OBJECT ORIENTED PROGRAMMING WITH JAVA | 2150704

Problem Statement	Tic-Tac-Toe
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Source Code:

```
package com.rpm.ruchitesh.onlinetictactoe;


import android.content.Intent;

import android.support.v7.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;


public class MainPage extends AppCompatActivity {


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main_page);

    }

    void goNext(View v){

        boolean choice=true;

        if(v.getId()==R.id.po1)

            choice=true;

        if(v.getId()==R.id.po2)
```

```java
        choice=false;

     Intent i = new Intent(this, MainActivity.class);

     i.putExtra("computerPlay",choice);

     startActivity(i);


  }

}
package com.rpm.ruchitesh.onlinetictactoe;


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;


import java.util.ArrayList;


public class MainActivity extends AppCompatActivity {

   private static int turn=0;

   private static boolean won=false;

   boolean gameWithComputer=true;

   ArrayList<Integer> player1=new ArrayList<>();

   ArrayList<Integer> player2=new ArrayList<>();

   TextView resultbox;

   @Override

   protected void onCreate(Bundle savedInstanceState) {
```

```java
    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    gameWithComputer=getIntent().getExtras().getBoolean("computerPlay");

    reset(null);


}


void play(Button selected){

    if(turn%2==0){

        selected.setBackgroundColor(getResources().getColor(R.color.coral));

        selected.setText("X");

        selected.setEnabled(false);

    }

    else{

        selected.setBackgroundColor(getResources().getColor(R.color.cream));

        selected.setText("O");

        selected.setEnabled(false);

    }

    checkWinner();

    if(turn==9&&won==false) {

        resultbox.setText("Draw!!");

        Toast.makeText(this,"Draw!!",Toast.LENGTH_LONG).show();

    }

}

void autoPlay(Button selected){

    seleded.setBackgroundColor(getResources().getColor(R.color.cream));

    selected.setText("O");
```

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    selected.setEnabled(false);

    turn++;

    checkWinner();

    if(turn%2==0&&turn<9&&(!won)) {

        int id;

        id = (int) (Math.random() * 9) + 1;

        while (player1.contains(id)||player2.contains(id)){

            id = (int) (Math.random() * 9) + 1;

            //Toast.makeText(this, "new id : " + id, Toast.LENGTH_LONG).show();

        }

        //Toast.makeText(this, "" + id, Toast.LENGTH_LONG).show();

        addInTheList(id);

        Button button = (Button) findViewById(getResources().getIdentifier("b" + id, "id",

            this.getPackageName()));

        button.setBackgroundColor(getResources().getColor(R.color.coral));

        button.setText("X");

        button.setEnabled(false);

        checkWinner();

    }

    if(turn==10&&won==false) {

        resultbox.setText("Draw!!");

        Toast.makeText(this, "Draw!!", Toast.LENGTH_LONG).show();

    }


}

void reset(View view){

    resultbox=(TextView)findViewById(R.id.result);
```

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```java
        resultbox.setText("");

        for (int i = 1; i <= 9; i++)

        {

            Button button = (Button) findViewById(getResources().getIdentifier("b" + i, "id",

                    this.getPackageName()));

            button.setEnabled(true);

            button.setText("");

            button.setBackgroundColor(getResources().getColor(R.color.btnclr));

        }

        turn=0;

        won=false;

        player1.clear();

        player2.clear();


    }

    void addInTheList(int bid){

        if((turn&1)==1){

//          Toast.makeText(this,"added into player1",Toast.LENGTH_LONG).show();

            player1.add(bid);

        }

        else{

            player2.add(bid);

        }

    }

    void disableAll(){

        for (int i = 1; i <= 9; i++){

            Button button = (Button) findViewById(getResources().getIdentifier("b" + i, "id",
```

```java
        this.getPackageName()));

    button.setEnabled(false);

  }

}

void checkWinner(){

if((player1.contains(1)&&player1.contains(2)&&player1.contains(3))||(player1.contains(1)&
&player1.contains(4)&&player1.contains(7))||(player1.contains(1)&&player1.contains(5)&&
player1.contains(9))

||(player1.contains(2)&&player1.contains(5)&&player1.contains(8))||(player1.contains(3)&&
player1.contains(6)&&player1.contains(9))||(player1.contains(3)&&player1.contains(5)&&pl
ayer1.contains(7))

||(player1.contains(4)&&player1.contains(5)&&player1.contains(6))||(player1.contains(7)&&
player1.contains(8)&&player1.contains(9))) {

    Toast.makeText(this, "Player1 wins!", Toast.LENGTH_LONG).show();

    resultbox.setText("Player1 wins!");

    disableAll();

    won=true;

  }

  else
if((player2.contains(1)&&player2.contains(2)&&player2.contains(3))||(player2.contains(1)&
&player2.contains(4)&&player2.contains(7))||(player2.contains(1)&&player2.contains(5)&&
player2.contains(9))

||(player2.contains(2)&&player2.contains(5)&&player2.contains(8))||(player2.contains(3)&&
player2.contains(6)&&player2.contains(9))||(player2.contains(3)&&player2.contains(5)&&pl
ayer2.contains(7))

||(player2.contains(4)&&player2.contains(5)&&player2.contains(6))||(player2.contains(7)&&
player2.contains(8)&&player2.contains(9))) {

    Toast.makeText(this, "Player2 wins!", Toast.LENGTH_LONG).show();
```

```java
        resultbox.setText("Player2 wins!");

        disableAll();

        won=true;

    }

  }

  void makeChange(View view){

    Button selected = (Button) view;

    turn++;

    switch (selected.getId()){

      case R.id.b1:
//          //Toast.makeText(this,"b1 selected",//Toast.LENGTH_LONG).show();

        addInTheList(1);

        break;

      case R.id.b2:

        //Toast.makeText(this,"b2 selected",//Toast.LENGTH_LONG).show();

        addInTheList(2);

        break;

      case R.id.b3:

        //Toast.makeText(this,"b3 selected",//Toast.LENGTH_LONG).show();

        addInTheList(3);

        break;

      case R.id.b4:

        addInTheList(4);

        //Toast.makeText(this,"b4 selected",//Toast.LENGTH_LONG).show();

        break;

      case R.id.b5:

        addInTheList(5);
```

```java
            //Toast.makeText(this,"b5 selected",//Toast.LENGTH_LONG).show();

            break;

        case R.id.b6:

            addInTheList(6);

            //Toast.makeText(this,"b6 selected",//Toast.LENGTH_LONG).show();

            break;

        case R.id.b7:

            addInTheList(7);

            //Toast.makeText(this,"b7 selected",//Toast.LENGTH_LONG).show();

            break;

        case R.id.b8:

            addInTheList(8);

            //Toast.makeText(this,"b8 selected",//Toast.LENGTH_LONG).show();

            break;

        case R.id.b9:

            addInTheList(9);

            //Toast.makeText(this,"b9 selected",//Toast.LENGTH_LONG).show();

            breakl

    }

    if(!gameWithComputer)

        play(selected);

    else

        autoPlay(selected);

    //Toast.makeText(this,"Last "+turn,Toast.LENGTH_LONG).show();


  }

}
```

Output:

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