

**Course**

[Mobile Application - CSC203-4](https://classroom.google.com/c/NzM0NjEzMzI5Nzc3)

**Topic**

Apple Store Shopping App

**ESE Component III**

**Submitted by**

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**Register number**

2340105

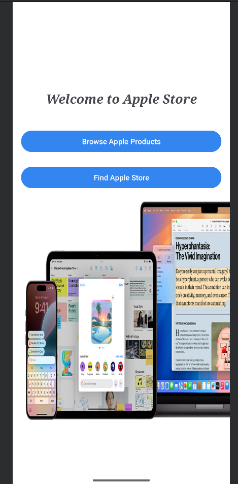
**DATE OF SUBMISSION: 21st March 2025**

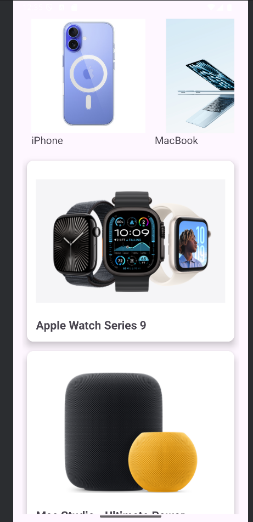
**Title: E-Commerce Android Application for Apple Products**

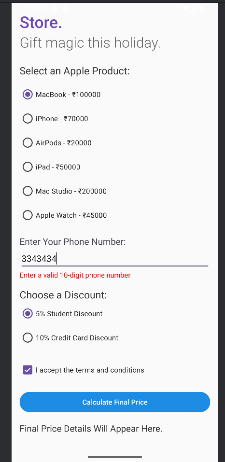
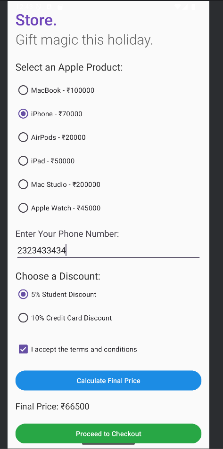
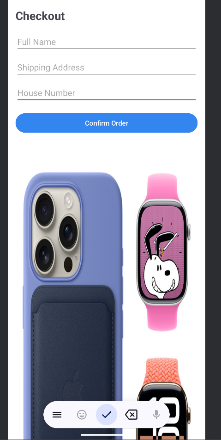
* 1. **Problem Description:** As online shopping becomes more popular, consumers are looking for a quick and easy way to view and buy goods. A user experience that is clear and easy to use is lacking in many e-commerce platforms. The project's objective is to create an Android-based e-commerce app that is especially made for buying Apple goods, guaranteeing a secure transaction, a quick checkout procedure, and an intuitive user experience.
  2. **Goals:**
* Develop an intuitive and visually appealing mobile shopping experience.
* Implement dynamic product selection and discount application.
* Ensure secure and efficient checkout and payment processing.
* Provide real-time UI updates and error handling for better user experience.
* Integrate multiple payment options to enhance customer convenience.
* Ensure user validation, including phone number verification and terms agreement.
  1. **Project Scope:**
* The goal of this project is to create a workable e-commerce app for Android that has the following features:
* Product Browsing: Use RecyclerView and CardView to display Apple products along with descriptions, pricing, and photos.
* Product Selection & Discounts: Give customers the ability to select items and dynamically apply any applicable discounts.
* Procedure for Checkout: For shipping purposes, gather user information such as name, address, and phone number.
* Integration of Payments: Accept a number of payment options, including credit/debit cards, Google Pay, PhonePe, and Net Banking.
* Order Confirmation & Billing: Offer an order confirmation that resembles a receipt along with alternatives for customer service and feedback.
* Future Improvements: Order tracking, user authentication, and online payment gateway integration are possible additions.

