MOBILE APPLICATION DEVELOPMENT
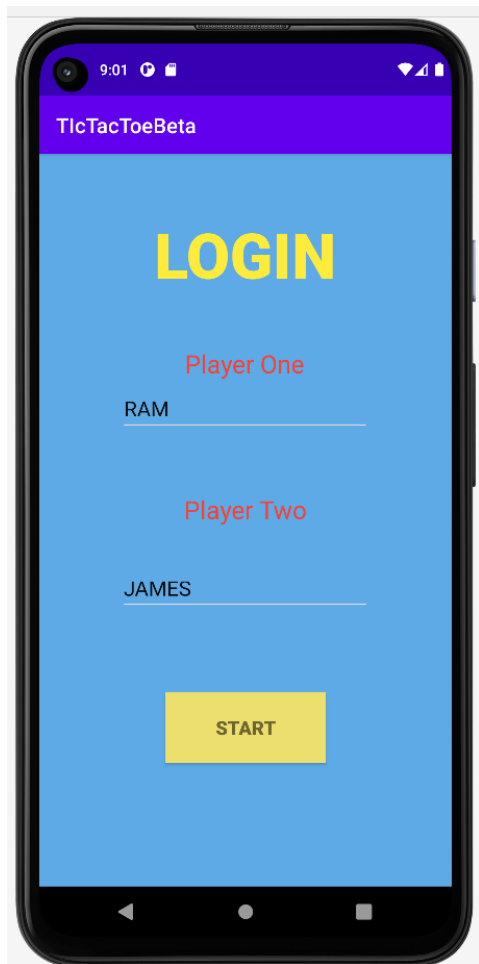
TIC TAC TOE

SCREENSHOTS

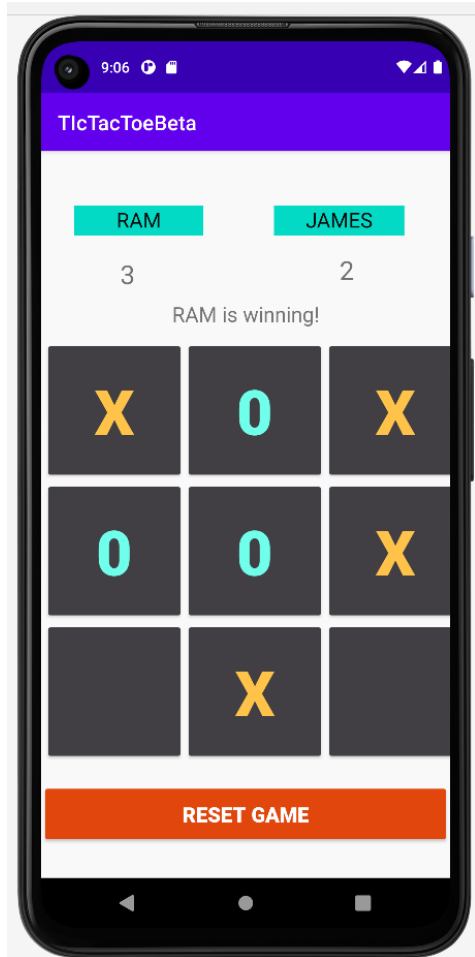1) INTRODUCTION PAGE

2) LOGIN PAGE

3) GAME PAGE

CODE

1) INTRODUCTION PAGE

Activit_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
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="#5EAAE6"
    tools:context=".MainActivity">
```

```xml
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:fontFamily="cursive"
    android:text="Tic Tac Toe"
    android:textColor="#FFEB3B"
    android:textSize="60sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.06" />

