



PUNE INSTITUTE OF COMPUTER TECHNOLOGY, PUNE – 411043
Department of Electronics & Telecommunication Engineering

BATCH AND ROLL NO: P8 42405

EXPERIMENT NO.2

TITLE: Designing of mobile application to create home page using grid layout.

DATE OF PERFORMANCE

DATE OF CHECKING

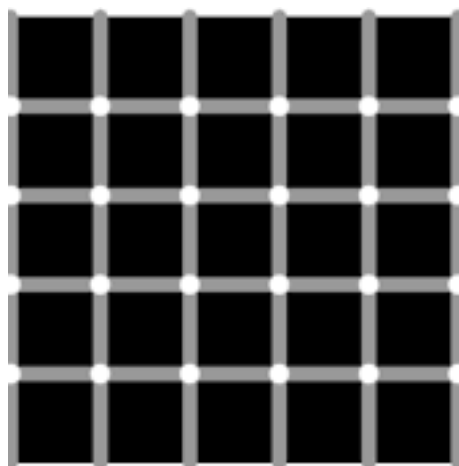
Title: Designing of mobile application to create home page using grid layout.

Requirements:

1. Android studio
2. Java SDK

Theory:

Grid is merely a skeleton that helps arrange the items on page. Grid Layout is a layout manager that arranges the views in a grid. In Android GridLayout, we can specify the number of columns and rows that the grid will have. We can customize the GridLayout according to our requirements, like setting the size, color or the margin for the Layout. GridLayout basically places its children in a rectangular grid. This grid has a set of a number of thin lines that separate the view area into cells. Suppose you have a grid of N columns, then we will have N+1 grid indices that would be starting from 0.





Specifications of Android GridLayout

1. Row and Columns

The children can occupy the cells in contiguous cells, by defining them as follows:

For rows:

This defines the number of rows that would be occupied and how the children would aligned within the group of cells.

`GridLayout.LayoutParams#rowSpec`

For Columns:

This defines the number of columns that would be occupied and how the children would be aligned within the group of cells.

`GridLayout.LayoutParams#columnSpec`

2. Default Cell Assignment

If children do not have specified rows and columns then, the cell location is assigned automatically using the following:

- `GridLayout#setOrientation(int)`
- `GridLayout#setRowCount(int)`
- `GridLayout#setColumnCount(int)`

Attributes of Android GridLayout:

The Specifications here describes the characteristics of the rows and columns of a group of cells. For a description of the characteristics of a GridLayout, we can use the following

XML Attributes:

- **android:alignmentMode** – It sets the alignment of the margins and the boundaries.
- **android:columnCount** – It sets the maximum number of columns to create when positioning children automatically.
- **android:columnOrderPreserved** – It ensures that the column boundaries appear in the same order as its column indices.
- **android:rowCount** – It set the maximum no. of rows to create when positioning children automatically.
- **android:rowOrderPreserved** -It ensures that the row boundaries appear in the same order as its row indices.
- **android:useDefaultMargins** – It tells the GridLayout to use margins if no margin is specified in the parameter. For this, it needs to be set on True.



Steps:

1. Create a New project in Android studio.
2. Add required dependencies.
3. Working with XML file
4. Open activity_main.XML file, which represents the UI of the project.

Comments are added inside the code according to grid layout creation.

Android layout commands

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/background"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/title_view"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_margin="12dp"
        android:text="CARD VIEW DESIGN"
        android:textColor="#fff"
        android:textSize="30sp"
        android:textStyle="bold" />

    <GridLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_below="@id/title_view"
        android:layout_margin="20dp"
        android:columnCount="2"
        android:rowCount="3">

        <androidx.cardview.widget.CardView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_row="0"
            android:layout_rowWeight="1"
            android:layout_column="0"
            android:layout_columnWeight="1"
            android:layout_gravity="fill"
            app:cardCornerRadius="8dp"
```

