**activity\_main**

<?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">  
  
<Button  
android:id="@+id/btnQuiz"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_centerInParent="true"  
android:text="Quiz" />  
  
</RelativeLayout>

**activity\_quiz**

<?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">  
  
<ProgressBar  
android:id="@+id/timerProgressBar"  
style="?android:attr/progressBarStyleHorizontal"  
android:layout\_marginTop="30dp"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_alignParentTop="true" />  
  
<TextView  
android:id="@+id/tvQuestion"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_below="@id/timerProgressBar"  
android:layout\_marginTop="16dp"  
android:textSize="18sp" />  
  
<LinearLayout  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_below="@id/tvQuestion"  
android:layout\_marginTop="16dp"  
android:orientation="vertical">  
  
<Button  
android:id="@+id/btnOption1"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="20dp"/>  
  
<Button  
android:id="@+id/btnOption2"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="20dp"/>  
  
<Button  
android:id="@+id/btnOption3"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="20dp"/>  
  
<Button  
android:id="@+id/btnOption4"  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="20dp"/>  
  
</LinearLayout>  
  
</RelativeLayout> activity\_result

<?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">  
  
<TextView  
android:id="@+id/tvResult"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_centerInParent="true"  
android:textSize="24sp" />  
  
<Button  
android:id="@+id/btnBackToCategories"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_below="@id/tvResult"  
android:layout\_centerHorizontal="true"  
android:layout\_marginTop="16dp"  
android:text="Back to Categories" />  
  
</RelativeLayout>

activity\_category\_selection

<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="<http://schemas.android.com/apk/res/android>"  
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:text="Choose Category"  
android:textSize="30dp"  
android:layout\_gravity="center"  
android:layout\_marginTop="20dp"  
android:textStyle="bold"/>  
  
<Button  
android:id="@+id/btnCategory1"  
android:layout\_width="match\_parent"  
android:layout\_height="0dp"  
android:layout\_weight="1"  
android:layout\_margin="50dp"  
android:text="Category 1" />  
  
<Button  
android:id="@+id/btnCategory2"  
android:layout\_width="match\_parent"  
android:layout\_height="0dp"  
android:layout\_weight="1"  
android:layout\_margin="50dp"  
android:text="Category 2" />  
  
<Button  
android:id="@+id/btnCategory3"  
android:layout\_width="match\_parent"  
android:layout\_height="0dp"  
android:layout\_margin="50dp"  
android:layout\_weight="1"  
android:text="Category 3" />  
  
<Button  
android:id="@+id/btnCategory4"  
android:layout\_width="match\_parent"  
android:layout\_height="0dp"  
android:layout\_weight="1"  
android:layout\_margin="50dp"  
android:text="Category 4" />  
  
  
</LinearLayout> CategorySelectionActivity

package com.example.test4;  
  
import android.content.DialogInterface;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
import androidx.appcompat.app.AlertDialog;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class CategorySelectionActivity extends AppCompatActivity {  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
setContentView(R.layout.activity\_category\_selection);  
  
Button[] categoryButtons = new Button[]{  
findViewById(R.id.btnCategory1),  
findViewById(R.id.btnCategory2),  
findViewById(R.id.btnCategory3),  
findViewById(R.id.btnCategory4)  
};  
  
for (Button button : categoryButtons) {  
button.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View v) {  
showDifficultyDialog(((Button) v).getText().toString());  
}  
});  
}  
}  
  
private void showDifficultyDialog(final String category) {  
AlertDialog.Builder builder = new AlertDialog.Builder(this);  
builder.setTitle("Select Difficulty");  
final String[] difficulties = {"Easy", "Medium", "Hard"};  
builder.setItems(difficulties, new DialogInterface.OnClickListener() {  
@Override  
public void onClick(DialogInterface dialog, int which) {  
String difficulty = difficulties[which];  
startQuiz(category, difficulty);  
}  
});  
builder.show();  
}  
  
private void startQuiz(String category, String difficulty) {  
Intent intent = new Intent(CategorySelectionActivity.this, QuizActivity.class);  
intent.putExtra("category", category);  
intent.putExtra("difficulty", difficulty);  
startActivity(intent);  
}  
} MainActivity

package com.example.test4;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
setContentView(R.layout.*activity\_main*);  
  