<ImageView
    android:id="@+id/imageView"
    android:layout_width="317dp"
    android:layout_height="209dp"
    android:background="@drawable/border"
    android:outlineProvider="paddedBounds"
    app:layout_constraintBottom_toTopOf="@+id/textView3"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
    app:layout_constraintVertical_bias="0.492"
    app:srcCompat="@drawable/images" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:lineSpacingExtra="8sp"
    android:paddingLeft="10dp"
    android:paddingRight="10dp"
    android:text="Tic-Tac-Toe or Xs and Os is a game for two players who take turns
marking the spaces in a three-by-three grid with X or O. The player who succeeds in
placing three of their marks in a horizontal, vertical, or diagonal row is the winner. "
    android:textAlignment="center"
    android:textColor="#FFEB3B"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.66" />

<Button
    android:id="@+id/btn1"
    android:layout_width="138dp"
    android:layout_height="64dp"
```

```xml
        android:text="Let's Play !"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView3"
        app:layout_constraintVertical_bias="0.321" />
</android.support.constraint.ConstraintLayout>
```

Main_Activity.java

```java
package com.example.tictactoebeta;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    private Button move;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        move=findViewById(R.id.btn1);
        move.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent it = new Intent(MainActivity.this,playerNames.class);
                startActivity(it);
            }
        });
    }
}
```

2) LOGIN PAGE

Activit_player_names.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
```

```xml
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="#5EAAE6"
    tools:context=".playerNames">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="sans-serif-black"
        android:text="LOGIN"
        android:textColor="#FFEB3B"
        android:textSize="60sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.089" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Player One"
        android:textColor="#F44336"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:layout_constraintVertical_bias="0.091" />

    <TextView
        android:id="@+id/textView6"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Player Two"
        android:textColor="#F44336"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.484" />

    <Button
        android:id="@+id/btn2"
        android:layout_width="153dp"
```

```xml
        android:layout_height="67dp"
        android:background="#FFF176"
        android:fontFamily="sans-serif-black"
        android:text="START"
        android:textAppearance="@style/TextAppearance.AppCompat.Medium"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.813" />

    <EditText
        android:id="@+id/PlayerOneName"
        android:layout_width="238dp"
        android:layout_height="40dp"
        android:backgroundTint="#E3DDDD"
        android:ems="10"
        android:inputType="textPersonName"
        android:textColor="#0B0B0B"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.344" />

    <EditText
        android:id="@+id/PlayerTwoName"
        android:layout_width="239dp"
        android:layout_height="40dp"
        android:backgroundTint="#E8DDDD"
        android:ems="10"
        android:inputType="textPersonName"
        android:textColor="#070707"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.604" />
</android.support.constraint.ConstraintLayout>
```

Player_names.java

```java
package com.example.tictactoebeta;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
```

```java
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class playerNames extends AppCompatActivity {
    public Button jtbn2;
    public EditText p1n, p2n;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_player_names);
        p1n = (EditText) findViewById(R.id.PlayerOneName);
        p2n = (EditText) findViewById(R.id.PlayerTwoName);
        jtbn2 = (Button) findViewById(R.id.btn2);
        jtbn2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String pName1 = p1n.getText().toString();
                String pName2 = p2n.getText().toString();
                if(p1n.getText().toString().equals("")){
                    Toast.makeText(playerNames.this, "Enter Player Names!!",
Toast.LENGTH_SHORT).show();
                }
                else if(p2n.getText().toString().equals("")){
                    Toast.makeText(playerNames.this, "Enter Player Names!!",
Toast.LENGTH_SHORT).show();
                }
                else {
                    Intent it = new Intent(playerNames.this, tttGame.class);
                    it.putExtra("p1n1", pName1);
                    it.putExtra("p2n2", pName2);
                    startActivity(it);
                }
            }
        });
    }
}
```

3) GAME PAGE

Activit_ttt_game.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
```

```xml
    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="#F9F9FA"
    tools:context=".MainActivity"
    tools:layout_editor_absoluteX="-3dp"
    tools:layout_editor_absoluteY="0dp">

