VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM-590014

A Mobile Application Development Laboratory (18CSMPL68)

Mini-Project Report

On

"TIC-TAC-TOE APP"

A Mini-project report submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Engineering in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum.

Submitted by:

JEEVAN RAJU(1DT19CS061)

KHAJA MOINUDEEN A K (1DT19CS068)

MOHAMMED SAIF(1DT19CS082)

Under the Guidance of:

Dr. KEERTHANA SHANKAR

Asst. Prof, Dept. of CSE

Prof. CHAITRA Y R

Asst. Prof, Dept of CSE

Department of Computer Science and Engineering

(Accredited by NBA, NAAC A+, New Delhi)

DAYANANDA SAGAR ACADEMY OF TECHNOLOGY AND MANAGEMENT

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DAYANADA SAGAR ACADEMY OF TECHNOLOGY AND MANAGEMENT,

Kanakapura Road, Udayapura, Bangalore -560 082

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that the Mini-Project on Mobile Application Development Laboratory (18CSMPL68) entitled **"TIC-TAC-TOE APP"** has been successfully carried out by **JEEVAN RAJU(1DT19CS061), KHAJA MOINUDEEN AK(1DT19CS068) and MOHAMMED SAIF(1DT19CS082) a** bonafide students of **Dayananda sagar academy of technology and management** in partial fulfillment of the requirements for the award of degree in **Bachelor of Engineering in Computer Science and Engineering** of **Visvesvaraya Technological University, Belgaum** during academic year 2021-2022. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The mini project report has been approved as it satisfies the academic requirements in respect of project work for the said degree.

Signature of project guide
Dr. Keerthana Shankar
Asst. Professor Dept. of CSE

Signature of the project guide
Prof. Chaitra Y R
Asst. Professor Dept. of CSE

Examiners:
1.
2.

Dr. C Nandini
Vice Principal & HOD, Dept. of CSE

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It gives us immense pleasure to present before you our project titled **"TIC-TAC-TOE APP"**, I feel that it is our duty to acknowledge the help rendered to us by various persons.

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Thanking you all,

JEEVAN RAJU (1DT19CS061)
KHAJA MOINUDEEN AK (1DT19CS068)
AND
MOHAMMED SAIF (1DT16CS082)

ABSTRACT

In recent years, the emergence of smart phones has changed the definition of mobile phones. Phone is no longer just a communication tool, but also an essential part of the people's communication and daily life. Various applications added unlimited fun for people's lives. It is certain that the future of the network will be the mobile terminal. Now the Android system in the electronics market is becoming more and more popular, especially in the smartphone market. Because of the open source, some of the development tools are free, so there are plenty of applications generated. So our aim is to develop an android application to give information about the details of International Conference on Image Information Processing and to develop a media player which can run almost any media content in any form. The primary purpose of the Tic-Tac-Toe application is to play this multiplayer game on any android device.

The main elements of this app are:

- An overview of the Tic-Tac-Toe game and also explains the rules of the game.
- Personalisation of the game by logging in with the player names.
- The gaming interface which consists of a 3X3 grid, which can be filled by ‘X’/’O’
- By the two players. The score gets automatically updated when a player wins a round.
- There is also a reset button to clear any previous scores.

CONTENTS

SL.NO	TOPICS	PAGE NO
1	INTRODUCTION	1
	1.1 Tic-Tac-Toe Application	1
	1.2 Pseudocode	1
2	REQUREMENT SPECIFICATION	2
	2.1 Hardware Requirements	2
	2.2 Software Requirements	2
3	IMPLEMENTATION	3
	3.1 Creating The Application	3
	3.2 About The Application	3
	3.3 Flow Of The Application-Description	4
4	SOURCE CODE	5
5	SNAPSHOTS	15
	5.1 Introduction Page	15
	5.2 Login Page	16
	5.3 Game Page	17
	CONCLUSION	18
	BIBLIOGRAPHY	19

CHAPTER 1

INTRODUCTION

1.1 Introduction to Tic-Tac-Toe

Tic-tac-toe is a simple, two-player game that, if played optimally by both players, will always result in a tie. The game is also called noughts and crosses or Xs and Os.Tic-tac-toe is a game that is traditionally played by being drawn on paper, and it can be played on a computer or on a variety of media. Other games, such as Connect 4, are based on this classic.

History of Tic-Tac-Toe:

An early variation of the game was played in the Roman Empire, around the 1st century B.C. It was called "terni lapilli," which means "three pebbles at a time." The game's grid markings have been found chalked all over Roman ruins. Evidence of the game was also found in ancient Egyptian ruins.The first print reference to "noughts and crosses," the British name for the game, appeared in 1864. The first print reference to a game called "tick-tack-toe" occurred in 1884 but referred to a children's game played on a slate.

Gameplay:

The goal of tic-tac-toe is to be the first player to get three in a row on a 3-by-3 grid. In a 3-by-3 grid game, the player who is playing "X" always goes first. Players alternate placing Xs and Os on the board until either player has three in a row, horizontally, vertically, or diagonally or until all squares on the grid are filled. If a player is able to draw three Xs or three Os in a row, then that player wins. If all squares are filled and neither player has made a complete row of Xs or Os, then the game is a draw.One of the game's best strategies involves creating a "fork," which is placing your mark in such a way that you have the opportunity to win two ways on your next turn. Your opponent can only block one, thereby, you can win after that.

