

## Experiment Name: Playing Dice Android Application

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**Aim:** Rolling Dice Game

### Description of App:

An android app where 2 players play alternatively taking turns to roll their respective dice. The app layout consists of 2 dice for the 2 players, 2 buttons for them to click when it's their turn. This will result in random number at dice and score will be added to the total score of player. First player to reach 25 wins.

### Device Specifications:

App runs on the minSDK version of 16 and Android version 11 using Pixel 3A API emulator and samsung device. Only default libraries were used.

### Technical Concepts Learnt:

Learnt usage of Layout, Button, Event Handler and generating random numbers. Changing images dynamically and rotation of dice using animation was also learnt. Finally generating Toast to display winner player was conceptualized.

### CODE:

Main Activity.java

```
package com.example.playingdice;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.view.animation.Animation;
import android.view.animation.AnimationUtils;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;

import com.example.playingdice.R;

import java.util.Random;

public class MainActivity extends AppCompatActivity {

    ImageView dice1, dice2;
    TextView score1, score2;
    Button player1, player2;
```

```

int winner=-1;
int chance = -1;

TextView chance_text;

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

    dice1 = (ImageView) findViewById(R.id.dice1);
    dice2 = (ImageView) findViewById(R.id.dice2);

    score1 = (TextView) findViewById(R.id.score1);
    score2 = (TextView) findViewById(R.id.score2);

    player1 = (Button) findViewById(R.id.player1);
    player2 = (Button) findViewById(R.id.player2);

    chance_text = (TextView) findViewById(R.id.chance);

    Random rand = new Random();
    chance = rand.nextInt(2) + 1;

    if(chance==1) {
        chance_text.setText("Player 1 to play");
    }
    else {
        chance_text.setText("Player 2 to play");
    }

    player1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            rotateDice1();
        }
    });

    player2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            rotateDice2();
        }
    });

}
private void rotateDice1(){

```

```

Animation anim = AnimationUtils.LoadAnimation(this, R.anim.rotate);
dice1.startAnimation(anim);
if(winner== -1) {
    if (chance == 1) {
        Random rand = new Random();
        int number = rand.nextInt(6) + 1;

        int score = Integer.valueOf(score1.getText().toString()) +
number;

        score1.setText(String.valueOf(score));
        if (score >= 25) {
            winner = 1;
            chance_text.setText("Player " + String.valueOf(winner) + "
won the game!!!");
            Toast.makeText(getApplicationContext(), "Player" +
String.valueOf(winner) + " won", Toast.LENGTH_SHORT).show();
        }

        int res = R.drawable.d1;
        switch (number) {
            case 1:
                res = R.drawable.d1;
                break;
            case 2:
                res = R.drawable.d2;
                break;
            case 3:
                res = R.drawable.d3;
                break;
            case 4:
                res = R.drawable.d4;
                break;
            case 5:
                res = R.drawable.d5;
                break;
            case 6:
                res = R.drawable.d6;
                break;
        }
        dice1.setImageResource(res);
        chance=2;
        if(winner== -1)
            chance_text.setText("Player 2 to play");
    }
    else {
        Toast.makeText(getApplicationContext(), "Oops.. Player 2 has to
play now", Toast.LENGTH_SHORT).show();
    }
}
else {
    chance_text.setText("Player " + String.valueOf(winner) + " won the
game!!!");
    Toast.makeText(getApplicationContext(), "Player" +
String.valueOf(winner) + " won", Toast.LENGTH_SHORT).show();
}