    <TextView
        android:id="@+id/playerOne"
        android:layout_width="124dp"
        android:layout_height="29dp"
        android:layout_marginLeft="32dp"
        android:layout_marginTop="52dp"
        android:background="@color/teal_200"
        android:textAlignment="center"
        android:textColor="#0C0C0C"
        android:textSize="20sp"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/playerOneScore"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="44dp"
        android:layout_marginTop="20dp"
        android:text="0"
        android:textSize="25sp"
        app:layout_constraintLeft_toLeftOf="@+id/playerOne"
        app:layout_constraintTop_toBottomOf="@+id/playerOne" />

    <TextView
        android:id="@+id/playerTwo"
        android:layout_width="125dp"
        android:layout_height="29dp"
        android:layout_marginTop="52dp"
        android:layout_marginRight="44dp"
        android:background="@color/teal_200"
        android:textAlignment="center"
        android:textColor="#090909"
        android:textSize="20sp"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/playerTwoScore"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:layout_marginRight="48dp"
```

```xml
        android:text="0"
        android:textSize="25sp"
        app:layout_constraintRight_toRightOf="@+id/playerTwo"
        app:layout_constraintTop_toBottomOf="@+id/playerTwo" />

    <TextView
        android:id="@+id/playerStatus"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/playerOneScore" />

    <Button
        android:id="@+id/btn_0"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:layout_marginLeft="3dp"
        android:layout_marginTop="12dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/playerStatus" />

    <Button
        android:id="@+id/btn_2"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toRightOf="@id/btn_1"
        app:layout_constraintTop_toTopOf="@+id/btn_1" />

    <Button
        android:id="@+id/btn_3"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toLeftOf="@id/btn_0"
        app:layout_constraintTop_toBottomOf="@+id/btn_0" />

    <Button
```

```xml
        android:id="@+id/btn_6"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toLeftOf="@id/btn_3"
        app:layout_constraintTop_toBottomOf="@+id/btn_3" />

    <Button
        android:id="@+id/btn_7"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toRightOf="@id/btn_6"
        app:layout_constraintTop_toTopOf="@+id/btn_6" />

    <Button
        android:id="@+id/btn_8"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toRightOf="@id/btn_7"
        app:layout_constraintTop_toTopOf="@+id/btn_7" />

    <Button
        android:id="@+id/btn_5"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toRightOf="@id/btn_4"
        app:layout_constraintTop_toTopOf="@+id/btn_4" />

    <Button
        android:id="@+id/btn_4"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toRightOf="@id/btn_3"
        app:layout_constraintTop_toTopOf="@+id/btn_3" />
```

```xml
    <Button
        android:id="@+id/btn_1"
        android:layout_width="135dp"
        android:layout_height="135dp"
        android:backgroundTint="#413F43"
        android:textColor="#ffffff"
        android:textSize="60sp"
        android:textStyle="bold"
        app:layout_constraintLeft_toRightOf="@id/btn_0"
        app:layout_constraintTop_toTopOf="@+id/btn_0" />

    <Button
        android:id="@+id/resetGame"
        android:layout_width="match_parent"
        android:layout_height="60dp"
        android:layout_marginTop="20dp"
        android:backgroundTint="#E1470D"
        android:text="Reset Game"
        android:textColor="#ffffff"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toBottomOf="@id/btn_6" />
</android.support.constraint.ConstraintLayout>
```

TttGame.java

```java
package com.example.tictactoebeta;

import android.graphics.Color;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

public class tttGame extends AppCompatActivity implements View.OnClickListener{

    public TextView player1,player2;public TextView playerOneScore;
    public TextView playerTwoScore;
    public TextView playerStatus;
    private Button[] buttons=new Button[9];
    private Button resetGame;
    public int playerOneScoreCount,playerTwoScoreCount,rountCount;
    boolean activePlayer;
```

```java
// pl=>0
// p2=>1
// empty=>2
int[] gameState={2,2,2,2,2,2,2,2,2};
int[][]winningPositions={
        {0,1,2},{3,4,5},{6,7,8},// rows
        {0,3,6},{1,4,7},{2,5,8},// columns
        {0,4,8},{2,4,6}// cross} ;
};

