**XML CODE:-**

<?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"

tools:context=".MainActivity"

android:layout\_margin="10dp"

android:background="@drawable/bg" >

<TextView

android:id="@+id/texttitle"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Tic Tac Toe"

android:layout\_centerHorizontal="true"

android:textSize="36sp"

android:textStyle="bold"

android:textColor="#cc1234"

android:fontFamily="cursive"

/>

<RelativeLayout

android:id="@+id/relative\_layout"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerHorizontal="true"

android:layout\_below="@+id/texttitle"

android:layout\_marginBottom="20dp">

<TextView

android:id="@+id/text\_player1"

android:layout\_width="200dp"

android:layout\_height="wrap\_content"

android:text="Player-1 Score"

android:textAlignment="center"

android:textColor="@color/black"

android:textSize="26dp"

android:textStyle="bold" />

<TextView

android:id="@+id/text\_player2"

android:layout\_width="200dp"

android:layout\_height="wrap\_content"

android:text="Player-2 Score"

android:textSize="26dp"

android:textStyle="bold"

android:textColor="@color/black"

android:textAlignment="center"

android:layout\_toRightOf="@id/text\_player1"

/>

<TextView

android:id="@+id/score\_Player1"

android:layout\_width="200dp"

android:layout\_height="wrap\_content"

android:text="0"

android:textAlignment="center"

android:textColor="@color/black"

android:textSize="26dp"

android:textStyle="bold"

android:layout\_below="@id/text\_player1"/>

<TextView

android:id="@+id/score\_Player2"

android:layout\_width="200dp"

android:layout\_height="wrap\_content"

android:text="0"

android:textAlignment="center"

android:textColor="@color/black"

android:textSize="26dp"

android:textStyle="bold"

android:layout\_below="@id/text\_player2"

android:layout\_toRightOf="@id/score\_Player1"/>

</RelativeLayout>

<LinearLayout

android:id="@+id/layout\_linear"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:orientation="vertical"

android:layout\_centerHorizontal="true"

android:layout\_below="@id/relative\_layout"

>

<LinearLayout

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:orientation="horizontal"

>

<Button

android:id="@+id/btn0"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

<Button

android:id="@+id/btn1"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

<Button

android:id="@+id/btn2"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

</LinearLayout>

<LinearLayout

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:orientation="horizontal"

>

<Button

android:id="@+id/btn3"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

<Button

android:id="@+id/btn4"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

<Button

android:id="@+id/btn5"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

</LinearLayout>

<LinearLayout

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:orientation="horizontal"

>

<Button

android:id="@+id/btn6"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

<Button

android:id="@+id/btn7"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

<Button

android:id="@+id/btn8"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:textSize="26dp"

android:layout\_marginHorizontal="5dp"

android:layout\_marginBottom="1.25dp"/>

</LinearLayout>

</LinearLayout>

<TextView

android:id="@+id/textStatus"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/layout\_linear"

android:layout\_marginTop="20dp"

android:layout\_centerHorizontal="true"

android:textSize="26dp"

android:text="Status"

android:textColor="@color/black"/>

<Button

android:id="@+id/btn\_play\_again"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/textStatus"

android:layout\_centerHorizontal="true"

android:text="Play Again"

android:textSize="26dp"

android:backgroundTint="#ffbb00"/>

<Button

android:id="@+id/btn\_reset"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/btn\_play\_again"

android:layout\_centerHorizontal="true"

android:text="Reset Game"

android:textSize="26dp"

android:backgroundTint="#cc1234"/>

</RelativeLayout>

**JAVA CODE:-**

package com.example.tictactoe;

import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Color;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements View.OnClickListener {

boolean playerOneActive;

private TextView playerOneScore, playerTwoScore, playerStatus;

private Button[] buttons = new Button[9];

private Button reset, playagain;

int[] gameState = {2,2,2,2,2,2,2,2,2};

int[][] winningPositions = {{0,1,2}, {3,4,5}, {6,7,8}, {0,3,6},

{1,4,7}, {2,5,8}, {0,4,8}, {2,4,6}};

int rounds;

private int playerOneScoreCount, playerTwoScoreCount;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

playerOneScore = findViewById(R.id.score\_Player1);

playerTwoScore = findViewById(R.id.score\_Player2);

playerStatus = findViewById(R.id.textStatus);

reset = findViewById(R.id.btn\_reset);

playagain = findViewById(R.id.btn\_play\_again);

buttons[0] = findViewById(R.id.btn0);

buttons[1] = findViewById(R.id.btn1);

buttons[2] = findViewById(R.id.btn2);

buttons[3] = findViewById(R.id.btn3);

buttons[4] = findViewById(R.id.btn4);

buttons[5] = findViewById(R.id.btn5);

buttons[6] = findViewById(R.id.btn6);

buttons[7] = findViewById(R.id.btn7);

buttons[8] = findViewById(R.id.btn8);

for(int i=0; i<buttons.length; i++)

{

buttons[i].setOnClickListener(this);

}

playerOneScoreCount = 0;

playerTwoScoreCount = 0;

playerOneActive = true;

rounds = 0;

}

@Override

public void onClick(View view)

{

if(!((Button)view).getText().toString().equals(""))

{

return;

}

else if(checkWinner())

{

return;

}

String buttonID = view.getResources().getResourceEntryName(view.getId());

int gameStatePointer = Integer.parseInt(buttonID.substring(buttonID.length()-1,buttonID.length()));

if(playerOneActive)

{

((Button)view).setText("X");

((Button)view).setTextColor(Color.parseColor("#ffc34a"));

gameState[gameStatePointer] = 0;

}

else

{

((Button)view).setText("O");

((Button)view).setTextColor(Color.parseColor("#70fc3a"));

gameState[gameStatePointer] = 1;

}

rounds++;

if(checkWinner())

{

if(playerOneActive)

{

playerOneScoreCount++;

updatePlayerScore();

playerStatus.setText("Player-1 has won");

}else

{

playerTwoScoreCount++;

updatePlayerScore();

playerStatus.setText("Player-2 has won");

}

}

else if(rounds==9)

{

playerStatus.setText("No Winner");

}

else

{

playerOneActive = !playerOneActive;

}

reset.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

playAgain();

playerOneScoreCount= 0;

playerTwoScoreCount= 0;

updatePlayerScore();

}

});

playagain.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

playAgain();

}

});

}

private boolean checkWinner()

{

boolean winnerResults = false;

for (int[] winningPositions: winningPositions)

{

if(gameState[winningPositions[0]]==gameState[winningPositions[1]]&&

gameState[winningPositions[1]]==gameState[winningPositions[2]] &&

gameState[winningPositions[0]]!=2)

{

winnerResults = true;

}

}

return winnerResults;

}

private void playAgain()

{

rounds = 0;

playerOneActive = true;

for (int i=0; i<buttons.length; i++)

{

gameState[i] = 2;

buttons[i].setText("");

}

playerStatus.setText("Status");

}

private void updatePlayerScore()

{

playerOneScore.setText(Integer.toString(playerOneScoreCount));

playerTwoScore.setText(Integer.toString(playerTwoScoreCount));

}

}

**OUTPUT:-**

