

[2CEIT5PE5: MOBILE APPLICATION DEVELOPMENT]

Assignment-2

Project Name: Expense Tracker Application

AIM: This Android app lets users add their expense by entering Amount, Date, and its Description in AddExpenseActivity. It then displays the Total Expenditure List in a list view in the TotalExpenditureActivity.

Submitted By: Nandinee Patel
Enrollment number: 21012011093

Department of Computer
Engineering/Information Technology



**Ganpat
University**

॥ विद्यया समाजोत्कर्षः ॥

**U.V. Patel
College of
Engineering**

Assignment-2

Assignment-2

activity_main.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/gradient1"
    tools:context=".MainActivity">

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="300dp"
        android:layout_height="400dp"
        android:layout_marginTop="50dp"
        android:src="@drawable/expense_logo"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/btnAddExpense"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Add Expense"
        android:backgroundTint="@color/blue"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/imageView"
        android:layout_marginTop="32dp" />

    <!-- Button to navigate to TotalExpenditureActivity -->
    <Button
        android:id="@+id/btnTotalExpenditure"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Total Expenditure"
        android:backgroundTint="@color/blue"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/btnAddExpense"
        android:layout_marginTop="16dp" />

    <ImageView
        android:id="@+id/coin"
        android:layout_width="50dp"
```

Assignment-2

```
android:layout_height="50dp"
android:scaleType="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/btnTotalExpenditure" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.kt:

```
package com.example.mad_assignment_2_21012011093

import android.content.Intent
import android.graphics.drawable.AnimationDrawable
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.Button
import android.widget.ImageView

class MainActivity : AppCompatActivity() {
    private lateinit var coinanimation: AnimationDrawable

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

        val coin: ImageView = findViewById(R.id.coin)
        coin.setBackgroundResource(R.drawable.coin_animation_list)
        coinanimation = coin.background as AnimationDrawable

        val btnTotalExpenditure = findViewById<Button>(R.id.btnTotalExpenditure)
        val btnAddExpense = findViewById<Button>(R.id.btnAddExpense)

        btnTotalExpenditure.setOnClickListener {
            // Navigate to TotalExpenditureActivity
            val intent = Intent(this, TotalExpenditureActivity::class.java)
            startActivity(intent)
        }

        btnAddExpense.setOnClickListener {
            // Navigate to AddExpenseActivity
            val intent = Intent(this, AddExpenseActivity::class.java)
            startActivity(intent)
        }
    }

    override fun onWindowFocusChanged(hasFocus: Boolean) {
        super.onWindowFocusChanged(hasFocus)
        if (hasFocus) {
            coinanimation.start()
        } else {

```

Assignment-2

```
        coinanimation.stop()
    }
}
```

activity_add_expense.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/gradient1"
    tools:context=".AddExpenseActivity">

    <com.google.android.material.card.MaterialCardView
        android:id="@+id/cardAddExpense"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:elevation="20dp"
        app:cardCornerRadius="20dp"
        android:layout_margin="16dp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintVertical_bias="0.5"
        app:layout_constraintHorizontal_bias="0.5">

        <!-- Card Content -->
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical"
            android:padding="16dp">

            <ImageView
                android:id="@+id/imageLogo"
                android:layout_width="wrap_content"
                android:layout_height="58dp"
                android:src="@drawable/expense_logo"
                android:layout_gravity="center" />

            <com.google.android.material.textfield.TextInputLayout
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:hint="Expense Amount">

                <com.google.android.material.textfield.TextInputEditText
                    android:id="@+id/editTextAmount"
```

Assignment-2

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
</com.google.android.material.textfield.TextInputLayout>

<DatePicker
    android:id="@+id/datePicker"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:calendarViewShown="false"
    android:datePickerMode="spinner"
    app:layout_constraintTop_toBottomOf="@+id/spinnerCategory"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginTop="16dp" />

<Spinner
    android:id="@+id/spinnerCategory"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:background="@android:drawable/btn_dropdown"
    android:paddingStart="8dp"
    android:paddingEnd="8dp"
    android:layout_marginTop="4dp"
    android:layout_marginBottom="4dp"
    android:entries="@array/expense_categories" />

<com.google.android.material.textfield.TextInputLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Description">

    <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/editTextDescription"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
</com.google.android.material.textfield.TextInputLayout>

<Button
    android:id="@+id/fabAddExpense"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:layout_gravity="center"
    android:text="Add Expense" />

</LinearLayout>
</com.google.android.material.card.MaterialCardView>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Assignment-2

AddExpenseActivity.kt

```
package com.example.mad_assignment_2_21012011093

import android.content.Context
import android.content.Intent
import android.content.SharedPreferences
import android.os.Bundle
import android.widget.*
import androidx.appcompat.app.AppCompatActivity
import org.json.JSONArray
import org.json.JSONObject

class AddExpenseActivity : AppCompatActivity() {
    private lateinit var editTextAmount: EditText
    private lateinit var datePicker: DatePicker
    private lateinit var spinnerCategory: Spinner
    private lateinit var editTextDescription: EditText
    private lateinit var fabAddExpense: Button

