo
 KitWidgetManager.register(new KitCreatorMessagePhoto());
}
```

View representations

Widget object contain of the 3 types of the view representations:

- `Create` widget view;
- `Details` widget view;
- `List` widget view.

`Create` and `Details` widget view can be `@Nullable`, `List` can't be `@Nullable`. If developer isn't implement the `List` representation in this case `KitWidgetManager` return the object for unsupported widget.

Image 1: *List representation of the Widget*

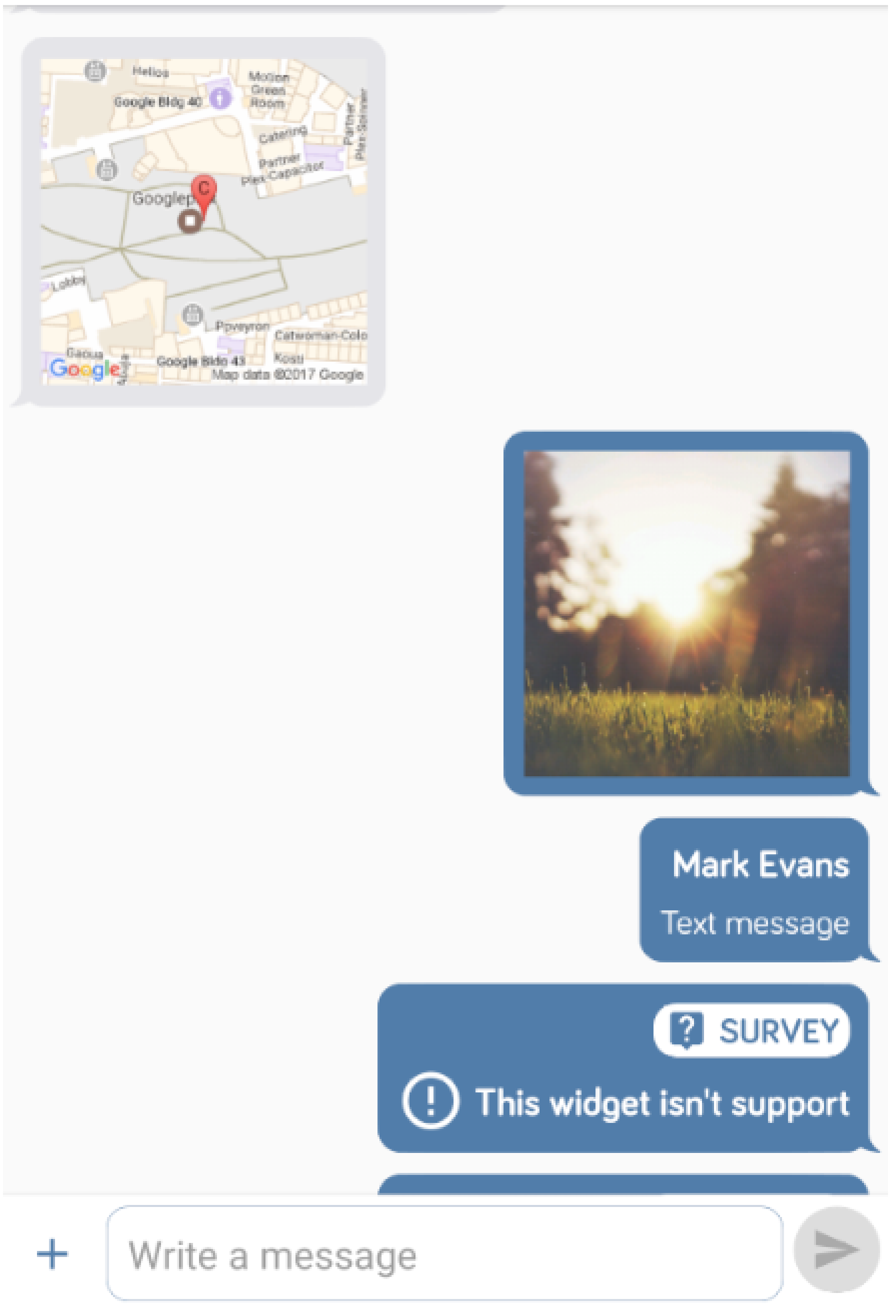
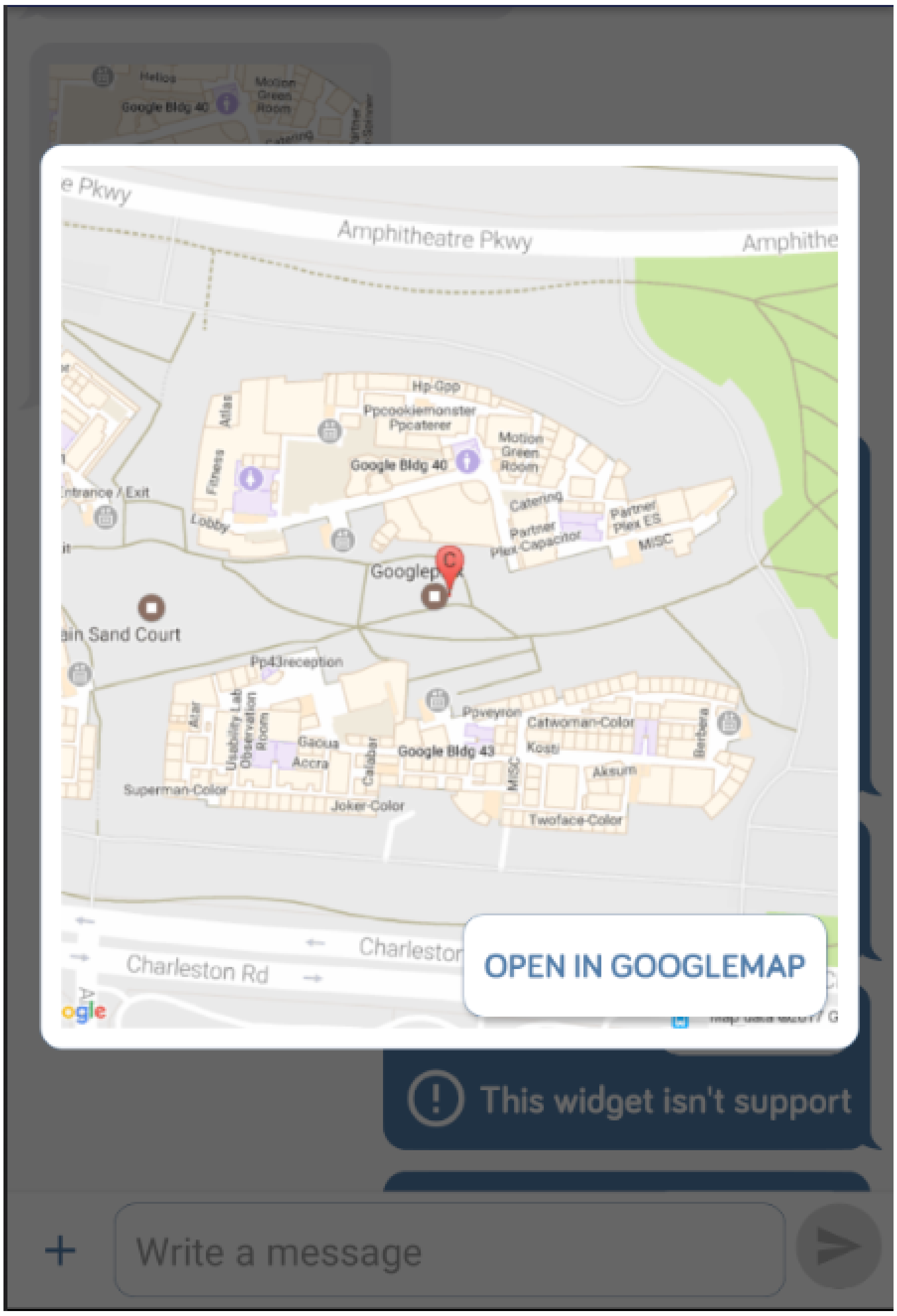


Image 2: *Details representation of the Widget*



Define

Widget have the `List` of the definers that allow to check if `Object` which received from the API is the kind of widget. For implementation of the definer developer should extend of the `KitBaseDefiner`. Definer register for the class which should be putting inside the definer itself.

Code 2: *Example of the definer for the* `MMXMessage` *for the location message type*

```java
public final class KitDefinerMessageLocation extends KitBaseDefiner {

 /**
  * Default constructor for the {@link KitBaseDefiner}
  *
  * @param callerClass instance of the {@link Class}
  */
 public KitDefinerMessageLocation(@NonNull Class callerClass) {
  super(callerClass);
 }

 /**
  * Method which provide the define functional for the {@link Object}
  *
  * @param object instance of the {@link Object}
  */
 @Nullable
 @Override
 public String define(@Nullable Object object) {
  if ((object != null) && (object instanceof MMXMessage)) {
   final MMXMessage message = (MMXMessage) object;
   if (message != null) {
    final KitMessageType type = KitMessageHelper.getType(message);
    if (type == KitMessageType.MAP) {
     return KitWidgetType.MESSAGE_LOCATION.getValue();
    }
   }
  }
  return null;
 }
}
```

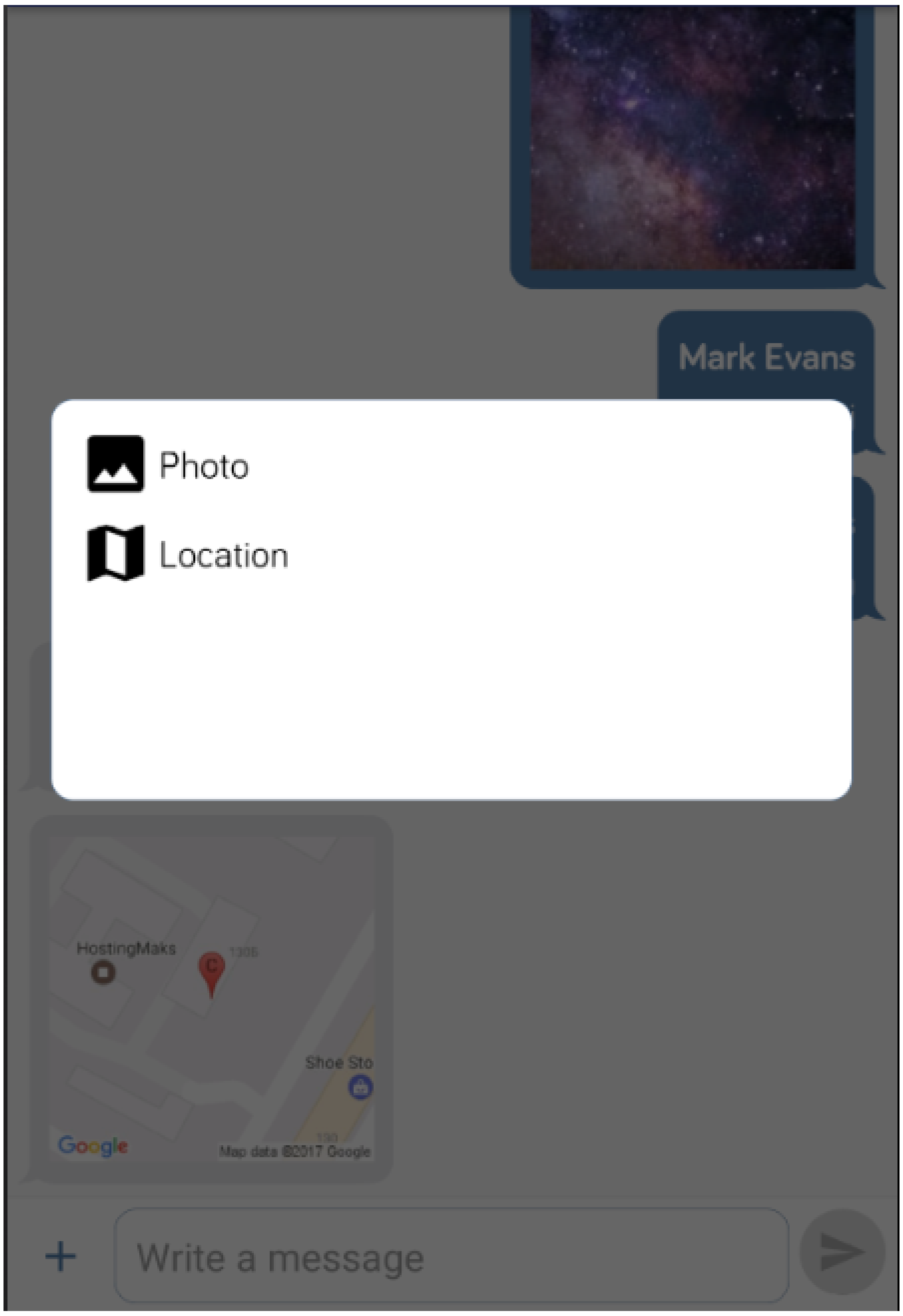
Code 3: *Example of the constructor for the* `KitDefinerMessageLocation`