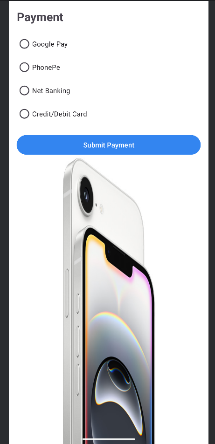
**2. Abstract of the application:**  
The created application is an e-commerce software for Android that allows users to browse and buy Apple products. With capabilities for product selection, applying discounts, checkout, payment, and billing, it offers a flawless shopping experience. The application makes use of RadioButtons for product selection, RecyclerView & CardView for product browsing, and a Terms & Conditions checkbox for validation. Before completing the checkout and payment procedure, the final price is dynamically determined, taking into account any applicable reductions.

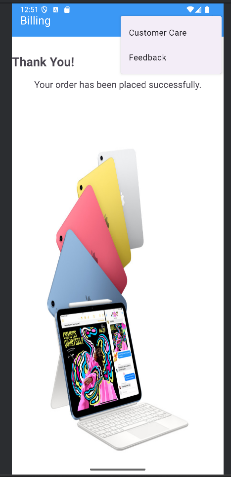
**3. Implementation Details:**

* 1. User Interface Design
* Created XML layouts for Main, Product Browsing, Checkout, Payment, and Billing activities.
* Used RecyclerView & CardView to display Apple products in an organized manner with images and prices.
* Designed a clean and user-friendly UI with ScrollView, LinearLayout, EditText, Buttons, and CheckBox for easy navigation.



* 1. Validation & Navigation:
* included clear intents for switching between various tasks, including billing, payment, checkout, and product selection.
* Implicit intents were implemented to enable Google Maps users to locate Apple outlets.  
  Before continuing, input validation makes sure users submit a 10-digit phone number and accept the terms and conditions.
* messages that handle errors to notify users of incorrect input.
  1. Selection of Products and Discounts:
* With the help of RadioButtons, users can choose just one Apple product at a time.
* Put in place a dynamic pricing system that retrieves the price of the chosen product from a pre-established price list.
* There are two discount choices available to users: a 10% credit card discount or a 5% student discount.
* The chosen discount is used to determine the final pricing in real time.
  1. Procedure for Checkout:
* In the checkout form, users input their house number, shipping address, and complete name.
* Before continuing, the entered information is checked to make sure it is complete.
* The payment screen can be accessed by clicking the Confirm Order button.



* 1. Integration of Payments:
* Using RadioButtons, users can choose their chosen payment method from Google Pay, PhonePe, Net Banking, or credit/debit cards.
* The chosen payment method is shown in a confirmation message after selection.
* The transaction is completed and the billing screen is accessed by clicking the Submit Payment button.
  1. Order and Billing Confirmation:
* After payment, an order confirmation screen with a "Thank You" message appears.
* Features a toolbar menu with choices for feedback and customer service.
* Gives a confirmation message that looks like a receipt confirming that the order was placed successfully.

**4. Highlighting every Android development concept used:**

4.1 Android UI Components:

* RecyclerView & CardView → Used in activity\_product.xml to display products in a scrollable list are Android UI components.
* To guarantee seamless navigation for lengthy content, ScrollView is utilized in several activities (activity\_main.xml, activity\_item\_product.xml).
* Product photos are displayed in activity\_product.xml using ImageView.  
  EditText is utilized in activity\_checkout.xml to gather user information, such as name and address.
* Activity\_item\_product.xml and activity\_payment.xml use RadioButton & RadioGroup to choose products and payment options.
* CheckBox → Choose terms and conditions before to checkout in activity\_item\_product.xml.
* Button: This button is used for navigation throughout the app (btnSubmitPayment, btnNavigateExplicit, etc.).
* Context Menu, choices Menu, Popup Menu → Using main\_menu.xml, these menus are implemented in BillingActivity.kt and include "Customer Care" and "Feedback" choices.

4.2 Activity and Intents:

* ItemProductActivity.kt, CheckoutActivity.kt, and PaymentActivity.kt all use explicit intents to move between activities.
* BillingActivity.kt uses implicit intents for menu items like "Customer Care" and "Feedback."
* Data Transfer Between Activities → PaymentActivity.kt uses Intent.putExtra() to transmit product pricing.

