ỨNG DỤNG TRẮC NGHIỆM
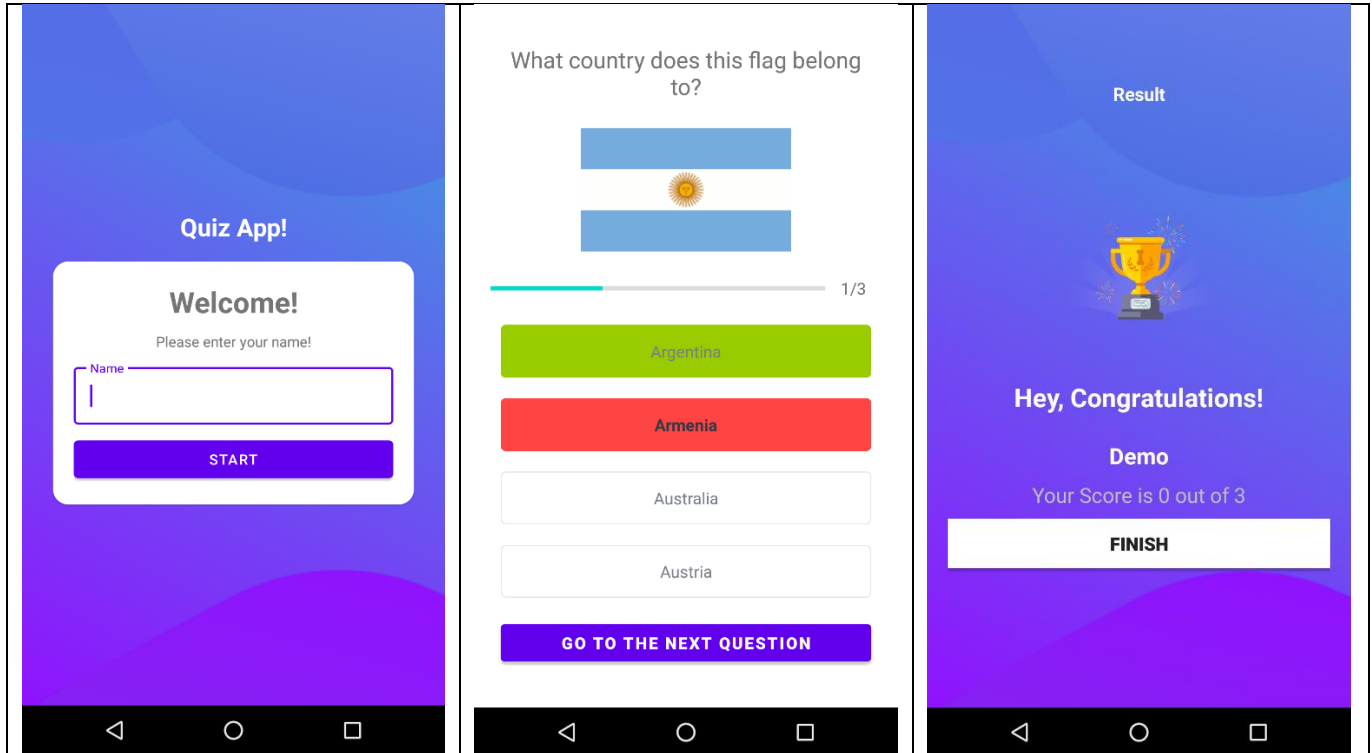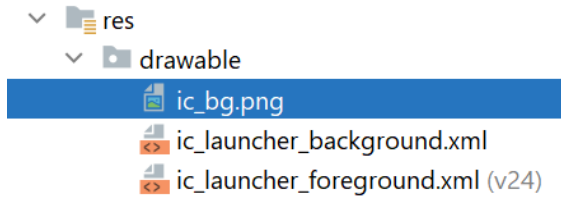

1. Tạo project mới "**MyQuizApp**"
2. Cấu hình theme **NoActionBar**
    a. (Cách 1) Vào **AndroidManifest.xml**
        i. android:theme="@style/**Theme.MyQuizApp**" ➔
         android:theme="@style/**Theme.MaterialComponents.DayNight.NoActionBar**"

    b. (Cách 2) Vào **res/values/themes.x**ml
        i. <style name="Theme.MyQuizApp"
        parent="Theme.MaterialComponents.DayNight.DarkActionBar">
        ➔
        <style name="Theme.MyQuizApp"
        parent="Theme.MaterialComponents.DayNight. **NoActionBar** ">

    c. Để ứng dụng luôn luôn xoay đứng thì thêm thuộc tính **screenOrientation**

```
<activity
    android:name=".MainActivity"
    android:exported="true"
    android:screenOrientation="portrait"
    >
```

3. Thêm hình ảnh vào project: res/drawable/**ic_bg.png**

4. Muốn ứng dụng full màn hình thì vào: res/values/themes.xml, thêm item mới

```xml
<item name="android:windowFullscreen">true</item>
```

