

## XML - activity\_start.xml -72 lines

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <!--Background-->
    <ImageView
        android:id="@+id/picture"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="center"
        android:src="@drawable/back" />
    <!--Sets linear layout for whole screen-->
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_gravity="center_horizontal"
        android:orientation="vertical">

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="center_horizontal"
            android:orientation="horizontal"
            android:paddingTop="150dp"
            android:paddingBottom="100dp">

                <ImageView
                    android:layout_width="100dp"
                    android:layout_height="wrap_content"
                    android:src="@drawable/opic" />

                <TextView
                    android:layout_width="230dp"
                    android:layout_height="wrap_content"
                    android:layout_gravity="center_horizontal"
                    android:text="Easter Switch Tic Tac Toe"
                    android:textColor="@android:color/holo_green_dark"
                    android:textSize="35dp"
                    android:textStyle="bold" />

                <ImageView
                    android:layout_width="100dp"
                    android:layout_height="wrap_content"
                    android:src="@drawable/xpic" />
            </LinearLayout>
        <!--Sets linear layout to horizontal-->
        <LinearLayout
            android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:orientation="horizontal">

        <Button
            android:id="@+id/send"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:background="#FFC0CB"
            android:onClick="toSecond"
            android:text="Begin" />

        <Button
            android:id="@+id/options"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:background="#FFC0CB"
            android:onClick="Options"
            android:text="Settings" />
    </LinearLayout>
</LinearLayout>
</RelativeLayout>

```

#### Java Code - StartActivity.java - 56 lines

```

package com.example.bovelltictactoe;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;

import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;

//Name: James Bovell
//Date: March 23 2020
//Purpose Unit 2 project- Switch Tic Tac Toe
public class StartActivity extends AppCompatActivity {
    int whichBack = 1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
    }
}

```

```

setContentView(R.layout.activity_start);
try {
    FileInputStream in = openFileInput("icon.txt");
    whichBack = in.read();
    in.close();
} catch (FileNotFoundException e) {
    e.printStackTrace();
} catch (IOException e) {
    e.printStackTrace();
}
//Update screen
ImageView picture = (ImageView) findViewById(R.id.picture);
if (whichBack == 1)
    picture.setImageResource(R.drawable.back);
else if (whichBack == 2)
    picture.setImageResource(R.drawable.back2);
else
    picture.setImageResource(R.drawable.back3);

}

//Onclick to go to the instructions screen
public void toSecond(View view) {
    Intent i = new Intent(this, InstructionsActivity.class);
    startActivity(i);
}

//Onclick to go back to the options screen
public void Options(View view) {
    Intent i = new Intent(this, Options.class);
    startActivity(i);
}
}

```

XML- activity\_instructions.xml - 72 lines

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

```

```
<!--Background-->
```

```
<ImageView
```

```
    android:id="@+id/picture"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
```

```
    android:scaleType="center"
```

```
    android:src="@drawable/back" />
```

```
<!--Sets linear layout for whole screen-->
```

```
<LinearLayout
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
```

```
    android:gravity="center_horizontal"
```

```
    android:orientation="vertical">
```

```
<!--Sets linear layout to horizontal-->
```

```
<LinearLayout
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:gravity="center_horizontal"
```

```
    android:orientation="horizontal">
```

```
<ImageView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:src="@drawable/opic" />
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:text="Instructions"
```

```
    android:textColor="@android:color/holo_green_dark"
```

```
    android:textSize="40dp"
```

```
    android:textStyle="bold" />
```

```
<ImageView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:src="@drawable/xpic" />
```

```
</LinearLayout>
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_gravity="center_horizontal"
```

android:text="The object of Tic Tac Toe is to get three of the same bunnies in a row. However, this is Switch Tic Tac Toe! This means that up to three times, you can switch your opponents colour bunny to your colour bunny."

```
    android:textColor="@android:color/holo_green_dark"
```

```
    android:textSize="20dp"
```

```
    android:textStyle="bold" />
```

```

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    android:text="In order to win, you need same colour bunny three times in a row vertical, horizontal
or diagonal."
    android:textColor="@android:color/holo_green_dark"
    android:textSize="20dp"
    android:textStyle="bold" />

<Button
    android:id="@+id/send"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    android:layout_marginBottom="20dp"
    android:background="#FFC0CB"
    android:onClick="toGame"
    android:text="Play" />
</LinearLayout>
</RelativeLayout>