1.2 PSEUDOCODE :

1.Create a structure to store and represent the state of the board.

2.Welcome the players.

3.Get the user's move in the form of some input.

4.Make sure their move is valid.

5.Check to see if the game has been won or came to a draw.

6.Change the player turn and let the next player make a move.

7.Repeat until the game is over.

CHAPTER 2

REQUIREMENTS

The requirement specification is a comprehensive description of the software and the hardware requirements required to run the project successfully

2.1 Hardware Requirements

- Display: Monitor.
- Input: Keyboard/mouse.
- Memory: 4GB
- Processor: intel/AMD processor.
- RAM: 8GB.

2.2 Software Requirements

- Operating system: WINDOWS 10
- Language used: Xml and Java.
- Software: Android Studio.

Requirement Analysis of System

The feasibility analysis: This section verified that it is feasible to add Tic-Tac-Toe customization on the Android system from the aspects of economic, technical and social feasibility

Economic feasibility: Android Tic-Tac-Toe game app can be designed as long as a computer has the Android development and the application development of Android is free, if the User requires additional customization of the application a lot of research is required. Hence we have designed a game to suite a larger audience. Therefore, the whole process of development doesn't need to spend any money that is economic feasibility.

Technical feasibility: To design a Tic-Tac-Toe application which meets the basic requirements:

Java: Knowledge of Java Programming is required to develop the android application in Android Studio. Java programming plays a very important role because we will develop our applications in using it

XML: XML is the second important part of our android application. It will be used for the development of the user interface for the application

Android Studio: Android Studio is the backbone of our application, as we will develop our app using Android Studio.

CHAPTER 3

IMPLEMENTATION

3.1 Creating the Application

Games are a part of every person's life. No matter what your mood is, you have a game to sustain that mood. If you wish to play the Tic-Tac-Toe game on Android devices, you need an app. So, through this article, we will try to build our Tic-Tac-Toe app using Android.

3.2 About the Application

The Tic-Tac-Toe app that we will develop in this article would allow the users to play the game on their Android device. You can play this multiplayer game and enjoy the experience. Let's see the exciting features that you get along with this app.

3.3 Flow of the Application

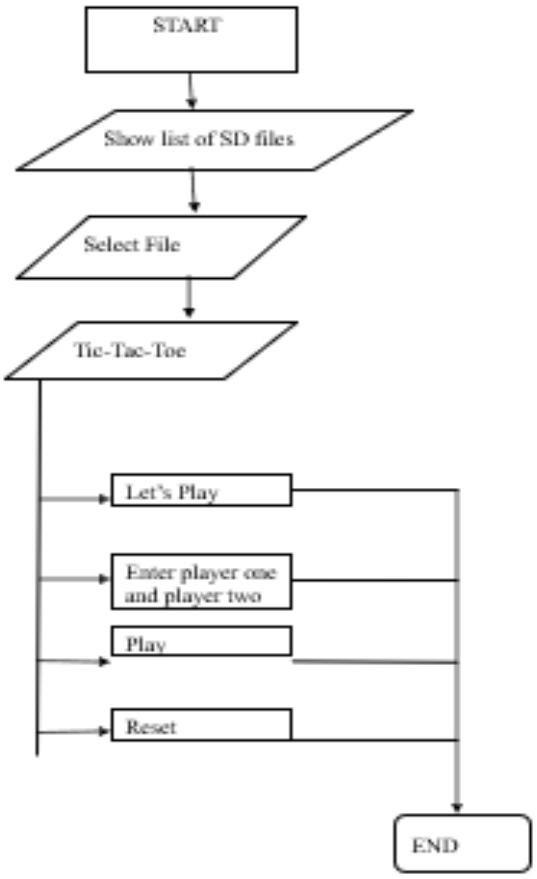


Figure Description

- **User selects "Tic-Tac-Toe" Application**
- **Introduction Screen –**It is the home screen of the app which explains the rules of the game, user clicks on "Let's play!"
- **Login Screen –**Application takes names of "Player 1" and "Player 2". User clicks on "START".
- **VALIDATION** : Name cannot be left blank.
- **Game Screen –**It is a game interface that includes a 3X3 grid. Each player alternatively selects one of the squares to place their X/O in a strategic position in order to win the round.
- **Reset-** At any point of game user can reset the scores and the grid.

CHAPTER 4

SOURCE CODE

Android Manifest – The AndroidManifest.xml file consists of all the required permissions and declarations essential for the Tic-Tac-Toe app to run smoothly.

