

Practical 7

□ Mini Project

Activity_main.xml :-

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    android:orientation="vertical"
    android:padding="24dp"
    android:background="#9E95BF">

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="352dp"
        android:layout_height="186dp"
        app:srcCompat="@drawable/ssasitlogo" />

    <TextView
        android:id="@+id/mainTitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="QuizMaster"
        android:textSize="24sp"
        android:textStyle="bold"
        android:layout_marginBottom="40dp"
        android:layout_marginTop="20dp"/>

    <TextView
        android:id="@+id/headingText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Select Type of Quiz"
        android:textSize="22sp"
        android:textStyle="bold"
        android:layout_marginBottom="24dp"/>
```

```
<Button
    android:id="@+id/animalQuizBtn"
    android:layout_width="140dp"
    android:layout_height="wrap_content"
    android:layout_marginBottom="20dp"
    android:text="Animal Quiz"
    android:textStyle="bold" />
```

```
<Button
    android:id="@+id/countryQuizBtn"
    android:layout_width="140dp"
    android:layout_height="wrap_content"
    android:text="Country Quiz"
    android:layout_marginBottom="20dp"
    android:textStyle="bold"/>
```

```
<Button
    android:id="@+id/studyQuizBtn"
    android:layout_width="140dp"
    android:layout_height="wrap_content"
    android:text="Study Quiz"
    android:layout_marginBottom="20dp"
    android:textStyle="bold"/>
```

```
<Button
    android:id="@+id/madQuizBtn"
    android:layout_width="140dp"
    android:layout_height="wrap_content"
    android:text="MAD Quiz"
    android:textStyle="bold"/>
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="86dp"
    android:text="220760116003"
    android:textStyle="bold"
```

```
/>  
</LinearLayout>
```

Activity_quiz.xml :-

```
<?xml version="1.0" encoding="utf-8"?>  
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"  
    android:padding="24dp"  
    android:background="#9E95BF">  
  
    <LinearLayout  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:orientation="vertical"  
        >  
  
        <!-- Question Number -->  
        <TextView  
            android:id="@+id/questionNumber"  
            android:layout_width="wrap_content"  
            android:layout_height="wrap_content"  
            android:text="Question 1 of 5"  
            android:textSize="16sp"  
            android:textStyle="bold"  
            android:layout_marginBottom="16dp"  
            android:layout_marginTop="25dp"  
            android:textColor="@color/black"/>  
  
        <!-- Question Text -->  
        <TextView  
            android:id="@+id/questionText"  
            android:layout_width="wrap_content"  
            android:layout_height="wrap_content"  
            android:text="Question"  
            android:textSize="18sp"  
            android:textStyle="bold"  
            android:layout_marginBottom="24dp"  
            android:textColor="@color/black"/>
```

```
<!-- Answer Options -->
<RadioGroup
    android:id="@+id/optionsGroup"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textColor="@color/black">

    <RadioButton
        android:id="@+id/option1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Option 1"
        android:textColor="@color/black"/>

    <RadioButton
        android:id="@+id/option2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Option 2"
        android:textColor="@color/black"/>

    <RadioButton
        android:id="@+id/option3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Option 3"
        android:textColor="@color/black"/>

    <RadioButton
        android:id="@+id/option4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Option 4"
        android:textColor="@color/black"/>
</RadioGroup>

<!-- Navigation Buttons -->
<LinearLayout
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:gravity="center"
    android:layout_marginTop="24dp"
    android:weightSum="3">
```

```
<Button
    android:id="@+id/prevButton"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="Previous" />
```

```
<Button
    android:id="@+id/nextButton"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="Next"
    android:layout_marginStart="8dp"
    android:layout_marginEnd="8dp" />
```

```
<Button
    android:id="@+id/submitButton"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="Submit" />
```

```
</LinearLayout>
```

```
</LinearLayout>
```

```
</ScrollView>
```

Activity_result.xml :-

```
<?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:gravity="center"
    android:orientation="vertical"
    android:padding="24dp"
    android:background="#9E95BF">

    <TextView
        android:id="@+id/resultText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Your Score:"
        android:textSize="22sp"
        android:layout_marginBottom="40dp"
        android:textStyle="bold" />

    <Button
        android:id="@+id/restartBtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Restart Quiz" />
</LinearLayout>
```

MainActivity.java :-