```

## Java Code - InstructionsActivity.java - 51 lines

```

package com.example.bovelltictactoe;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;

import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;

//Name: James Bovell
//Date: March 23 2020
//Purpose Unit 2 project- Switch Tic Tac Toe
public class InstructionsActivity extends AppCompatActivity {
    //For background
    int whichBack = 1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
    }
}

```

```

setContentView(R.layout.activity_instructions);
//Read in the preference
try {
    FileInputStream in = openFileInput("icon.txt");
    whichBack = in.read();
    in.close();
} catch (FileNotFoundException e) {
    e.printStackTrace();
} catch (IOException e) {
    e.printStackTrace();
}
//Update screen
ImageView picture = (ImageView) findViewById(R.id.picture);
if (whichBack == 1)
    picture.setImageResource(R.drawable.back);
else if (whichBack == 2)
    picture.setImageResource(R.drawable.back2);
else
    picture.setImageResource(R.drawable.back3);

}

//Onclick to go to the game screen
public void toGame(View view) {
    Intent i = new Intent(this, MainActivity.class);
    startActivity(i);
}
}

```

XML- activity\_main.xml - 164 lines

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <!--Background-->
    <ImageView
        android:id="@+id/picture"
        android:layout_width="match_parent"
        android:layout_height="match_parent"

```

```

        android:scaleType="center"
        android:src="@drawable/back" />
<!--Sets linear layout for whole screen-->
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:text="Easter Tic Tac Toe"
        android:textColor="@android:color/holo_green_dark"
        android:textSize="40dp"
        android:textStyle="bold" />
    <!--Sets linear layout to horizontal-->
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:orientation="horizontal">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:padding="5dp"
            android:text="Current turn:"
            android:textColor="@android:color/holo_green_dark"
            android:textSize="20dp"
            android:textStyle="bold" />

        <ImageView
            android:id="@+id/turn"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@drawable/oturn" />
    </LinearLayout>
    <!--Sets grid layout for tic tac toe grid-->
    <GridLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:layout_marginTop="40dp"
        android:columnCount="3"
        android:rowCount="3">

        <ImageView
            android:id="@+id/a"

```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:onClick="aClick"
android:src="@drawable/blank" />
```

#### <ImageView

```
android:id="@+id/b"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:onClick="bClick"
android:src="@drawable/blank" />
```

#### <ImageView

```
android:id="@+id/c"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:onClick="cClick"
android:src="@drawable/blank" />
```

#### <ImageView

```
android:id="@+id/d"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:onClick="dClick"
android:src="@drawable/blank" />
```

#### <ImageView

```
android:id="@+id/e"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:onClick="eClick"
android:src="@drawable/blank" />
```

#### <ImageView

```
android:id="@+id/f"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:onClick="fClick"
android:src="@drawable/blank" />
```

#### <ImageView

```
android:id="@+id/g"
android:layout_width="wrap_content"
```



```
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:onClick="gClick"
    android:src="@drawable/blank" />
```

#### <ImageView

```
    android:id="@+id/h"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:onClick="hClick"
    android:src="@drawable/blank" />
```

#### <ImageView

```
    android:id="@+id/i"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:onClick="iClick"
    android:src="@drawable/blank" />
```

#### </GridLayout>

<!--Sets linear layout to horizontal-->

#### <LinearLayout

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    android:orientation="horizontal">
```

#### <Button

```
    android:id="@+id/reset"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="#FFC0CB"
    android:onClick="reset"
    android:text="reset" />
```

#### <Button

```
    android:id="@+id/send"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="#FFC0CB"
    android:onClick="backtoInstructions"
    android:text="Instructions" />
```

#### <Button

```
    android:id="@+id/options"
    android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="#FFC0CB"
        android:onClick="Options"
        android:text="Settings" />
    </LinearLayout>
</LinearLayout>
</RelativeLayout>

```

## Java Code- MainActivity.java - 345 lines

```

package com.example.bovelltictactoe;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.Toast;

import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;

//Name: James Bovell
//Date: March 23 2020
//Purpose Unit 2 project- Switch Tic Tac Toe
public class MainActivity extends AppCompatActivity {
    //For background
    int whichBack = 1;

    //Global Variables
    //creates the tic tac toe board
    int board[][] = new int[3][3];
    //Whose turn is it
    int turn = 1;
    //The count for how many switches
    int oneSwitch = 0;
    int twoSwitch = 0;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        //Read in the preference
        try {
            FileInputStream in = openFileInput("icon.txt");

```

```

        whichBack = in.read();
        in.close();
    } catch (FileNotFoundException e) {
        e.printStackTrace();
    } catch (IOException e) {
        e.printStackTrace();
    }
}

//Update screen
ImageView picture = (ImageView) findViewById(R.id.picture);
if (whichBack == 1)
    picture.setImageResource(R.drawable.back);
else if (whichBack == 2)
    picture.setImageResource(R.drawable.back2);
else
    picture.setImageResource(R.drawable.back3);

}

//OnClick to go back to the instructions screen
public void backtoInstructions(View view) {
    Intent i = new Intent(this, InstructionsActivity.class);
    startActivity(i);
}

//OnClick to go back to the options screen
public void Options(View view) {
    Intent i = new Intent(this, Options.class);
    startActivity(i);
}

//Places a bunny on the board and switches the turn to be ready for the other player
//parameter i is the place on the board that shows which bunny is placed to replace the egg
public void flip(ImageView i) {
    ImageView turnpic = (ImageView) findViewById(R.id.turn);
    if (turn == 1) {
        i.setImageResource(R.drawable.xpic);
        turn = 2;
        turnpic.setImageResource(R.drawable.xturn);
    } else {
        i.setImageResource(R.drawable.opic);
        turn = 1;
        turnpic.setImageResource(R.drawable.oturn);
    }
}

//Each win condition possible. Diagonal horizontal or vertical in all directions
public void win() {
    int winner = 0;
//Horizontal wins

```

```

        if (board[0][0] == board[0][1] && board[0][0] == board[0][2] && board[0][0] != 0)
            winner = board[0][0];
        else if (board[1][0] == board[1][1] && board[1][0] == board[1][2] && board[1][0] != 0)
            winner = board[1][0];
//TO DO: Complete the other 7 winning conditions
        else if (board[2][0] == board[2][1] && board[2][0] == board[2][2] && board[2][0] != 0)
            winner = board[2][0];
//Vertical wins
        else if (board[0][0] == board[1][0] && board[0][0] == board[2][0] && board[0][0] != 0)
            winner = board[0][0];
        else if (board[0][1] == board[1][1] && board[0][1] == board[2][1] && board[0][1] != 0)
            winner = board[0][1];
        else if (board[0][2] == board[1][2] && board[0][2] == board[2][2] && board[0][2] != 0)
            winner = board[0][2];
//Diagonal wins
        else if (board[0][0] == board[1][1] && board[1][0] == board[2][2] && board[0][2] != 0)
            winner = board[1][1];
        else if (board[0][2] == board[1][1] && board[1][1] == board[2][0] && board[0][2] != 0)
            winner = board[0][2];
//cat's game- a tie
        else if (board[0][0] != 0 && board[0][1] != 0 && board[0][2] != 0 &&
            board[1][0] != 0 && board[1][1] != 0 && board[1][2] != 0 &&
            board[2][0] != 0 && board[2][1] != 0 && board[2][2] != 0)
            winner = 3;
        if (winner == 1) {
            Toast.makeText(getApplicationContext(), "Blue Bunny Wins", Toast.LENGTH_SHORT).show();
        } else if (winner == 2) {
            Toast.makeText(getApplicationContext(), "Pink Bunny Wins", Toast.LENGTH_SHORT).show();
        } else if (winner == 3) {
            Toast.makeText(getApplicationContext(), "Cat's game", Toast.LENGTH_SHORT).show();
        }
    }
}

//For each onClick below. They all do the same thing
//If a move is valid:
//Changes the appropriate place in the global tracking array
//Flips the turn so the other player can play
//otherwise, displays an error saying place already taken
public void aClick(View view) {
    if (board[0][0] == 0) { //Space is empty
        ImageView i = (ImageView) findViewById(R.id.a);
        board[0][0] = turn;
        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.a);
        board[0][0] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2

```

```

        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.a);
        board[0][0] = turn;
        flip(i);
    } else { //Space is full, all switches used
        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}

```

```

public void bClick(View view) {
    if (board[0][1] == 0) {
        ImageView i = (ImageView) findViewById(R.id.b);
        board[0][1] = turn;
        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.b);
        board[0][1] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2
        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.b);
        board[0][1] = turn;
        flip(i);
    } else { //Space is full, all switches used
        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}

```