5. Thiết kế giao diện trang chủ (login): MainActivity.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.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="@drawable/ic_bg"
    android:layout_gravity="center"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/tvQuizApp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="-200dp"
        android:text="Quiz App!"
        android:textColor="@color/white"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <com.google.android.material.card.MaterialCardView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        app:layout_constraintTop_toBottomOf="@+id/tvQuizApp"
        app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginStart="20dp"
        android:layout_marginEnd="20dp"
        android:layout_marginTop="30dp"
        android:background="@color/white"
        app:cardCornerRadius="8dp"
        >
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical"
            android:padding="16dp"
            >
            <TextView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:textSize="32dp"
                android:textStyle="bold"
                android:text="Welcome"
                android:textColor="#363A43"
                android:gravity="center"
                />
            <TextView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:textSize="16dp"
                android:textStyle="bold"
                android:layout_marginTop="16dp"
                android:text="Please enter your name"
                android:textColor="#7A8089"
                android:gravity="center"
                />

            <com.google.android.material.textfield.TextInputLayout
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_marginTop="16dp"
                style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedB
ox">

                <androidx.appcompat.widget.AppCompatEditText
                    android:id="@+id/etName"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:hint="Name"
```

```xml
                    android:inputType="textCapWords"
                    android:textColor="#363A43"
                    android:textColorHint="#7A8089"
                    tools:ignore="SpeakableTextPresentCheck" />
            </com.google.android.material.textfield.TextInputLayout>

            <Button
                android:id="@+id/btnStart"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_marginTop="16dp"
                android:text="Start"
                android:textSize="18sp"
                />
        </LinearLayout>
    </com.google.android.material.card.MaterialCardView>
</androidx.constraintlayout.widget.ConstraintLayout>
```
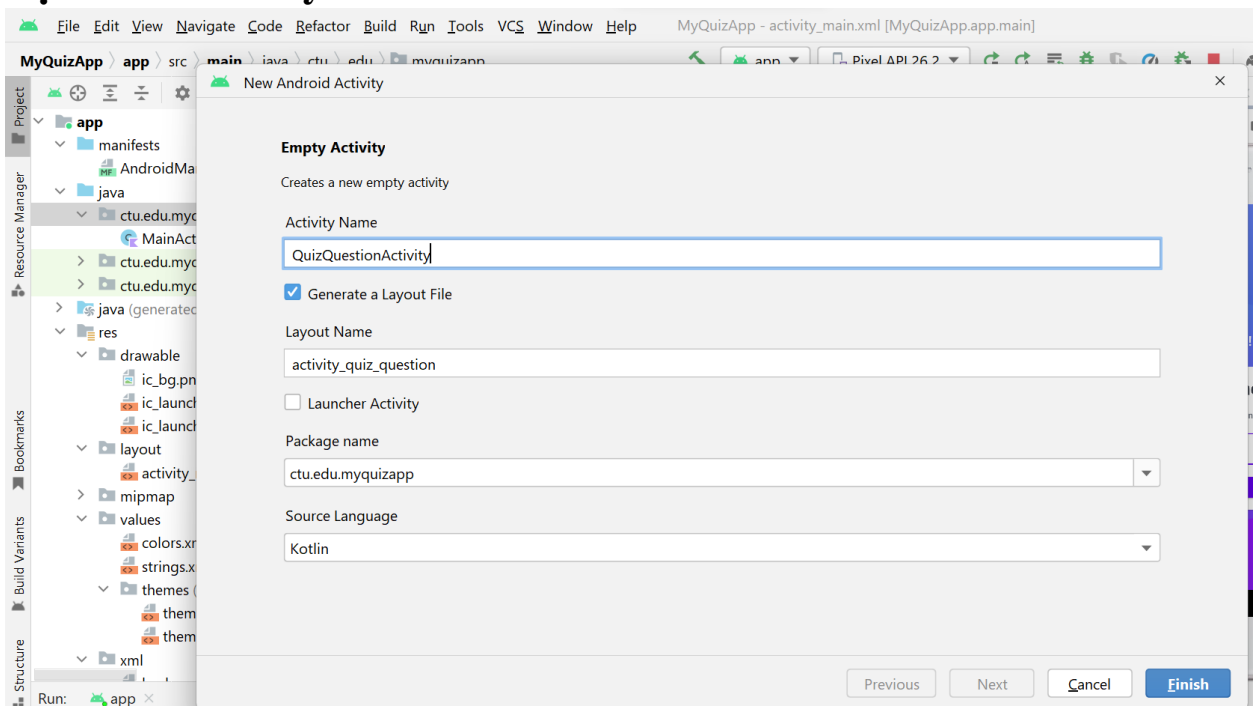
6. Tạo thêm activity mới:

7. Viết code cho MainActivity:

    a. Tham chiếu nút btnStart và etName

    b. Viết sự kiện onClick cho nút btnStart

    c. Kiểm tra nếu etName rỗng thì hiển thị thông báo

d. Nếu khác rỗng thì gọi Intent Question (check hàm finish())