4.3 Shopping Cart & Price Calculation:

* Multiple product selections are made possible by dynamic list handling -> activity\_item\_product.xml.
* Discount Calculation → Applied in ItemProductActivity.kt, where the overall price is altered by the discount percentages.
* Real-time Validation → Guarantees accurate phone inputTextView for input and error phones.
* Price Breakdown Display → ItemProductActivity.kt's resultText displays the total price after the discount.

4.4 UI State Management & Activity Lifecycle:

* Lifecycle Methods (onCreate(), onStart(), onPause(), onResume(), and onDestroy()) → Employed in every activity to handle transitions.
* When actions take place, Toast Messages are displayed (PaymentActivity.kt displays a Toast message following payment).
* SavedInstanceState → This feature makes sure that the user interface state is maintained when configuration changes are made; it is not used, but it is advised.

4.5 User Experience & Navigation:

* Back Stack Management → startActivity(intent) guarantees seamless user navigation.
* Dialog boxes (Confirmation Dialog, AlertDialog) -> Although not yet in place, it can be added for verification prior to payment.

4.6 Real-Time UI Updates:

* Live Updates to Cart → After choosing discounts, the resultText changes dynamically.
* Turn on or off the checkout button → The button's visibility varies according to the terms checkbox status.

4.7 Testing and Validation:

* Unit Testing → Suitable for testing the logic behind discount calculations.
* UI Testing → Verifies form validation and layout responsiveness.

**CODE:**

**Activity\_item\_product.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"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:background="#FAFAFA">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <!-- Store Header -->  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:fontFamily="sans-serif-medium"  
 android:text="Store."  
 android:textColor="#6F45BA"  
 android:textSize="32sp" />  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="24dp"  
 android:fontFamily="sans-serif-light"  
 android:text="Gift magic this holiday."  
 android:textColor="#666666"  
 android:textSize="28sp" />  
  
 <!-- Product Selection -->  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Select an Apple Product:"  
 android:textSize="20sp"  
 android:textColor="#333333"  
 android:layout\_marginBottom="10dp" />  
  
 <RadioGroup  
 android:id="@+id/productGroup"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical">  
  
 <RadioButton  
 android:id="@+id/productMacbook"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="MacBook - ₹100000" />  
  
 <RadioButton  
 android:id="@+id/productIphone"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="iPhone - ₹70000" />  
  
 <RadioButton  
 android:id="@+id/productAirpods"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="AirPods - ₹20000" />  
  
 <RadioButton  
 android:id="@+id/productIpad"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="iPad - ₹50000" />  
  
 <RadioButton  
 android:id="@+id/productMacStudio"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Mac Studio - ₹200000" />  
  
 <RadioButton  
 android:id="@+id/productWatch"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Apple Watch - ₹45000" />  
 </RadioGroup>  
  
 <!-- Phone Number Input -->  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Enter Your Phone Number:"  
 android:textSize="18sp"  
 android:layout\_marginTop="16dp" />  
  
 <EditText  
 android:id="@+id/phoneInput"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Enter 10-digit phone number"  
 android:inputType="number"  
 android:maxLength="10" />  
  
 <TextView  
 android:id="@+id/errorPhone"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textColor="#FF0000"  
 android:textSize="14sp"  
 android:visibility="gone" />  
  
 <!-- Discount Options -->  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Choose a Discount:"  
 android:textSize="20sp"  
 android:textColor="#333333"  
 android:layout\_marginTop="16dp" />  
  
 <RadioGroup  
 android:id="@+id/discountGroup"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content">  
  
 <RadioButton  
 android:id="@+id/discount5"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="5% Student Discount" />  
  
 <RadioButton  
 android:id="@+id/discount10"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="10% Credit Card Discount" />  
 </RadioGroup>  
  