```

public void cClick(View view) {
    if (board[0][2] == 0) {
        ImageView i = (ImageView) findViewById(R.id.c);
        board[0][2] = turn;
        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.c);
        board[0][2] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2
        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.c);
        board[0][2] = turn;
        flip(i);
    } else { //Space is full, all switches used

```

```

        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}

public void dClick(View view) {
    if (board[1][0] == 0) {
        ImageView i = (ImageView) findViewById(R.id.d);
        board[1][0] = turn;
        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.d);
        board[1][0] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2
        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.d);
        board[1][0] = turn;
        flip(i);
    } else { //Space is full, all switches used
        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}

public void eClick(View view) {
    if (board[1][1] == 0) {
        ImageView i = (ImageView) findViewById(R.id.e);
        board[1][1] = turn;
        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.e);
        board[1][1] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2
        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.e);
        board[1][1] = turn;
        flip(i);
    } else { //Space is full, all switches used
        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}
}

```

```

public void fClick(View view) {
    if (board[1][2] == 0) {
        ImageView i = (ImageView) findViewById(R.id.f);
        board[1][2] = turn;
        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.f);
        board[1][2] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2
        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.f);
        board[1][2] = turn;
        flip(i);
    } else { //Space is full, all switches used
        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}

```

```

public void gClick(View view) {
    if (board[2][0] == 0) {
        ImageView i = (ImageView) findViewById(R.id.g);
        board[2][0] = turn;
        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.g);
        board[2][0] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2
        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.g);
        board[2][0] = turn;
        flip(i);
    } else { //Space is full, all switches used
        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}

```

```

public void hClick(View view) {
    if (board[2][1] == 0) {
        ImageView i = (ImageView) findViewById(R.id.h);
        board[2][1] = turn;
    }
}

```

```

        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.h);
        board[2][1] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2
        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.h);
        board[2][1] = turn;
        flip(i);
    } else { //Space is full, all switches used
        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}

```

```

public void iClick(View view) {
    if (board[2][2] == 0) {
        ImageView i = (ImageView) findViewById(R.id.i);
        board[2][2] = turn;
        flip(i);
    } else if (turn == 1 && oneSwitch < 3) { //Space is full, turn 1
        oneSwitch++;
        ImageView i = (ImageView) findViewById(R.id.i);
        board[2][2] = turn;
        flip(i);
    } else if (turn == 2 && twoSwitch < 3) { //Space is full turn 2
        twoSwitch++;
        ImageView i = (ImageView) findViewById(R.id.i);
        board[2][2] = turn;
        flip(i);
    } else { //Space is full, all switches used
        Toast.makeText(getApplicationContext(), "Place already taken, no switches left!",
Toast.LENGTH_SHORT).show();
    }
    win();
}

```

//Resets each bunny in the 3x3 board back to eggs(blank)

```

public void reset(View view) {
    //resets number of switches to 0
    oneSwitch = 0;
    twoSwitch = 0;
    ImageView a = (ImageView) findViewById(R.id.a);
    a.setImageResource(R.drawable.blank);
    ImageView b = (ImageView) findViewById(R.id.b);
    b.setImageResource(R.drawable.blank);
}

```



//TO DO: Complete the other 7 buttons

```
    ImageView c = (ImageView) findViewById(R.id.c);
    c.setImageResource(R.drawable.blank);
    ImageView d = (ImageView) findViewById(R.id.d);
    d.setImageResource(R.drawable.blank);
    ImageView e = (ImageView) findViewById(R.id.e);
    e.setImageResource(R.drawable.blank);
    ImageView f = (ImageView) findViewById(R.id.f);
    f.setImageResource(R.drawable.blank);
    ImageView g = (ImageView) findViewById(R.id.g);
    g.setImageResource(R.drawable.blank);
    ImageView h = (ImageView) findViewById(R.id.h);
    h.setImageResource(R.drawable.blank);
    ImageView i = (ImageView) findViewById(R.id.i);
    i.setImageResource(R.drawable.blank);
    for (int k = 0; k < 3; k++) {
        for (int j = 0; j < 3; j++) {
            board[k][j] = 0;
        }
    }
}
```

XML- activity\_options.xml - 128 lines

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <!--Background-->
    <ImageView
        android:id="@+id/picture"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="center"
        android:src="@drawable/back" />
    <!--Sets linear layout for whole screen-->
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_gravity="center"
        android:orientation="vertical">

        <TextView
            android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:paddingBottom="100dp"
        android:text="Select a background"
        android:textColor="@android:color/holo_green_dark"
        android:textSize="40dp"
        android:textStyle="bold" />
<!--Sets linear layout to horizontal-->
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginBottom="40dp"
    android:orientation="horizontal">
<!--Sets linear layout to vertical-->
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="vertical">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:text="Option 1"
        android:textColor="@android:color/holo_green_dark"
        android:textSize="20dp"
        android:textStyle="bold" />

    <ImageView
        android:layout_width="130dp"
        android:layout_height="120dp"
        android:onClick="back1"
        android:src="@drawable/back" />
</LinearLayout>
<!--Sets linear layout to vertical-->
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="vertical">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:text="Option 2"
        android:textColor="@android:color/holo_green_dark"
        android:textSize="20dp"
        android:textStyle="bold" />

