TASK GUIDE (B3.08)

A. Objectives.

Student will start programing for LogActivity. This task will introduce:

- how to gather Intent passing variables,
- how to use RecyclerView,
- how to use View adapter, and
- how to load array as Intent's extra.

B. Requirements.

Hardware:

- 2 GB RAM minimum, 8 GB RAM recommended
- 2 GB of available disk space minimum, 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
- 1280 x 800 minimum screen resolution
- Intel processor with support for Intel VT-x, Intel EM64T (Intel 64), and Execute Disable (XD) Bit functionality

Software:

- Microsoft Windows 7/8/10 (32-bit or 64-bit)
- JDK 8
- Android Studio IDE (Minimum 3.2) with AndroidX library.

C. Resources.

Documents:

- Guide

Test code:

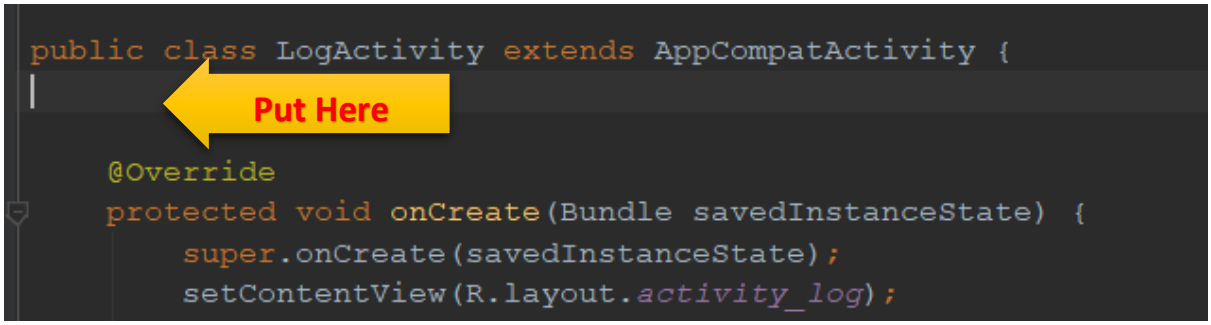
- TestB3MultiActivities081.java

D. Task Description.

Student start programming with LogActivity.

E. Specification.

1. Open “LogActivity.java” in java folder folder.
2. Declare all variables that represents all widgets in activity_main.xml.



Using this template:

```
private <Widget_Type> <variable_name>;
```

All the widgets are:

Widget Type	Variable_name
RecyclerView	‘logView’
Button	‘restartBtn’

3. In the onCreate method, define all widgets variables, which has been declared in point 1, to the related widget id using this template:

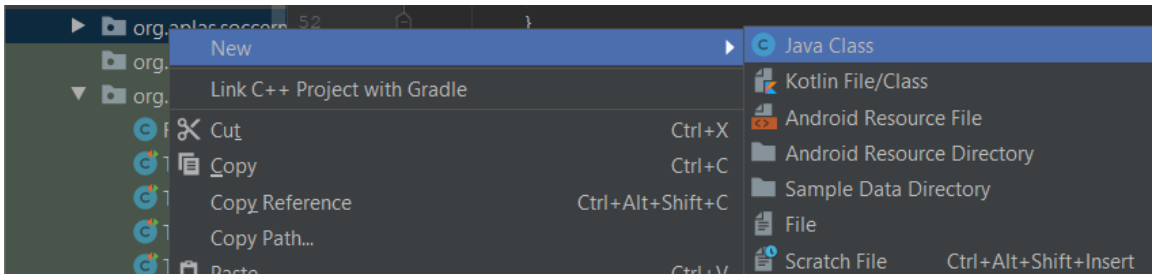
```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    <variable_name> = (<Widget_type>)findViewById(R.id.<widget_id>);
    .
    .
}
```

4. Still in the onCreate method, set some properties of the RecyclerView with this code:

```
logView.setLayoutManager(new LinearLayoutManager(this));
logView.setItemAnimator(new DefaultItemAnimator());
logView.setHasFixedSize(false);
```