```java
/**
 * Method which provide the getting of the {@link List} of the {@link KitBaseDefiner}
 *
 * @return {@link List} of the {@link KitBaseDefiner}
 */
@Nullable
@Override
public List < KitBaseDefiner > getDefiners() {
 return Arrays.asList(
  new KitBaseDefiner[] {
   new KitDefinerMessageLocation(MMXMessage.class)
  }
 );
}
```

Menu items

Widget provide the menu items for create itself. They registering inside the widget, and should be connected to view which will be call them.

Image 3: *Menu items*



If widget have `View` representation for the `Create` itself in this case when user press in menu item, it would see the `Create view`, in other case application receive the event in the view (`OnKitViewCallback -> onMenuItemClick(@NonNull KitMenuModel object)`). `List` of the `KitMenuModel` can be `@Nullable`. In this case `Widget` won't have of the menu items.

Code 4: *Example of the `KitMenuModel` creation*

```
/**
 * Method which provide the getting of headers for the menu of the create of the widget
 *
 * @return {@link String} value of the menu header
 */
@Nullable
@Override
public List < KitMenuModel > getMenuHeaders() {
 return Arrays.asList(
  new KitMenuModel(KitMessageType.PHOTO.getText(),
   KitMessageType.PHOTO.getIcon(),
   KitWidgetMessagePhoto.class,
   KitChatView.class,
   KitWidgetType.MESSAGE_PHOTO.getValue())
 );
}
```

Widget

For widget implementation developer need to extend of the `KitWidgetModel<T>` and override every required methods.

Code 5: *Prototype for the widget*

```java
//==============================================================================================
//                                     VIEWS
//==============================================================================================

/**
 * Method which provide the getting view for create widget
 *
 * @param context instance of {@link Context}
 * @return instance of the {@link BSView}
 */
@Nullable
KitBaseCreateView getViewCreate(@NonNull Context context);

/**
 * Method which provide the checking if widget need to have of the create view
 *
 * @return checking if widget need to have of the create view
 */
boolean isNeedCreateView();

/**
 * Method which provide the getting view for details
 *
 * @param context instance of {@link Context}
 * @return instance of the {@link BSView}
 */
@Nullable
KitBaseDetailsView getViewDetails(@NonNull Context context, @Nullable final Parcelable object);

/**
 * Method which provide the checking if widget need to have of the details view
 *
 * @return checking if widget need to have of the create view
 */
boolean isNeedDetailsView();

/**
 * Method which provide the getting view for list representation
 *
 * @return instance of the {@link BSView}
 */
@Nullable
KitBaseListObject getViewList(@Nullable final Parcelable object);

//==============================================================================================
//                                CREATION MENU HEADER
//==============================================================================================

/**
 * Method which provide the getting of headers for the menu of the create of the widget
 *
 * @return {@link String} value of the menu header
 */
```

```
@Nullable
List < KitMenuModel > getMenuHeaders();