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_ttt_game);
    player1=(TextView) findViewById(R.id.playerOne);
    player2=(TextView) findViewById(R.id.playerTwo);
    playerOneScore=(TextView)findViewById(R.id.playerOneScore);
    playerTwoScore=(TextView)findViewById(R.id.playerTwoScore);
    playerStatus=(TextView)findViewById(R.id.playerStatus);
    resetGame=(Button)findViewById(R.id.resetGame);

    String user1=getIntent().getStringExtra("p1n1");
    String user2=getIntent().getStringExtra("p2n2");

    player1.setText(user1);
    player2.setText(user2);

    for(int i=0;i<buttons.length;i++){
        String buttonID="btn_"+i;
        int resourceID=getResources().getIdentifier(buttonID,"id",getPackageName());
        buttons[i]=(Button)findViewById(resourceID);
        buttons[i].setOnClickListener(this);
    }
    rountCount=0;
    playerOneScoreCount=0;
    playerTwoScoreCount=0;
    activePlayer=true;

}
@Override
public void onClick(View v){
    if(!((Button)v).getText().toString().equals("")){
        return;
    }
    String buttonID=v.getResources().getResourceEntryName(v.getId());// btn_2
    int gameStatePointer = Integer.parseInt(buttonID.substring(buttonID.length()-
1,buttonID.length()));//2
    if(activePlayer){
        ((Button)v).setText("X");
        ((Button)v).setTextColor(Color.parseColor("#FFC34A"));
        gameState[gameStatePointer]=0;
    }else{
        ((Button)v).setText("0");
```

```java
            ((Button)v).setTextColor(Color.parseColor("#70FFEA"));
            gameState[gameStatePointer]=1;
        }
        rountCount ++;
        String user1=getIntent().getStringExtra("p1n1");
        String user2=getIntent().getStringExtra("p2n2");
        if(checkWinner()){
            if(activePlayer){
                playerOneScoreCount ++;
                updatePlayerScore();
                Toast.makeText(this,user1+" Won!!",Toast.LENGTH_SHORT).show();
                playAgain();
            }else{
                playerTwoScoreCount++;
                updatePlayerScore();
                Toast.makeText(this,user2+" Won!!",Toast.LENGTH_SHORT).show();
                playAgain();
            }
        }else if(rountCount==9){
            playAgain();
            Toast.makeText(this,"Game Draw try again!!",Toast.LENGTH_SHORT).show();
        }else{
            activePlayer=!activePlayer;
        }
        if (playerOneScoreCount> playerTwoScoreCount){
            playerStatus.setText(user1+" is winning!");
        }else if (playerOneScoreCount<playerTwoScoreCount){
            playerStatus.setText(user2 +" is winning!");
        }else {
            playerStatus.setText("");
        }
        resetGame.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                playAgain();
                playerOneScoreCount=0;
                playerTwoScoreCount=0;
                playerStatus.setText("");
                updatePlayerScore();
            }
        });
    }

    public boolean checkWinner(){
        boolean winnerResult=false;

        for(int[]winningPosion:winningPositions){
            if(gameState[winningPosion[0]]== gameState[winningPosion[1]]&&
                    gameState[winningPosion[1]]== gameState[winningPosion[2]]&&
                    gameState[winningPosion[0]]!=2){
                return    winnerResult=true;
            }
        }
```

```java
        return winnerResult;
    }
    public void updatePlayerScore(){
        playerOneScore.setText(Integer.toString(playerOneScoreCount));
        playerTwoScore.setText(Integer.toString(playerTwoScoreCount));
    }
    public void playAgain(){
        rountCount=0;
        activePlayer=true;
        for(int i=0;i<buttons.length;i++){
            gameState[i]=2;
            buttons[i].setText("");
        }}
}
```