Question 1 (4+3+3=10 points) Answer the following questions (in the space provided):

1. **What issues need to be handled if the orientation of a device is changed at the runtime?**

2. **What is the concept of layout and menu inflation?**

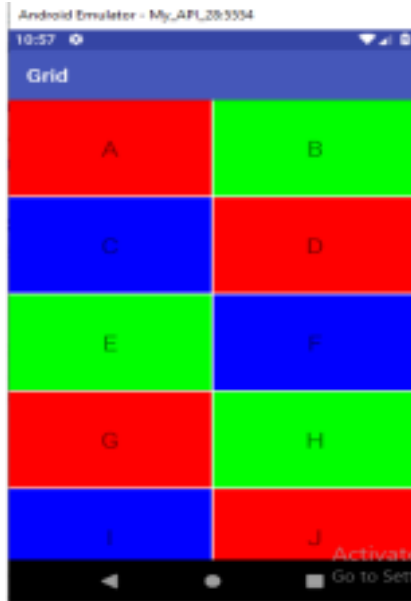3. **Contrast the memory management approach in Linux and Android.**

National University of Computer and Emerging Sciences, Lahore Campus **Course: Software for Mobile Devices Course Code: CS-440 Program: BS (Computer Science) Semester: Spring 2020 Duration: 90 Minutes Total Marks: 30 Paper Date: '21-Oct-20 Weight 12.5 % Section: A Page(s): 4**

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Question 2 (20 points)

Red   Green Red

Blue

Suppose we want to use GridView to design a simple two-column layout for displaying alphabets (A-Z), as illustrated in the UI above. Each cell alternates among three colors (red, green and blue).

A basic code skeleton is given. Please fill-in the missing code sections to achieve the required layout. Make use of all the best practices required to handle scrolling of the contents considering re-cycling of views and the View Holder pattern.

Layout Files

```
activity_main.xml
```

```xml
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent"
 android:layout_height="match_parent">
 <GridView
 android:id="@+id/grid"
 android:layout_width="match_parent"
 android:layout_height="match_parent"
 android:numColumns="2"
 android:horizontalSpacing="5px"
 android:verticalSpacing="5px"
 />
</LinearLayout>
```

ml

```xml
<TextView xmlns:android=
 "http://schemas.android.com/apk/res/android"
 android:layout_width="match_parent"
 android:layout_height="1in"
 android:gravity="center"
 android:textSize="24sp"
 >
</TextView>
```

Source Code

```java
public class MainActivity extends Activity {
 GridView grid;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_main);

 // specify any missing code below in the line

 _____
bind();
 }
 void bind(){
 String array[] = {"A","B","C","D","E","F","G","H","I","J","K",
"L","M","N","O","P","Q","R","S","T","U","V","W","X","Y","Z"};  //
specify any missing code below in the line
 GridAdapter adapter = _____;
grid.setAdapter(adapter);
 }
}
```

```java
public class GridAdapter _____ {
int[] colors = {0xFFFF0000,0xFF00FF00,0xFF0000FF}; // {red,green,blue}
// TextView has setBackgroundColor function for changing color
```

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```
writing code here




































}
```