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_add_expense)

        editTextAmount = findViewById(R.id.editTextAmount)
        datePicker = findViewById(R.id.datePicker)
        spinnerCategory = findViewById(R.id.spinnerCategory)
        editTextDescription = findViewById(R.id.editTextDescription)
        fabAddExpense = findViewById(R.id.fabAddExpense)

        // Set up a click listener for the "Add Expense" button
        fabAddExpense.setOnClickListener {
            // Get user input
            val amount = editTextAmount.text.toString()
            val day = datePicker.dayOfMonth
            val month = datePicker.month + 1 // Months are 0-based, so add 1
            val year = datePicker.year
            val date = "$year-$month-$day"
            val category = spinnerCategory.selectedItem.toString()
            val description = editTextDescription.text.toString()

            val expense = JSONObject()
            expense.put("amount", amount)
            expense.put("date", date)
            expense.put("category", category)
            expense.put("description", description)

            saveExpense(expense)

            navigateToTotalExpenditure()
        }
    }
}
```

Assignment-2

```
        val categories = resources.getStringArray(R.array.expense_categories)
        val adapter = ArrayAdapter(this, android.R.layout.simple_spinner_item,
categories)

adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item)
    spinnerCategory.adapter = adapter
    }

    private fun navigateToTotalExpenditure() {
        val intent = Intent(this, TotalExpenditureActivity::class.java)
        startActivity(intent)
    }

    private fun saveExpense(expense: JSONObject) {
        val sharedPreferences: SharedPreferences =
getSharedPreferences("ExpenseTracker", Context.MODE_PRIVATE)
        val editor = sharedPreferences.edit()

        val expensesArray = JSONArray(sharedPreferences.getString("expenses", "[""))

        expensesArray.put(expense)

        editor.putString("expenses", expensesArray.toString())
        editor.apply()
    }
}
```

activity_total_expenditure.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:background="@drawable/gradient1"
    android:orientation="vertical">

    <com.google.android.material.card.MaterialCardView
        android:id="@+id/cardTotalExpenditure"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:elevation="20dp"
        android:layout_margin="16dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical"
            android:padding="16dp">

            <ImageView
                android:id="@+id/imageLogo"
```

Assignment-2

```
        android:layout_width="wrap_content"
        android:layout_height="58dp"
        android:src="@drawable/expense_logo"
        android:layout_gravity="center" />

<RadioGroup
    android:id="@+id/radioGroupTimeFrame"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">

    <RadioButton
        android:id="@+id/radioButtonDaily"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Daily" />

    <RadioButton
        android:id="@+id/radioButtonWeekly"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Weekly" />

    <RadioButton
        android:id="@+id/radioButtonMonthly"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Monthly" />
    >

</RadioGroup>

<!-- Total Expenditure Amount (TextView) -->
<TextView
    android:id="@+id/textViewTotalExpenditure"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Total Expenditure: $0.00" />

</LinearLayout>
</com.google.android.material.card.MaterialCardView>

<ListView
    android:id="@+id/listViewExpenses"
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:background="#fff"
    android:divider="@android:color/darker_gray"
    android:dividerHeight="1dp" />

</LinearLayout><androidx.constraintlayout.widget.ConstraintLayout
```


Assignment-2

```
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/gradient_background1"
    tools:context=".BillActivity">

    <androidx.cardview.widget.CardView
        android:id="@+id/cardView"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintVertical_bias="0.2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:cardCornerRadius="16dp"
        app:cardElevation="8dp"
        app:cardBackgroundColor="@android:color/white">

        <ListView
            android:id="@+id/listViewInfoAboutOrder"
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:divider="@android:color/darker_gray"
            android:dividerHeight="1dp"
            android:padding="8dp" />

    </androidx.cardview.widget.CardView>

</androidx.constraintlayout.widget.ConstraintLayout>
```

TotalExpenditureActivity.kt

```
package com.example.mad_assignment_2_21012011093

import android.content.Context
import android.content.SharedPreferences
import android.os.Bundle
import android.widget.*
import androidx.appcompat.app.AppCompatActivity
import org.json.JSONArray
import java.text.SimpleDateFormat
import java.util.*

class TotalExpenditureActivity : AppCompatActivity() {
    private lateinit var radioGroupTimeFrame: RadioGroup
    private lateinit var textViewTotalExpenditure: TextView
    private lateinit var listViewExpenses: ListView
    private lateinit var expensesList: MutableList<String>
```