```
package com.ssasit.miniproject;

import android.content.Intent;
import android.os.Bundle;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity {
    Button animalQuizBtn, countryQuizBtn, studyQuizBtn, madQuizBtn;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        animalQuizBtn = findViewById(R.id.animalQuizBtn);
        countryQuizBtn = findViewById(R.id.countryQuizBtn);
        studyQuizBtn = findViewById(R.id.studyQuizBtn);
        madQuizBtn = findViewById(R.id.madQuizBtn); // Button for MAD quiz

        animalQuizBtn.setOnClickListener(v -> {
            Intent intent = new Intent(MainActivity.this, QuizActivity.class);
            intent.putExtra("quizType", "animal");
            startActivity(intent);
        });

        countryQuizBtn.setOnClickListener(v -> {
            Intent intent = new Intent(MainActivity.this, QuizActivity.class);
            intent.putExtra("quizType", "country");
            startActivity(intent);
        });

        studyQuizBtn.setOnClickListener(v -> {
            Intent intent = new Intent(MainActivity.this, QuizActivity.class);
            intent.putExtra("quizType", "study");
            startActivity(intent);
        });

        madQuizBtn.setOnClickListener(v -> {
            Intent intent = new Intent(MainActivity.this, QuizActivity.class);
            intent.putExtra("quizType", "mad");
            startActivity(intent);
        });
    }
}
```

QuizActivity.java :-

```
package com.ssasit.miniproject;

import android.content.Intent;
import android.os.Bundle;
import android.widget.Button;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
import java.util.ArrayList;

public class QuizActivity extends AppCompatActivity {
    TextView questionText, questionNumber;
    RadioGroup optionsGroup;
    RadioButton option1, option2, option3, option4;
    Button nextButton, prevButton, submitButton;

    ArrayList<Question> questionList;
    int currentQuestionIndex = 0;
    int score = 0;

    boolean[] answered;      // To avoid double-scoring
    int[] selectedOptions;    // Stores selected RadioButton IDs

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_quiz);

        questionText = findViewById(R.id.questionText);
        questionNumber = findViewById(R.id.questionNumber);
        optionsGroup = findViewById(R.id.optionsGroup);
        option1 = findViewById(R.id.option1);
        option2 = findViewById(R.id.option2);
        option3 = findViewById(R.id.option3);
        option4 = findViewById(R.id.option4);
        nextButton = findViewById(R.id.nextButton);
        prevButton = findViewById(R.id.prevButton);
        submitButton = findViewById(R.id.submitButton);
    }
}
```



```
// Get quiz type and load questions
String quizType = getIntent().getStringExtra("quizType");
loadQuestions(quizType);

answered = new boolean[questionList.size()];
selectedOptions = new int[questionList.size()]; // Default to 0 (unselected)

showQuestion();

nextButton.setOnClickListener(v -> {
    if (validateAnswer()) {
        currentQuestionIndex++;
        showQuestion();
    }
});

prevButton.setOnClickListener(v -> {
    saveAnswer(); // Save current answer before going back
    if (currentQuestionIndex > 0) {
        currentQuestionIndex--;
        showQuestion();
    }
});

submitButton.setOnClickListener(v -> {
    if (validateAnswer()) {
        Intent intent = new Intent(QuizActivity.this, ResultActivity.class);
        intent.putExtra("score", score);
        intent.putExtra("total", questionList.size());
        startActivity(intent);
        finish();
    }
});
}

private boolean validateAnswer() {
    int selectedId = optionsGroup.getCheckedRadioButtonId();
    if (selectedId != -1) {
        selectedOptions[currentQuestionIndex] = selectedId;
    }
}
```

```
        if (!answered[currentQuestionIndex]) {
            RadioButton selectedOption = findViewById(selectedId);
            if
(selectedOption.getText().toString().equals(questionList.get(currentQuestionIndex).getAnswer())
) {
                score++;
            }
            answered[currentQuestionIndex] = true;
        }
        return true;
    }
    return false;
}

private void saveAnswer() {
    int selectedId = optionsGroup.getCheckedRadioButtonId();
    if (selectedId != -1) {
        selectedOptions[currentQuestionIndex] = selectedId;
    }
}

private void showQuestion() {
    Question q = questionList.get(currentQuestionIndex);
    questionText.setText(q.getQuestion());
    questionNumber.setText("Question " + (currentQuestionIndex + 1) + " of " +
questionList.size());
    option1.setText(q.getOption1());
    option2.setText(q.getOption2());
    option3.setText(q.getOption3());
    option4.setText(q.getOption4());

    optionsGroup.clearCheck();

    // Restore previously selected option
    int selectedId = selectedOptions[currentQuestionIndex];
    if (selectedId != 0) {
        optionsGroup.check(selectedId);
    }
}
```