```
app:cardElevation="8dp"
```

```
app:cardUseCompatPadding="true">
```

```
<LinearLayout
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_gravity="center_vertical|center_horizontal"
```

```
    android:gravity="center"
```

```
    android:orientation="vertical">
```

```
<ImageView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:src="@drawable/home" />
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:text="HOME"
```

```
    android:textAlignment="center"
```

```
    android:textStyle="bold" />
```

```
</LinearLayout>
```

```
</androidx.cardview.widget.CardView>
```

```
<androidx.cardview.widget.CardView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_row="0"
```

```
    android:layout_rowWeight="1"
```

```
    android:layout_column="1"
```

```
    android:layout_columnWeight="1"
```

```
    android:layout_gravity="fill"
```

```
    app:cardCornerRadius="8dp"
```

```
    app:cardElevation="8dp"
```

```
    app:cardUseCompatPadding="true">
```

```
<LinearLayout
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_gravity="center_vertical|center_horizontal"
```

```
    android:gravity="center"
```

```
    android:orientation="vertical">
```

```
<ImageView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:src="@drawable/language" />
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:text="LANGUAGE"
```

```
    android:textAlignment="center"
```

```
    android:textStyle="bold" />
```

```
</LinearLayout>
</androidx.cardview.widget.CardView>

<androidx.cardview.widget.CardView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_row="1"
    android:layout_rowWeight="1"
    android:layout_column="0"
    android:layout_columnWeight="1"
    android:layout_gravity="fill"
    app:cardCornerRadius="8dp"
    app:cardElevation="8dp"
    app:cardUseCompatPadding="true">

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_vertical|center_horizontal"
        android:gravity="center"
        android:orientation="vertical">

        <ImageView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@drawable/chat" />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="CHAT"
            android:textAlignment="center"
            android:textStyle="bold" />
    </LinearLayout>
</androidx.cardview.widget.CardView>

<androidx.cardview.widget.CardView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_row="1"
    android:layout_rowWeight="1"
    android:layout_column="1"
    android:layout_columnWeight="1"
    android:layout_gravity="fill"
    app:cardCornerRadius="8dp"
    app:cardElevation="8dp"
    app:cardUseCompatPadding="true">

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_vertical|center_horizontal"
        android:gravity="center"
        android:orientation="vertical">
```

```
<ImageView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:src="@drawable/calendar" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="CALENDAR"
    android:textAlignment="center"
    android:textStyle="bold" />
</LinearLayout>
</androidx.cardview.widget.CardView>

<androidx.cardview.widget.CardView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_row="2"
    android:layout_rowWeight="1"
    android:layout_column="0"
    android:layout_columnWeight="1"
    android:layout_gravity="fill"
    app:cardCornerRadius="8dp"
    app:cardElevation="8dp"
    app:cardUseCompatPadding="true">

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_vertical|center_horizontal"
        android:gravity="center"
        android:orientation="vertical">

        <ImageView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@drawable/widgets" />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="WIDGETS"
            android:textAlignment="center"
            android:textStyle="bold" />
        </LinearLayout>
    </androidx.cardview.widget.CardView>

<androidx.cardview.widget.CardView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_row="2"
    android:layout_rowWeight="1"
```

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```
android:layout_column="1"  
android:layout_columnWeight="1"  
android:layout_gravity="fill"  
app:cardCornerRadius="8dp"  
app:cardElevation="8dp"  
app:cardUseCompatPadding="true">
```

```
<LinearLayout  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center_vertical|center_horizontal"  
    android:gravity="center"  
    android:orientation="vertical">
```

```
<ImageView  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:src="@drawable/info" />
```