5. Create a new Java class for Log adapter with name 'LogAdapter.java',



Modify the code, like below :

```
package org.aplas.soccermatch;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;
import java.util.ArrayList;

import androidx.recyclerview.widget.RecyclerView;

public class LogAdapter extends
     RecyclerView.Adapter<LogAdapter.LogViewHolder> {


}
```

Put Code Here

6. In the 'LogAdapter' class, create some variables and a constructor, like below:

```
private int listItemLayout;
private ArrayList<LogItem> itemList;

// Constructor of the class
public LogAdapter(int layoutId, ArrayList<LogItem> itemList) {
   listItemLayout = layoutId;
   this.itemList = itemList;
}
```

Then, add an Override method to get list size, like below:

```
@Override
public int getItemCount() {
    return itemList == null ? 0 : itemList.size();
}
```

Then, add an Override method to specify the layout of each row, like below:

```
// specify the row layout file and click for each row
@Override
public LogAdapter.LogViewHolder onCreateViewHolder
         (ViewGroup parent, int viewType) {
    View view = LayoutInflater.from(parent.getContext()).
    inflate(listItemLayout, parent, false);
    LogViewHolder holder = new LogViewHolder(view);
    return holder;
}
```

Then, add an Override method to load data for each row elements, like below:

```
// load data in each row element
@Override
public void onBindViewHolder(final LogViewHolder holder,
        final int listPosition) {
    holder.time.setText(itemList.get(listPosition).getTime());
    holder.player.setText(itemList.get(listPosition).getPlayer());
    String name = itemList.get(listPosition).getName();
    holder.name.setText(name);
    if (name.startsWith("Goal")) {
        holder.img.setImageResource(R.drawable.icon_goal);
    } else if (name.startsWith("Yellow")) {
        holder.img.setImageResource(R.drawable.icon_yellow_card);
    } else {
        holder.img.setImageResource(R.drawable.icon_red_card);
    }
}
```

Then, add a static method to initiate views of rows, like below:

```
public static class LogViewHolder extends RecyclerView.ViewHolder {
   public TextView name;
   public TextView time;
   public TextView player;
   public ImageView img;

   public LogViewHolder(View itemView) {
      super(itemView);
      name = (TextView) itemView.findViewById(R.id.txtName);
      time = (TextView) itemView.findViewById(R.id.txtTime);
      player = (TextView) itemView.findViewById(R.id.txtPlayer);
      img = (ImageView) itemView.findViewById(R.id.eventIcon);
   }
}
```

7. Again, create a new Java class for Log item with name ‘LogItem.java’, and modify the code, like below :

```
package org.aplas.soccermatch;

public class LogItem {
    private String name;
    private String time;
    private String player;

    public LogItem(String n, String t, String p) {
        name = n;
        time=t;
        player=p;
    }
    public String getName() {
        return name;
    }
    public String getTime() {
        return time;
    }
    public String getPlayer() {
        return player;
    }
    public void setName(String val) {
        this.name =val;
    }
    public void setTime(String val) {
        this.time = val;
    }
    public void setPlayer(String val) {
        this.player = val;
    }
}
```

8. Back to LogActivity.java, create a new method to load the header part of activity, like below.

```
private void loadHeader() {
    TextView matchResultTxt =
         (TextView)findViewById(R.id.matchResultTxt);
    TextView matchScoreTxt =
         (TextView)findViewById(R.id.matchScoreTxt);
    matchResultTxt.setText("Result: "+
         getIntent().getStringExtra("MATCH_RESULT"));
    matchScoreTxt.setText("Score: "+
         getIntent().getStringExtra("MATCH_SCORE"));
}
```

9. Create a new method to load the data of RecyclerView, like below.

```
private void loadLogData() {
    ArrayList<LogItem> itemList = new ArrayList<>();
    LogAdapter itemArrayAdapter =
        new LogAdapter(R.layout.layout_log, itemList);
    itemArrayAdapter.setHasStableIds(true);

    logView.setAdapter(itemArrayAdapter);

    ArrayList<String> eventList =
        getIntent().getStringArrayListExtra("MATCH_EVENT");

    // Populating list items
    for(int i=0; i<eventList.size(); i++) {
        String[] data = eventList.get(i).split("@");
        String eventName = data[0];
        String eventTime = data[3];
        String eventPlayer = data[1]+" ("+data[2]+")";
        itemList.add(new LogItem(eventName,eventTime,eventPlayer));
    }
    Toast.makeText(LogActivity.this, "Data loaded",
        Toast.LENGTH_LONG).show();
}
```

In the end of code, Toas will be shown as information for the data length.

10. Create an Override method ‘onStart’ to call the method in point 8 and 9. Write by your self.

11. Create a new method to show MainActivity as Intent with passing some variables, like below.

```
private void openMainActivity() {
   Intent main = new
        Intent(getApplicationContext(),MainActivity.class);
   main.putExtra("MESSAGE", "new");
   startActivity(main);
}
```

12. In the onCreate method, create an OnClickListener for Button ’restartBtn’ with call method ‘openMainActivity’ like below:

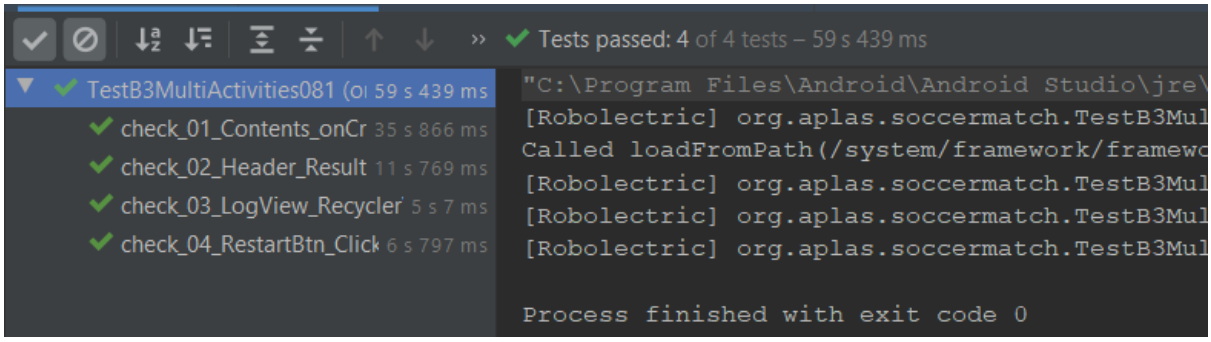
```
restartBtn.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View view) {
      openMainActivity();
   }
});
```

F. Testing.

1. Copy “TestB3MultiActivities081.java” file to “org.aplas.soccermatch (test)” folder.

2. Right click on the “TestB3MultiActivities081.java” file then choose Run. It may take long time to execute.

3. Get the result of your task. If passed you will get green check like below. If the test failed, you will get orange check get the messages and you must check your work again.

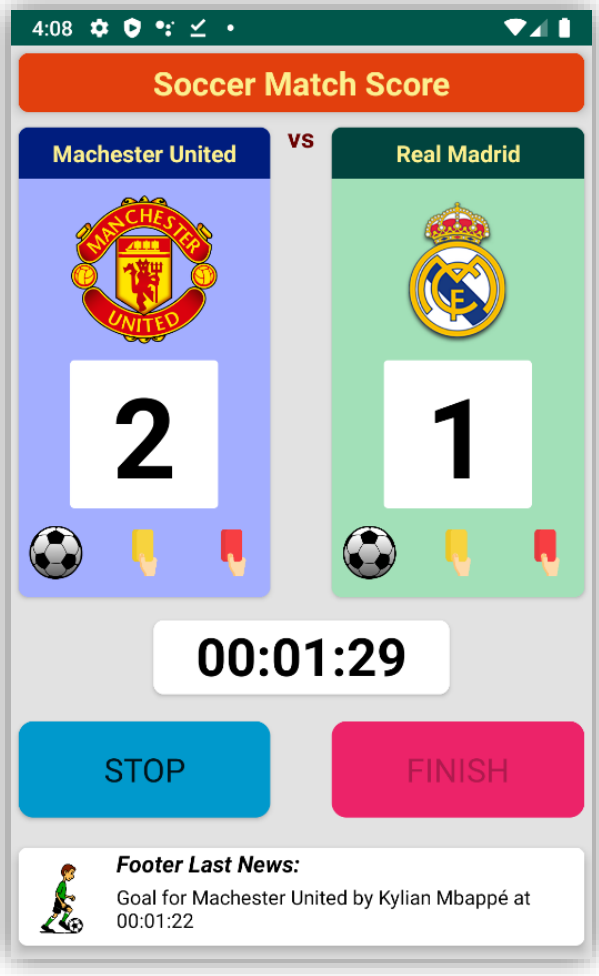


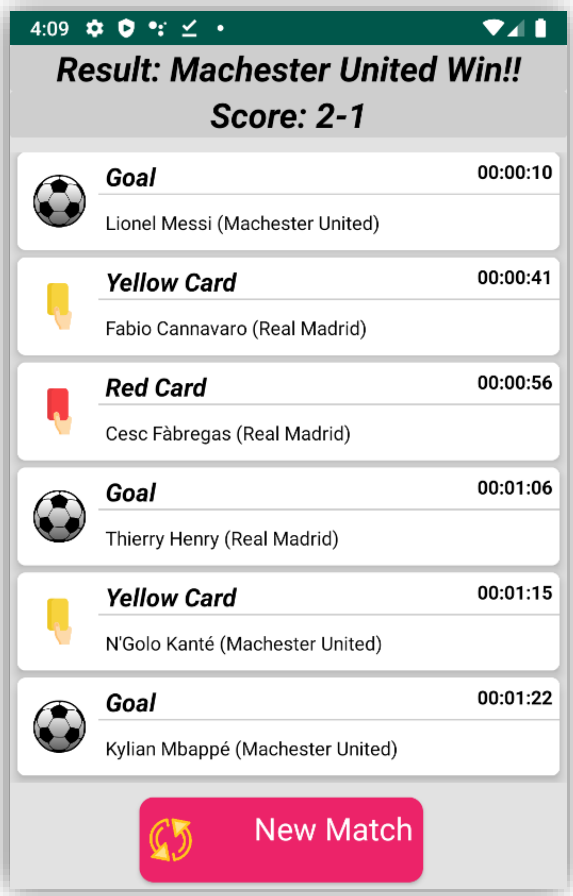
You have to try until get all green checkes and continue to the next task.

G. Note.

After you finish, you can run and try the app. The result should be similar like below.


4:06
APLAS SOCCER BOARD
Home Team
Machester United
David De Gea
Sergio Ramos
Virgil van Dijk
Raphaël Varane
Marcelo
Luka Modrić
N'Golo Kanté
Eden Hazard
Kylian Mbappé
11 player(s)
Away Team
Real Madrid
Gianluigi Buffon
Gianluca Zambrotta
Fabio Cannavaro
Carles Puyol
Philipp Lahm
Steven Gerrard
Cesc Fàbregas
Kaká
Ronaldinho
11 player(s)
Next


4:08
Soccer Match Score
Machester United
vs
Real Madrid
2
1
00:01:29
STOP
FINISH
Footer Last News:
Goal for Machester United by Kylian Mbappé at 00:01:22


4:09
Result: Machester United Win!!
Score: 2-1
Goal 00:00:10
Lionel Messi (Machester United)
Yellow Card 00:00:41
Fabio Cannavaro (Real Madrid)
Red Card 00:00:56
Cesc Fàbregas (Real Madrid)
Goal 00:01:06
Thierry Henry (Real Madrid)
Yellow Card 00:01:15
N'Golo Kanté (Machester United)
Goal 00:01:22
Kylian Mbappé (Machester United)
New Match