```kotlin
package ctu.edu.myquizapp

import android.content.Intent
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.Toast

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        val btnStart: Button = findViewById(R.id.btnStart)
        val etName:EditText = findViewById(R.id.edt_Name)

        btnStart.setOnClickListener {
            if (etName.text.isEmpty()){
                Toast.makeText(this, "Please enter your name?",
Toast.LENGTH_LONG).show()
            }
            else{
                val intent = Intent(this, QuizQuestionActivity::class.java)
                startActivity(intent)
                finish()
            }
        }
    }
}
```

8. Tạo data class để lưu trữ câu hỏi

```kotlin
package ctu.edu.myquizapp

data class Question(
    val id: Int,
    val question: String,
    val image: Int,
    val optionOne: String,
    val optionTwo: String,
    val optionThree: String,
    val optionFour: String,
```

```
        val correctAnswer: Int
)
```

9. Tạo object class để lưu trữ danh sách câu hỏi

```kotlin
package ctu.edu.myquizapp

object Constants {
    fun getQuestions(): ArrayList<Question>{
        val questionList = ArrayList<Question>()
        val q1 = Question(
            1,
            "What country does this flag belong to?",
            R.drawable.ic_flag_of_argentina,
            "Argentina",
            "Australia",
            "Armenia",
            "Austria",
            1
        )
        return questionList
    }
}
```

Kiểm tra danh sách

```kotlin
package ctu.edu.myquizapp

import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.util.Log

class QuizQuestionActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_quiz_question)

        val questionList = Constants.getQuestions()
        Log.i("ctu", "${questionList.size}")
    }
}
```

10. Thiết kế giao diện Quiz
- Đổi contrainstLayout thành ScrollView

- Thêm thuộc tính android:fillViewport="true"
- Thêm linearLayout
- Thêm TextView, giới thiệu tools:text
- Thêm ImageView, giới thiệu tools:src
- Thêm ProgressBar

```xml
<?xml version="1.0" encoding="utf-8"?>
<ScrollView 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:fillViewport="true"
    tools:context=".QuizQuestionActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:gravity="center"
        android:padding="16dp"
        >
        <TextView
            android:id="@+id/tvQuestion"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:textSize="22sp"
            android:textColor="#363A43"
            tools:text="What country does this flag belong to?"
            />
        <ImageView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="16dp"
            android:contentDescription="Quiz Image"
            tools:src="@drawable/ic_flag_of_argentina"
            />
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:gravity="center"
            >
            <ProgressBar
                android:layout_width="0dp"
                android:layout_height="wrap_content"
```

```
                android:layout_weight="1"
                android:max="9"
                android:progress="0"
                android:minHeight="30dp"
                android:indeterminate="false"
                style="@style/Widget.AppCompat.ProgressBar.Horizontal"
                />
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="1/10"
                android:padding="10dp"
                android:textSize="14sp"
                />
        </LinearLayout>
    </LinearLayout>
</ScrollView>
```

- **Thêm các TextView option**

```xml
<?xml version="1.0" encoding="utf-8"?>
<ScrollView 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:fillViewport="true"
    tools:context=".QuizQuestionActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:gravity="center"
        android:padding="16dp"
        >
        <TextView
            android:id="@+id/tvQuestion"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:textSize="22sp"
            android:textColor="#363A43"
            tools:text="What country does this flag belong to?"
            />
        <ImageView
```

```xml
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:contentDescription="Quiz Image"
    tools:src="@drawable/ic_flag_of_argentina"
    />
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    >
    <ProgressBar
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:max="9"
        android:progress="0"
        android:minHeight="30dp"
        android:indeterminate="false"
        style="@style/Widget.AppCompat.ProgressBar.Horizontal"
        />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="1/10"
        android:padding="10dp"
        android:textSize="14sp"
        />
</LinearLayout>
<TextView
    android:id="@+id/tvOptionOne"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:textSize="18sp"
    android:padding="15dp"
    android:layout_margin="10dp"
    android:background="@drawable/default_border"
    tools:text="ABC"
    />
<TextView
    android:id="@+id/tvOptionTwo"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
```

```
                android:textSize="18sp"
                android:padding="15dp"
                android:layout_margin="10dp"
                android:background="@drawable/wrong_border"
                tools:text="ABC"
                />
        <TextView
                android:id="@+id/tvOptionThree"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:gravity="center"
                android:textSize="18sp"
                android:padding="15dp"
                android:layout_margin="10dp"
                android:background="@drawable/correct_border"
                tools:text="ABC"
                />
        <TextView
                android:id="@+id/tvOptionFour"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:gravity="center"
                android:textSize="18sp"
                android:padding="15dp"
                android:layout_margin="10dp"
                android:background="@drawable/default_border"
                tools:text="ABC"
                />
    </LinearLayout>
</ScrollView>
```