

# Expense Tracker App Implementation

## MainActivity.kt

```
package com.example.expensetrackerapp
import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity
import androidx.recyclerview.widget.LinearLayoutManager
import androidx.room.Room
import com.example.expensetrackerapp.databinding.ActivityMainBinding
import kotlinx.coroutines.CoroutineScope
import kotlinx.coroutines.Dispatchers
import kotlinx.coroutines.launch

class MainActivity : AppCompatActivity() {
    private lateinit var binding: ActivityMainBinding
    private val expenseAdapter = ExpenseAdapter()

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        binding = ActivityMainBinding.inflate(layoutInflater)
        setContentView(binding.root)

        binding.recyclerView.layoutManager = LinearLayoutManager(this)
        binding.recyclerView.adapter = expenseAdapter

        binding.addExpenseButton.setOnClickListener {
            loadExpenses()
        }

    }

    private fun loadExpenses() {
        val db = Room.databaseBuilder(
            applicationContext,
            ExpenseDatabase::class.java, "expense_database"
        ).build()
        CoroutineScope(Dispatchers.IO).launch {
            val expenses = db.expenseDao().getAll()
            runOnUiThread {
                expenseAdapter.submitList(expenses)
            }
        }
    }
}
```

```
    }
}
}}
```

## ExpenseAdapter.kt

```
package com.example.expensetrackerapp
import android.view.LayoutInflater
import android.view.ViewGroup
import androidx.recyclerview.widget.DiffUtil
import androidx.recyclerview.widget.ListAdapter
import androidx.recyclerview.widget.RecyclerView
import com.example.expensetrackerapp.databinding.ItemExpenseBinding

class ExpenseAdapter : ListAdapter<Expense,
ExpenseAdapter.ExpenseViewHolder>(ExpenseDiffCallback()) {

    override fun onCreateViewHolder(parent: ViewGroup, viewType: Int): ExpenseViewHolder {
        val binding = ItemExpenseBinding.inflate(LayoutInflater.from(parent.context), parent, false)
        return ExpenseViewHolder(binding)
    } override fun onBindViewHolder(holder: ExpenseViewHolder, position: Int) {
        holder.bind(getItem(position))
    }
    class ExpenseViewHolder(private val binding: ItemExpenseBinding) :
    RecyclerView.ViewHolder(binding.root) {
        fun bind(expense: Expense) {
            binding.expenseName.text = expense.name
            binding.expenseAmount.text = expense.amount.toString()
            binding.expenseCategory.text = expense.category
        } }

    class ExpenseDiffCallback : DiffUtil.ItemCallback<Expense>() {
        override fun areItemsTheSame(oldItem: Expense, newItem: Expense) = oldItem.id == newItem.id
        override fun areContentsTheSame(oldItem: Expense, newItem: Expense) = oldItem == newItem
    }
}
```

## ExpenseEntity.kt

```
package com.example.expensetrackerapp
import androidx.room.Entity
import androidx.room.PrimaryKey

@Entity
data class ExpenseEntity(
```

```

    @PrimaryKey(autoGenerate = true) val id: Int = 0,
    val name: String,
    val amount: Double,
    val category: String
)

```

## **ExpenseDao.kt**

```

package com.example.expensetrackerapp
import androidx.room.Dao
import androidx.room.Insert
import androidx.room.Query

```

```

@Dao
interface ExpenseDao {
    @Insert
    suspend fun insert(expense: ExpenseEntity)

    @Query("SELECT * FROM ExpenseEntity")
    suspend fun getAll(): List<ExpenseEntity>
    @Query("DELETE FROM ExpenseEntity WHERE id = :id")
    suspend fun deleteById(id: Int)
}

```

## **ExpenseDatabase.kt**

```

package com.example.expensetrackerapp
import androidx.room.Database
import androidx.room.RoomDatabase
@Database(entities = [ExpenseEntity::class], version = 1)
abstract class ExpenseDatabase : RoomDatabase() {
    abstract fun expenseDao(): ExpenseDao }

```

## **BudgetManagement.kt**

```

package com.example.expensetrackerapp
import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity
import com.example.expensetrackerapp.databinding.ActivityBudgetManagementBinding
class BudgetManagementActivity : AppCompatActivity() {
    private lateinit var binding: ActivityBudgetManagementBinding
}

```

```

override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    binding = ActivityBudgetManagementBinding.inflate(layoutInflater)
    setContentView(binding.root)

    binding.saveBudgetButton.setOnClickListener {
    } }

```

## ChartsActivity.kt

```

package com.example.expensetrackerapp
import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity
import com.github.mikephil.charting.charts.PieChart
import com.github.mikephil.charting.data.PieData
import com.github.mikephil.charting.data.PieDataSet
import com.github.mikephil.charting.data.PieEntry

class ChartsActivity : AppCompatActivity() {
    private lateinit var pieChart: PieChart

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        pieChart = PieChart(this)
        setContentView(pieChart)

        val entries = listOf(PieEntry(40f, "Food"), PieEntry(30f, "Rent"), PieEntry(30f, "Utilities"))
        val dataSet = PieDataSet(entries, "Expenses")
        val pieData = PieData(dataSet)

        pieChart.data = pieData
        pieChart.invalidate() }
}

```

## build.gradle (Module: app)

```

plugins {
    id 'com.android.application'
    id 'kotlin-android'
    id 'kotlin-kapt'
}

```

```

android {
    compileSdkVersion 33
    defaultConfig {
        applicationId "com.example.expensetrackerapp"
        minSdkVersion 21
        targetSdkVersion 33
        versionCode 1
        versionName "1.0"
        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
    }
    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-rules.pro'
        }
    }
}

dependencies {
    implementation "androidx.core:core-ktx:1.10.1"
    implementation "androidx.appcompat:appcompat:1.6.1"
    implementation "com.google.android.material:material:1.9.0"
    implementation "androidx.constraintlayout:constraintlayout:2.1.4"
    implementation "androidx.lifecycle:lifecycle-runtime-ktx:2.6.1"
    implementation "org.jetbrains.kotlin:kotlin-stdlib:1.9.0"
    implementation "androidx.room:room-runtime:2.5.2"
    kapt "androidx.room:room-compiler:2.5.2"
    implementation "androidx.recyclerview:recyclerview:1.3.1"
    implementation 'com.github.PhilJay:MPAndroidChart:v3.1.0'
    testImplementation "junit:junit:4.13.2"
    androidTestImplementation "androidx.test.ext:junit:1.1.5"
    androidTestImplementation "androidx.test.espresso:espresso-core:3.5.1"
}

```