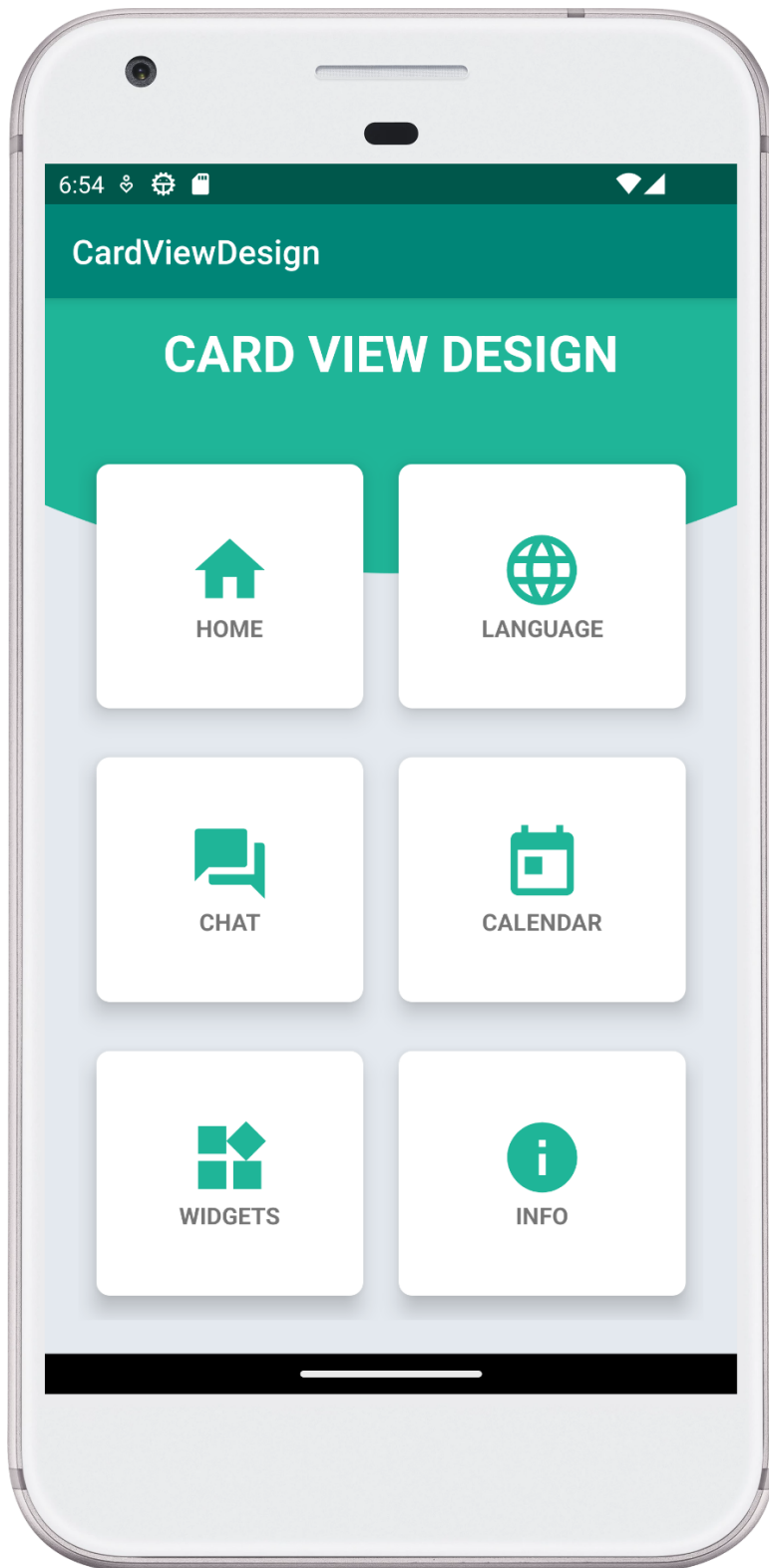
```
<TextView  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="INFO"  
    android:textAlignment="center"  
    android:textStyle="bold" />
```

```
</LinearLayout>  
</androidx.cardview.widget.CardView>  
</GridLayout>
```

```
</RelativeLayout>
```



Output:





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CONCLUSION:

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