 <!-- Terms and Conditions -->  
 <CheckBox  
 android:id="@+id/termsCheckbox"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="I accept the terms and conditions"  
 android:layout\_marginTop="16dp" />  
  
 <!-- Calculate Button -->  
 <Button  
 android:id="@+id/calculateButton"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Calculate Final Price"  
 android:layout\_marginTop="16dp"  
 android:backgroundTint="#1C8CE4"  
 android:textColor="#FFFFFF" />  
  
 <!-- Result Section -->  
 <TextView  
 android:id="@+id/resultText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textSize="18sp"  
 android:textColor="#333333"  
 android:layout\_marginTop="16dp"  
 android:text="Final Price Details Will Appear Here." />  
  
 <!-- Proceed to Checkout Button -->  
 <Button  
 android:id="@+id/checkoutButton"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Proceed to Checkout"  
 android:visibility="gone"  
 android:layout\_marginTop="20dp"  
 android:backgroundTint="#28A745"  
 android:textColor="#FFFFFF" />  
  
  
 </LinearLayout>  
</ScrollView>

**Activity\_checkout.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:orientation="vertical"  
 android:background="@drawable/kiii"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Checkout"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 android:gravity="center"/>  
  
 <EditText  
 android:id="@+id/edtName"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Full Name"  
 android:layout\_marginTop="16dp"/>  
  
 <EditText  
 android:id="@+id/edtAddress"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Shipping Address"  
 android:layout\_marginTop="8dp"/>  
  
 <EditText  
 android:id="@+id/edtCardNumber"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="House Number"  
 android:layout\_marginTop="8dp"  
 android:inputType="number"/>  
  
 <Button  
 android:id="@+id/btnConfirmOrder"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:backgroundTint="#D52D81EF"  
 android:text="Confirm Order" />  
</LinearLayout>

**Activity\_main.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:background="@drawable/jjjjjjj"  
 android:padding="16dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:layout\_marginTop="100dp"> <!-- Moves everything down -->  
  
 <!-- Moves TextView lower -->  
  
 <TextView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="50dp"  
 android:fontFamily="serif"  
 android:gravity="center"  
 android:paddingBottom="20dp"  
 android:text="Welcome to Apple Store"  
 android:textSize="24sp"  
 android:textStyle="bold|italic" />  
  
 <!-- Moves Button lower -->  
  
 <Button  
 android:id="@+id/btnNavigateExplicit"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:backgroundTint="#D52D81EF"  
 android:text="Browse Apple Products" />  
  
 <Button  
 android:id="@+id/btnNavigateImplicit"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:backgroundTint="#D52D81EF"  
 android:text="Find Apple Store" /> <!-- Moves Button lower -->  
  
 </LinearLayout>  
</ScrollView>

**Activity\_product.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"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical">  
  
 <!-- Horizontal ScrollView for Apple Products -->  
 <HorizontalScrollView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:padding="8dp">  
  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
  
 <!-- Apple Products with Names -->  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="8dp">  
 <ImageView android:layout\_width="200dp" android:layout\_height="200dp" android:src="@drawable/iphone" />  
 <TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="iPhone" android:textSize="18sp" android:gravity="center"/>  
 </LinearLayout>  
  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="8dp">  
 <ImageView android:layout\_width="200dp" android:layout\_height="200dp" android:src="@drawable/macbook" />  
 <TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="MacBook" android:textSize="18sp" android:gravity="center"/>  
 </LinearLayout>  
  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="8dp">  
 <ImageView android:layout\_width="200dp" android:layout\_height="200dp" android:src="@drawable/ipad" />  
 <TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="iPad" android:textSize="18sp" android:gravity="center"/>  
 </LinearLayout>  
  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="8dp">  
 <ImageView android:layout\_width="200dp" android:layout\_height="200dp" android:src="@drawable/airpods" />  
 <TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="AirPods" android:textSize="18sp" android:gravity="center"/>  
 </LinearLayout>  
  