Code:

Activity_main.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">
<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“
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

```
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);
        }});}}
```

LOGIN PAGE

Activit_player_names.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=".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" />
```

```
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);
            }
         }
      });
   }
}
```

GAME PAGE

Activit_ttt_game.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="#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" />
```

```
 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" />
```

```
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: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" />
        android:id="@+id/btn_8"
<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"
```

```
<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

```
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;
```

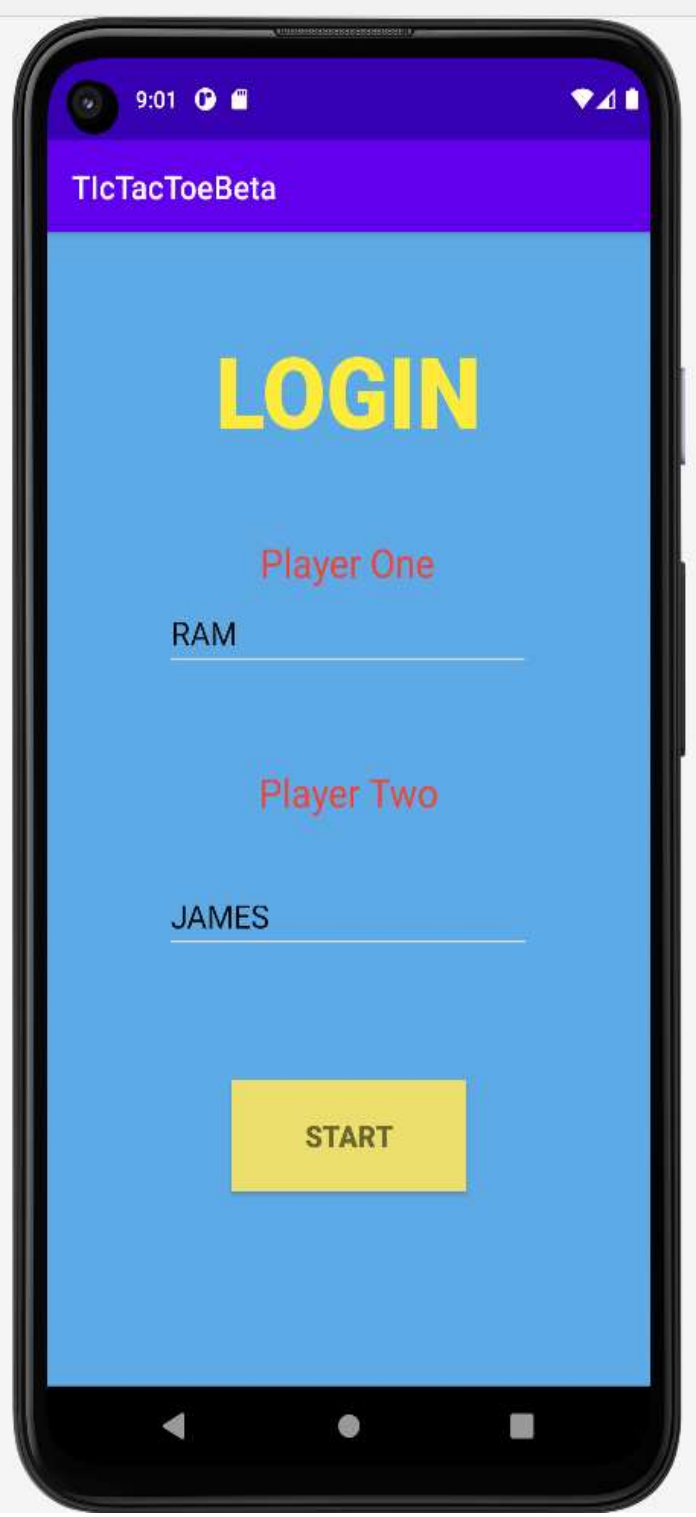
```
int[] gameState={2,2,2,2,2,2,2,2,2};
   int[][]winningPositions={
         {0,1,2},{3,4,5},{6,7,8},// rows
         {0,3,6},{1,4,7},{2,5,8},// columns
         {0,4,8},{2,4,6}// cross} ;
};

   @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.playerTwoScor
e);
      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",getPacka
geName());
         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");
```

```
((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;
          }} return winnerResult;}
   public void
updatePlayerScore(){playerOneScore.setText(Integer.toString(playerOne
ScoreCount));
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("");
       }}}
```

CHAPTER 5

5. SNAPSHOTS

5.1 INTRODUCTION PAGE



5.2 LOGIN PAGE


9:06
TIcTacToeBeta
RAM
JAMES
3
2
RAM is winning!
X
0
X
0
0
X
X
RESET GAME

5.3 GAME PAGE

CONCLUSION AND FUTURE WORK

Through the development of Tic-Tac-Toe app on Android platform, we get a clear understanding of overall process of the system. The core part of the Tic-Tac-Toe app is mainly composed of main interface that is a 3X3 grid and score counter.

Tic-Tac-Toe app realized the basic function of the game: explanation of game rules, entering player names and finally playing the game itself.

This development implicated the popular mobile terminal development technology. This is the combination management of Java language in the open source mobile platform.

This design of Tic-Tac-Toe app based on Android system requires elaborate design framework, by adopting ANDROID STUDIO 3.1.2 + Java language as technical support of this system, with the Android plug-in tools, and combination of Latest Android SDK version lead to the comprehensive and smoothly design and development of the mobile termina.

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