```

```

<ImageView
    android:layout_width="130dp"
    android:layout_height="120dp"
    android:onClick="back2"
    android:src="@drawable/back2" />
</LinearLayout>
<!--Sets linear layout to vertical-->
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="vertical">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:text="Option 3"
        android:textColor="@android:color/holo_green_dark"
        android:textSize="20dp"
        android:textStyle="bold" />

    <ImageView
        android:layout_width="130dp"
        android:layout_height="120dp"
        android:onClick="back3"
        android:src="@drawable/back3" />
    </LinearLayout>
</LinearLayout>
<!--Sets linear layout to horizontal-->
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    android:orientation="horizontal">

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:layout_margin="10dp"
        android:background="#FFC0CB"
        android:onClick="next"
        android:text="Game"

    />

    <Button
        android:id="@+id/send"

```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:layout_margin="10dp"
        android:background="#FFC0CB"
        android:onClick="toSecond"
        android:text="Instructions" />
    </LinearLayout>
</LinearLayout>
</RelativeLayout>

```

## Java Code - Options.java - 106 lines

```

package com.example.bovelltictactoe;

import androidx.appcompat.app.AppCompatActivity;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;

import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
//Name: James Bovell
//Date: March 23 2020
//Purpose Unit 2 project- Switch Tic Tac Toe

public class Options extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_options);
        //Read in the preference
        try {
            FileInputStream in = openFileInput("icon.txt");
            whichBack = in.read();
            in.close();
        } catch (FileNotFoundException e) {
            e.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
        }
        //Update screen
        ImageView picture = (ImageView) findViewById(R.id.picture);
    }
}

```

```

        if (whichBack == 1)
            picture.setImageResource(R.drawable.back);
        else if (whichBack == 2)
            picture.setImageResource(R.drawable.back2);
        else
            picture.setImageResource(R.drawable.back3);
    }

    int whichBack = 1;

    public void back1(View view) {
        whichBack = 1;
        ImageView picture = (ImageView) findViewById(R.id.picture);
        picture.setImageResource(R.drawable.back);
    }

    public void back2(View view) {
        whichBack = 2;
        ImageView picture = (ImageView) findViewById(R.id.picture);
        picture.setImageResource(R.drawable.back2);
    }

    public void back3(View view) {
        whichBack = 3;
        ImageView picture = (ImageView) findViewById(R.id.picture);
        picture.setImageResource(R.drawable.back3);
    }

    public void next(View view) {
        //Save the background picture preference to icon.txt
        try {
            FileOutputStream out = openFileOutput("icon.txt", Activity.MODE_PRIVATE);
            //Print out which background
            out.write(whichBack);
            out.flush();
            out.close();
        } catch (FileNotFoundException e) {
            e.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
        }
        //Start the new screen
        Intent i = new Intent(this, MainActivity.class);
        startActivity(i);
    }

    //OnClick to go to the instructions screen

```

```
public void toSecond(View view) {  
    //Save the background picture preference to icon.txt  
    try {  
        FileOutputStream out = openFileOutput("icon.txt", Activity.MODE_PRIVATE);  
        //Print out which background  
        out.write(whichBack);  
        out.flush();  
        out.close();  
    } catch (FileNotFoundException e) {  
        e.printStackTrace();  
    } catch (IOException e) {  
        e.printStackTrace();  
    }  
    //Start the new screen  
    Intent i = new Intent(this, InstructionsActivity.class);  
    startActivity(i);  
}  
  
}
```