```

```

    }
}

private void rotateDice2()
{
    Animation anim = AnimationUtils.LoadAnimation(this, R.anim.rotate);
    dice2.startAnimation(anim);
    if(winner== -1) {
        if(chance==2) {
            Random rand = new Random();
            int number = rand.nextInt(6) + 1;

            int score = Integer.valueOf(score2.getText().toString()) +
number;
            score2.setText(String.valueOf(score));

            int res = R.drawable.d1;
            switch (number) {
                case 1:
                    res = R.drawable.d1;
                    break;
                case 2:
                    res = R.drawable.d2;
                    break;
                case 3:
                    res = R.drawable.d3;
                    break;
                case 4:
                    res = R.drawable.d4;
                    break;
                case 5:
                    res = R.drawable.d5;
                    break;
                case 6:
                    res = R.drawable.d6;
                    break;
            }
            dice2.setImageResource(res);

            if (score >= 25) {
                winner = 2;
                chance_text.setText("Player " + String.valueOf(winner) + "
won the game!!!");
                Toast.makeText(getApplicationContext(), "Player " +
String.valueOf(winner) + " won the game!!!", Toast.LENGTH_LONG).show();
            }
            chance=1;
            if(winner== -1)
                chance_text.setText("Player 1 to play");
        }
        else {
            Toast.makeText(getApplicationContext(), "Oops.. Player 1 has to
play now", Toast.LENGTH_SHORT).show();
        }
    }
}

```

```

    }
    else {
        chance_text.setText("Player " + String.valueOf(winner) + " won the
game!!!");
        Toast.makeText(getApplicationContext(), "Player " +
String.valueOf(winner) + " won the game!!!", Toast.LENGTH_LONG).show();
    }
}
}
}

```

Activity\_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_gravity="center"
        android:layout_marginTop="30dp"
        android:gravity="center"
        >

        <androidx.appcompat.widget.AppCompatImageView
            android:id="@+id/dice1"
            android:layout_width="100dp"
            android:layout_height="100dp"
            android:layout_marginRight="30dp"
            android:tint="#4DFF1100"
            app:srcCompat="@mipmap/d1" />

        <androidx.appcompat.widget.AppCompatImageView
            android:id="@+id/dice2"
            android:layout_width="100dp"
            android:layout_height="100dp"
            android:layout_marginLeft="30dp"
            android:tint="#6600E2FF"
            app:srcCompat="@mipmap/d1" />

    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_gravity="center"
        android:layout_marginTop="30dp"
        android:gravity="center"
        >

```

```

<Button
    android:id="@+id/player1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginRight="30dp"
    android:background="@android:color/holo_red_light"
    android:shadowColor="@android:color/holo_red_light"
    android:text="Player 1"
    app:backgroundTint="#FF0000" />

<Button
    android:id="@+id/player2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="30dp"
    android:background="@android:color/holo_blue_light"
    android:shadowColor="@android:color/holo_blue_light"
    android:text="Player 2"
    app:backgroundTint="#0027FF" />
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_gravity="center"
    android:layout_marginTop="30dp"
    android:gravity="center"
    >

    <TextView
        android:id="@+id/score1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginRight="70dp"
        android:text="0"
        android:gravity="center"
        android:textColor="@android:color/holo_red_dark"
        android:textSize="18sp"
        android:textStyle="bold" />

    <TextView
        android:id="@+id/score2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="70dp"
        android:gravity="center"
        android:text="0"
        android:textColor="@android:color/holo_blue_dark"
        android:textSize="18sp"
        android:textStyle="bold" />

</LinearLayout>

```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/chance"
    android:layout_gravity="center"
    android:gravity="center"
    android:textColor="@android:color/black"
    android:textStyle="italic"
    android:textSize="16sp"
    android:layout_marginTop="30dp"
    android:text="Player to start"
>
</TextView>
```

```
</LinearLayout>
```

Rotate.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">

    <rotate
        android:fromDegrees="0"
        android:toDegrees="720"
        android:pivotX="50%"
        android:pivotY="50%"
        android:duration="500"/>
</set>
```

Screenshots:

6:03

VoLTE R 80%

# PlayingDice



PLAYER 1

PLAYER 2

15

27

*Player 2 won the game!!!*

Player 2 won the game!!!



6:03

80%

# PlayingDice



PLAYER 1

PLAYER 2

24

25

*Player 2 won the game!!!*

Oops.. Player 2 has to play now

6:03

VoLTE R 80%

# PlayingDice



PLAYER 1

PLAYER 2

15

27

*Player 2 won the game!!!*

Player 2 won the game!!!

Outcomes:

Android App for Dice roll was made successfully.