Button btnQuiz = findViewById(R.id.*btnQuiz*);  
btnQuiz.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View v) {  
Intent intent = new Intent(MainActivity.this, CategorySelectionActivity.class);  
startActivity(intent);  
}  
});  
}  
} QuizActivity

package com.example.test4;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.os.CountDownTimer;  
import android.view.View;  
import android.widget.Button;  
import android.widget.ProgressBar;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import java.util.ArrayList;  
import java.util.List;  
  
public class QuizActivity extends AppCompatActivity {  
private TextView tvQuestion;  
private Button[] optionButtons;  
private ProgressBar timerProgressBar;  
private CountDownTimer timer;  
private int currentQuestion = 0;  
private int score = 0;  
private List<Question> questions;  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
setContentView(R.layout.*activity\_quiz*);  
  
tvQuestion = findViewById(R.id.*tvQuestion*);  
timerProgressBar = findViewById(R.id.*timerProgressBar*);  
optionButtons = new Button[]{  
findViewById(R.id.*btnOption1*),  
findViewById(R.id.*btnOption2*),  
findViewById(R.id.*btnOption3*),  
findViewById(R.id.*btnOption4*)  
};  
  
String category = getIntent().getStringExtra("category");  
String difficulty = getIntent().getStringExtra("difficulty");  
  
questions = getQuestions(category, difficulty);  
displayQuestion();  
}  
  
private List<Question> getQuestions(String category, String difficulty) {  
// Implement this method to return a list of questions based on category and difficulty  
// For now, we'll return a dummy list  
List<Question> dummyQuestions = new ArrayList<>();  
for (int i = 0; i < 5; i++) {  
dummyQuestions.add(new Question("Question " + (i + 1), new String[]{"Option 1", "Option 2", "Option 3", "Option 4"}, 0));  
}  
return dummyQuestions;  
}  
  
private void displayQuestion() {  
if (currentQuestion < questions.size()) {  
Question question = questions.get(currentQuestion);  
tvQuestion.setText(question.getQuestion());  
for (int i = 0; i < 4; i++) {  
optionButtons[i].setText(question.getOptions()[i]);  
final int optionIndex = i;  
optionButtons[i].setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View v) {  
checkAnswer(optionIndex);  
}  
});  
}  
startTimer();  
} else {  
showResult();  
}  
}  
  
private void startTimer() {  
timerProgressBar.setProgress(100);  
timer = new CountDownTimer(30000, 100) {  
@Override  
public void onTick(long millisUntilFinished) {  
int progress = (int) (millisUntilFinished / 300);  
timerProgressBar.setProgress(progress);  
}  
  
@Override  
public void onFinish() {  
checkAnswer(-1);  
}  
}.start();  
}  
  
private void checkAnswer(int selectedOption) {  
timer.cancel();  
if (selectedOption == questions.get(currentQuestion).getCorrectAnswer()) {  
score++;  
}  
currentQuestion++;  
displayQuestion();  
}  
  
private void showResult() {  
Intent intent = new Intent(QuizActivity.this, ResultActivity.class);  
intent.putExtra("score", score);  
intent.putExtra("totalQuestions", questions.size());  
startActivity(intent);  
finish();  
}  
  
private static class Question {  
private String question;  
private String[] options;  
private int correctAnswer;  
  
public Question(String question, String[] options, int correctAnswer) {  
this.question = question;  
this.options = options;  
this.correctAnswer = correctAnswer;  
}  
  
public String getQuestion() {  
return question;  
}  
  
public String[] getOptions() {  
return options;  
}  
  
public int getCorrectAnswer() {  
return correctAnswer;  
}  
}  
} ResultActivity

package com.example.test4;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class ResultActivity extends AppCompatActivity {  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
setContentView(R.layout.*activity\_result*);  
  
int score = getIntent().getIntExtra("score", 0);  
int totalQuestions = getIntent().getIntExtra("totalQuestions", 0);  
  
TextView tvResult = findViewById(R.id.*tvResult*);  
tvResult.setText("Your score: " + score + " / " + totalQuestions);  
  
Button btnBackToCategories = findViewById(R.id.*btnBackToCategories*);  
btnBackToCategories.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View v) {  
Intent intent = new Intent(ResultActivity.this, CategorySelectionActivity.class);  
intent.setFlags(Intent.*FLAG\_ACTIVITY\_CLEAR\_TOP*);  
startActivity(intent);  
finish();  
}  
});  
}  
}