Assignment-2

```
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContentView(R.layout.activity_total_expenditure)

    radioGroupTimeFrame = findViewById(R.id.radioGroupTimeFrame)
    textViewTotalExpenditure = findViewById(R.id.textViewTotalExpenditure)
    listViewExpenses = findViewById(R.id.listViewExpenses)

    expensesList = mutableListOf()

    radioGroupTimeFrame.setOnCheckedChangeListener { _, checkedId ->
        when (checkedId) {
            R.id.radioButtonDaily -> displayTotalExpenditure("daily")
            R.id.radioButtonWeekly -> displayTotalExpenditure("weekly")
            R.id.radioButtonMonthly -> displayTotalExpenditure("monthly")
        }
    }
}

private fun displayTotalExpenditure(timeFrame: String) {
    val sharedPreferences: SharedPreferences =
        getSharedPreferences("ExpenseTracker", Context.MODE_PRIVATE)

    val expensesArray = JSONArray(sharedPreferences.getString("expenses", "[" ]))

    expensesList.clear()

    val totalExpenditure = calculateTotalExpenditure(expensesArray, timeFrame)

    for (i in 0 until expensesArray.length()) {
        val expense = expensesArray.getJSONObject(i)
        val date = expense.getString("date")

        if (isExpenseInTimeFrame(date, timeFrame)) {
            val amount = expense.getString("amount")
            val category = expense.getString("category")
            val description = expense.getString("description")
            val expenseString = "Date: $date\nAmount: $amount\nCategory:
$category\nDescription: $description"
            expensesList.add(expenseString)
        }
    }

    val adapter = ArrayAdapter(this, android.R.layout.simple_list_item_1,
        expensesList)
    listViewExpenses.adapter = adapter

    textViewTotalExpenditure.text = "Total Expenditure ($timeFrame):
$totalExpenditure"
}
```

Assignment-2

```
private fun calculateTotalExpenditure(expensesArray: JSONArray, timeFrame:
String): Double {
    var total = 0.0

    for (i in 0 until expensesArray.length()) {
        val expense = expensesArray.getJSONObject(i)
        val date = expense.getString("date")

        if (isExpenseInTimeFrame(date, timeFrame)) {
            total += expense.getDouble("amount")
        }
    }

    return total
}

private fun isExpenseInTimeFrame(expenseDate: String, timeFrame: String):
Boolean {
    val sdf = SimpleDateFormat("yyyy-MM-dd", Locale.getDefault())
    val currentDate = sdf.format(Date())

    when (timeFrame) {
        "daily" -> {
            return expenseDate == currentDate
        }
        "weekly" -> {
            val currentCalendar = Calendar.getInstance()
            currentCalendar.firstDayOfWeek = Calendar.MONDAY
            val currentWeek = currentCalendar[Calendar.WEEK_OF_YEAR]

            val expenseCalendar = Calendar.getInstance()
            expenseCalendar.firstDayOfWeek = Calendar.MONDAY
            expenseCalendar.time = sdf.parse(expenseDate)

            return expenseCalendar[Calendar.WEEK_OF_YEAR] == currentWeek
        }
        "monthly" -> {
            val calendar = Calendar.getInstance()
            val currentMonth = calendar[Calendar.MONTH]
            val expenseMonth = Calendar.getInstance()
            expenseMonth.time = sdf.parse(expenseDate)
            return expenseMonth[Calendar.MONTH] == currentMonth
        }
    }

    return false
}
```

Assignment-2

gradient1.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android">
    <gradient
        android:startColor="#ff2d9a59"
        android:endColor="#ff23729a"
        android:angle="135"/>
</shape>
```

Coin_animation_list.xml

```
<?xml version="1.0" encoding="utf-8"?>
<animation-list xmlns:android="http://schemas.android.com/apk/res/android"
    android:oneshot="false">
    <item android:drawable="@drawable/coin1" android:duration="100"/>
    <item android:drawable="@drawable/coin2" android:duration="100"/>
    <item android:drawable="@drawable/coin3" android:duration="100"/>
    <item android:drawable="@drawable/coin4" android:duration="100"/>
    <item android:drawable="@drawable/coin5" android:duration="100"/>
    <item android:drawable="@drawable/coin6" android:duration="100"/>
</animation-list>
```

colors.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFF</color>
    <color name="green">#ff2d9a59</color>
    <color name="pink">#efb7ae</color>
    <color name="blue">#ff23729a</color>
</resources>
```

strings.xml:

```
<resources>
    <string name="app_name">MAD_Assignment-2_21012011093</string>
    <string-array name="expense_categories">
        <item>Food</item>
        <item>Entertainment</item>
        <item>Study Material</item>
        <item>Travel</item>
        <item>Shopping</item>
    </string-array>
</resources>
```

Assignment-2

AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.MAD_Assignment2_21012011093"
        tools:targetApi="31">

        <activity
            android:name=".TotalExpenditureActivity"
            android:exported="false" />
        <activity
            android:name=".AddExpenseActivity"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

Assignment-2

Output:

