# National University of Computer and Emerging Sciences, Lahore Campus

| Course Name: | Software For Mobile Devices | Course Code: | CS440 |
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| Program: | BS(CS) | Semester: | Spring 2019 |
| Duration: | 60 Minutes | Total Marks: | 30 |
| Paper Date: | 27-02-2019 | Weight | 10 |
| Section: | ALL | Page(s): | 4 |
| Exam Type: | Midterm-I | | |

Student : Name:_____ Roll No._____ Section:_____

| Instruction/Notes: | This is an Open book/notes exam. However the notes and books should only be in the hard form. |
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## Question 1: Provide short answers to the following questions. [Marks 8]

a. What's the difference between onCreate and onStart in the activity lifecycle?
b. What's the purpose of onSaveInstanceState and when it is invoked in the activity lifecycle?

## Question 2: [Marks 22] Consider developing application that displays different sport events. Figure 1 below shows the template of the launching activity.



As the template shows, there are two recyclerviews used for developing the layout. Top recyclerview dislays categories of the sports. When a category from top list is selected, its relevant events are displayed in the bottom recyclerview. In Figure 1, Cricket is selected from the top list, hence its relevant events are displayed in the bottom list. Also, Cricket events should be displayed by default on activity launch.

Following Data and Activity classes are provided

```java
public class SportsInfoActivity extends AppCompatActivity
{
    ArrayList<DataElement> array1;
    List<List<DataElement>> listOfEvents;
    DataElementAdapter cAdapter;
    DataElementAdapter eAdapter;
    RecyclerView rcvTop;
    RecyclerView rcvBottom;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main5);
```

```java
public class DataElement {
    int imageID;
    String heading1;
    String heading2;
    public int getImageID()
    {return imageID;}
    public void setImageID(int
    imageID) {this.imageID =
    imageID;}
    public String getDetail() {
    return heading1;}
    public void
    setDetail(String detail) {
```

```java
        listOfEvents = new
ArrayList<List<DataElement>>(3);
        array1 = new ArrayList<DataElement>();
        array1.add(new
DataElement(R.drawable.cric,"Cricket","Game of Asia"));
        array1.add(new
DataElement(R.drawable.football,"Football","Game of
world"));
        array1.add(new
DataElement(R.drawable.Tennis,"Tennis","Game of
Legends"));

        ArrayList<DataElement> events = new
ArrayList<DataElement>();
        events.add(new
DataElement(R.drawable.PSL1,"Karachi Kings Vs. Lahore
Qalenders","February 20,2019, 4 PM"));
        events.add(new
DataElement(R.drawable.PSL2,"Peshawar Zalmi Vs. Quetta
Gladiators","February 21,2019, 6 PM"));
        events.add(new
DataElement(R.drawable.PSL3,"Tennis","Peshawar Zalmi Vs.
Quetta Gladiators","February 25,2019, 6 PM"));

        listOfEvents.add(events);

        cAdapter = new
DataElementAdapter(R.layout.row_view1,array1);
        eAdapter = new
DataElementAdapter(R.layout.row_view2,listOfEvents.get(0)
);

        rcvTop = findViewById(R.id.rcvCategories);
        rcvBottom = findViewById(R.id.rcvEvents);

        rcvTop.setAdapter(cAdapter);
        rcvBottom.setAdapter(eAdapter);
    }
}
```

```java
this.heading1 = detail;}
    public String getTime()
{return heading2;}
    public void setTime(String
time) {this.heading2 = time;}
//Assume required constructor
is also available

}
```

To keep the things easy, it is assumed that all images are available in the drawable folder of project.

## *__What to Do?__* You are required to provide followings in order to complete the implementation of the template activity of Figure 1

- *__Complete__* missing code from Activity class.
- Provide implementation of the DataElementAdapter class.
- Provide complete implementation of the ViewHolder class(es).
- Provide any other class/code that is missing (if any)
- Do not provide layout design/ID. Assume all the required layout/xml files are available.