```

prevButton.setEnabled(currentQuestionIndex > 0);
nextButton.setEnabled(currentQuestionIndex < questionList.size() - 1);
submitButton.setEnabled(currentQuestionIndex == questionList.size() - 1);
}

private void loadQuestions(String quizType) {
    questionList = new ArrayList<>();

    if (quizType.equals("animal")) {
        questionList.add(new Question("What is the fastest land animal?", "Cheetah", "Lion",
"Elephant", "Tiger", "Cheetah"));
        questionList.add(new Question("Which animal is known as the king of the jungle?",
"Elephant", "Lion", "Tiger", "Giraffe", "Lion"));
        questionList.add(new Question("Which animal is the largest mammal?", "Elephant",
"Blue Whale", "Giraffe", "Shark", "Blue Whale"));
        questionList.add(new Question("What is the largest land animal?", "Elephant", "Lion",
"Giraffe", "Rhinoceros", "Elephant"));
        questionList.add(new Question("Which bird can fly backwards?", "Eagle", "Sparrow",
"Hummingbird", "Pigeon", "Hummingbird"));
    } else if (quizType.equals("country")) {
        questionList.add(new Question("What is the capital of France?", "Paris", "London",
"Berlin", "Rome", "Paris"));
        questionList.add(new Question("Which country is known as the Land of the Rising
Sun?", "China", "Japan", "India", "South Korea", "Japan"));
        questionList.add(new Question("Which country is home to the Great Barrier Reef?",
"Australia", "New Zealand", "USA", "Thailand", "Australia"));
        questionList.add(new Question("Which country is the largest in the world?", "USA",
"Canada", "Russia", "China", "Russia"));
        questionList.add(new Question("What country is known as the Land of Ice and Fire?",
"Canada", "Iceland", "Australia", "Norway", "Iceland"));
    } else if (quizType.equals("study")) {
        questionList.add(new Question("What is the chemical symbol for water?", "H2O",
"CO2", "O2", "NaCl", "H2O"));
        questionList.add(new Question("Who developed the theory of relativity?", "Isaac
Newton", "Albert Einstein", "Nikola Tesla", "Galileo", "Albert Einstein"));
        questionList.add(new Question("What is the largest organ in the human body?", "Heart",
"Liver", "Skin", "Brain", "Skin"));
        questionList.add(new Question("What is the capital of science and technology?",
"Science City", "Tech Park", "Silicon Valley", "Innovation Hub", "Silicon Valley"));
        questionList.add(new Question("Which is the most common element in the Earth's

```

```

atmosphere?", "Oxygen", "Hydrogen", "Nitrogen", "Carbon Dioxide", "Nitrogen"));
    } else if (quizType.equals("mad")) {
        questionList.add(new Question("What does MAD stand for in the context of Android
development?", "Mobile Application Development", "Mobile App Design", "Mobile App
Development", "Mobile And Design", "Mobile Application Development"));
        questionList.add(new Question("Which of the following is the default layout for an
Android app?", "ConstraintLayout", "RelativeLayout", "LinearLayout", "FrameLayout",
"LinearLayout"));
        questionList.add(new Question("Which class is used for database access in Android?",
"SQLiteHelper", "SQLiteDatabase", "SQLiteManager", "SQLiteConnection",
"SQLiteDatabase"));
        questionList.add(new Question("Which of these is used to manage background tasks in
Android?", "AsyncTask", "Thread", "IntentService", "All of the above", "All of the above"));
        questionList.add(new Question("What is the file extension for Android layout files?",
".xml", ".java", ".kt", ".html", ".xml"));
    }
}
}

```

ResultActivity.java :-

```

package com.ssasit.miniproject;

import android.content.Intent;
import android.os.Bundle;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class ResultActivity extends AppCompatActivity {

    TextView resultText;
    Button restartBtn;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_result);
    }
}

```

```
resultText = findViewById(R.id.resultText);
restartBtn = findViewById(R.id.restartBtn);

int score = getIntent().getIntExtra("score", 0);
int total = getIntent().getIntExtra("total", 0);

resultText.setText("Your Score: " + score + " / " + total);

restartBtn.setOnClickListener(v -> {
    Intent intent = new Intent(ResultActivity.this, MainActivity.class);
    startActivity(intent);
    finish();
});
}
```

Question.java :-

```
package com.ssasit.miniproject;
public class Question {
    private String question, option1, option2, option3, option4, answer;

    public Question(String question, String option1, String option2, String option3, String
option4, String answer) {
        this.question = question;
        this.option1 = option1;
        this.option2 = option2;
        this.option3 = option3;
        this.option4 = option4;
        this.answer = answer;
    }

    public String getQuestion() { return question; }
    public String getOption1() { return option1; }
    public String getOption2() { return option2; }
    public String getOption3() { return option3; }
    public String getOption4() { return option4; }
    public String getAnswer() { return answer; }
}
```

Output :-