/**
 * Method which provide the checking if widget is need of the menu headers
 *
 * @return checking if widget is need of the menu headers
 */
boolean isNeedHeaders();

/**
 * Method which provide the getting of the {@link List} of the {@link KitBaseDefiner}
 *
 * @return {@link List} of the {@link KitBaseDefiner}
 */
@Nullable
List < KitBaseDefiner > getDefiners();

/**
 * Method which provide the getting of the menu header
 *
 * @return checking result
 */
boolean isNeedMenuHeader();

/**
 * Method which provide the getting of the instance of {@link Object}
 *
 * @return instance of {@link Object}
 */
@Nullable
T getObject();

/**
 * Method which provide the getting of the priority for the widget
 *
 * @return instance of the {@link KitWidgetPriority}
 */
@NonNull
KitWidgetPriority getPriority();
```

List view

For implementation of the `List` view developer should extend of the `KitBaseListObject<T>` and override every required methods.

Code 6: *Prototype for the list view*

```
    /**
     * Method which provide the performing the action when the {@link Parcelable} was set
     *
     * @param object instance of the {@link Object}
     */
    public abstract void onPerformInitialize(@Nullable final T object);

    /**
     * Method which provide the getting of the instance of the {@link ClassLoader}
     *
     * @return instance of the {@link ClassLoader}
     */
    @NonNull
    protected abstract ClassLoader getClassLoader();

     /**
     * Method which provide the getting of the instance of the {@link BaseRecyclerItem}
     *
     * @param context instance of the {@link Context}
     * @return instance of the {@link BaseRecyclerItem}
     */
    @Override
    public abstract BaseRecyclerItem getRecyclerItem(@NonNull Context context);
```

For list representation of the **Widget** developer need to extends of the `BaseRecyclerItem` and override it required methods.

Details view

For implementation of the `Details` view developer should extend of the `KitBaseDetailsView<T>` and override every required methods.

Code 7: *Prototype for the details view*

```
/**
 * Method which provide the getting of the {@link Integer} value of the layout ID
 *
 * @return {@link Integer} value of the layout ID
 */
@Override
protected abstract int getLayoutId();

/**
 * Method which provide the functional after {@link View} creation
 */
@Override
protected abstract void onCreateView();
```

Create view

For implementation of the `Create` view developer should extend of the `KitBaseCreateView<T>` and override every required methods.

Code 8: *Prototype for the create view*

```
/**
 * Method which provide the getting of the {@link Integer} value of the layout ID
 *
 * @return {@link Integer} value of the layout ID
 */
@Override
protected abstract int getLayoutId();

/**
 * Method which provide the functional after {@link View} creation
 */
@Override
protected abstract void onCreateView();
```

How To

Application singleton

Create the `Application` singleton by extending of the `KitApplication` and override of the methods. Use the `KitApplication -> registerWidgets()` method for the widget registration.

Code 9: *Example of the method for the registration of the widgets*

```
/**
 * Method which provide the registering of the widgets for the current {@link Application}
 */
@Override
protected void registerWidgets() {
 //TODO Register widgets here
}
```

Chat view

For current implementation of the **ChatKit** exists the `KitChatView` which allow to get the `MMXMessage` for the instance of the `MMXChannel`.

Code 10: *Example how to use of the* `KitChatView`

```java
public final class DetailsActivity extends BSActivity {

 /**
  * Instance of the {@link ChannelDetail}
  */
 private ChannelDetail channel;

 /**
  * Instance of the {@link KitChatView}
  */
 @FindViewBy(id = R.id.view_chat)
 private KitChatView chatView;

 /**
  * Method which provide the getting of the layout ID for the current Activity
  *
  * @return layout ID for the current Activity
  */
 @Override
 protected int getLayoutId() {
  return R.layout.activity_details;
 }

 /**
  * Method which provide the action when Activity is created
  *
  * @param bundle instance of {@link Bundle}
  */
 @Override
 protected void onCreateActivity(@Nullable Bundle bundle) {
  setTitle("Conversation details");
  channel = //Get channel here
  chatView.setChannel(channel);
  chatView.setOnViewCallback(viewCallback);
 }

 /**
  * Method which provide the action when the view is destroy
  */
 @Override
 protected void onDestroy() {
  chatView.onDestroyView();
  super.onDestroy();
 }

 //===============================================================================================
 //                                     CALLBACKS
 //===============================================================================================

 /**
  * Instance of the {@link OnKitViewCallback}
  */
 private final OnKitViewCallback viewCallback = new OnKitViewCallback() {
```

```java
/**
 * Method which provide the action when {@link BSView.Event} received
 *
 * @param context instance of {@link Context}
 * @param view    instance of the {@link BSView}
 * @param event   instance of the {@link BSView.Event}
 */
@Override
public void onCreateEventReceived(@NonNull Context context,
 @NonNull BSView view,
 @NonNull BSView.Event event) {

}

/**
 * Method which provide the action when user press on the channel object
 *
 * @param index  current index
 * @param object current object
 */
@Override
public void onItemClick(int index,
 @NonNull KitBaseListObject object) {

}

/**
 * Method which provide the action when user doing the long press on item
 *
 * @param index  index
 * @param object object
 */
@Override
public void onItemLongClick(int index,
 @NonNull KitBaseListObject object) {

}

/**
 * Method which provide the action listening
 *
 * @param recycleEvent event
 * @param index        index
 * @param object       object
 */
@Override
public void onActionReceived(@NonNull RecycleEvent recycleEvent,
 int index,
 @NonNull KitBaseListObject object) {

}


/**
```

```
     * Method which provide the action when menu item was press
     *
     * @param object instance of the {@link KitMenuModel}
     */
    @Override
    public void onMenuItemClick(@NonNull KitMenuModel object) {

    }
  };
}
```

Universal views

For current implementation of the **ChatKit** exists the `KitUniversalWidgetView` which provide the setting of the `List` of the `KitBaseListObject` which provide the set everything that developer receive from the server side and convert to the `KitBaseListObject`.

Code 11: *Example how to use of the* `KitUniversalWidgetView`

```java
public final class UniversalViewActivity extends BSActivity {

    /**
     * Instance of the {@link KitUniversalWidgetView}
     */
    @FindViewBy(id = R.id.view_universal)
    private KitUniversalWidgetView widgetView;

    /**
     * Method which provide the getting of the layout ID for the current Activity
     *
     * @return layout ID for the current Activity
     */
    @Override
    protected int getLayoutId() {
        return R.layout.activity_universal;
    }

    /**
     * Method which provide the action when Activity is created
     *
     * @param bundle instance of the {@link Bundle}
     */
    @Override
    protected void onCreateActivity(@Nullable Bundle bundle) {
        setTitle(getString(R.string.text_universal));
        this.widgetView = (KitUniversalWidgetView) findViewById(R.id.view_universal);
        this.widgetView.showProgress();
        final List<KitBaseListObject> objects = new ArrayList<>();
        BSThreadManager.background(new BSThreadManager.OnThreadCallback() {
            @Override
            public void onExecute() {
                for (int i = 0; i < 100; i++) {
                    final LabelObject object = new LabelObject();
                    final KitBaseListObject listObject = new ListObjectLabel(object);
                    objects.add(listObject);
                }
                widgetView.setItems(objects);
                widgetView.hideProgress();
            }
        });
    }

    /**
     * Method which provide the defining if need to override of the transition animation
     *
     * @return defining results
     */
    @Override
    protected boolean isOverrideTransitionAnimation() {
        return true;
    }
    /**
     * Method which provide the checking if need back button into {@link ActionBar}
     *
     * @return checking if need back button into {@link ActionBar}
     */
    @Override
    protected boolean isNeedBackButton() {
        return true;
    }
}
```

Summary

In general for now developer able to use `KitUniversalWidgetView` and `KitChatView` for implementation of the widget functional. `KitChatView` have it own `Presenter` for data receiving from the server side and developer able to add it own (custom) widget for the `KitChatView` by registering it in the `Application` singleton.