 </LinearLayout>  
 </HorizontalScrollView>  
  
 <!-- Vertical ScrollView for Product Categories -->  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical">  
  
 <androidx.cardview.widget.CardView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="8dp"  
 app:cardCornerRadius="12dp"  
 app:cardElevation="8dp"  
 android:onClick="onCardClick">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <ImageView android:layout\_width="match\_parent" android:layout\_height="250dp" android:src="@drawable/watch" />  
 <TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Apple Watch Series 9" android:textSize="20sp" android:textStyle="bold" android:paddingTop="8dp" />  
 </LinearLayout>  
 </androidx.cardview.widget.CardView>  
  
 <androidx.cardview.widget.CardView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="8dp"  
 app:cardCornerRadius="12dp"  
 app:cardElevation="8dp"  
 android:onClick="onCardClick">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <ImageView android:layout\_width="match\_parent" android:layout\_height="250dp" android:src="@drawable/mac\_studio" />  
 <TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Mac Studio - Ultimate Power" android:textSize="20sp" android:textStyle="bold" android:paddingTop="8dp" />  
 </LinearLayout>  
 </androidx.cardview.widget.CardView>  
 </LinearLayout>  
  
 <!-- Navigation Button -->  
 <Button  
 android:id="@+id/btnNavigate"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Go to Details"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="20dp"/>  
 </LinearLayout>  
</ScrollView>

**itemProductActivity.kt:**

package com.example.greg  
  
import android.content.Intent  
import android.os.Bundle  
import android.widget.\*  
import androidx.appcompat.app.AppCompatActivity  
  
class ItemProductActivity : AppCompatActivity() {  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.*activity\_item\_product*)  
  
 val productGroup = findViewById<RadioGroup>(R.id.*productGroup*)  
 val discountGroup = findViewById<RadioGroup>(R.id.*discountGroup*)  
 val phoneInput = findViewById<EditText>(R.id.*phoneInput*)  
 val calculateButton = findViewById<Button>(R.id.*calculateButton*)  
 val resultText = findViewById<TextView>(R.id.*resultText*)  
 val errorPhone = findViewById<TextView>(R.id.*errorPhone*)  
 val termsCheckbox = findViewById<CheckBox>(R.id.*termsCheckbox*)  
 val checkoutButton = findViewById<Button>(R.id.*checkoutButton*)  
  
  
 calculateButton.setOnClickListener **{** val selectedProduct = findViewById<RadioButton>(productGroup.*checkedRadioButtonId*)  
 val selectedDiscount = findViewById<RadioButton>(discountGroup.*checkedRadioButtonId*)  
 val phoneNumber = phoneInput.*text*.toString()  
  
 if (phoneNumber.length != 10) {  
 errorPhone.*text* = "Enter a valid 10-digit phone number"  
 errorPhone.*visibility* = TextView.*VISIBLE* return@setOnClickListener  
 } else {  
 errorPhone.*visibility* = TextView.*GONE* }  
  
 val priceMap = *mapOf*(  
 R.id.*productMacbook to* 100000,  
 R.id.*productIphone to* 70000,  
 R.id.*productAirpods to* 20000,  
 R.id.*productIpad to* 50000,  
 R.id.*productMacStudio to* 200000,  
 R.id.*productWatch to* 45000  
 )  
  
 val price = priceMap[selectedProduct?.*id*] ?: 0  
 val discount = when (selectedDiscount?.*id*) {  
 R.id.*discount5* -> 5  
 R.id.*discount10* -> 10  
 else -> 0  
 }  
  
 val finalPrice = price - (price \* discount / 100)  
 resultText.*text* = "Final Price: ₹$finalPrice"  
  
 checkoutButton.*visibility* = Button.*VISIBLE* **}** checkoutButton.setOnClickListener **{** val intent = Intent(this, CheckoutActivity::class.*java*)  
 startActivity(intent)  
 **}** }  
}

**activity\_payment.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:orientation="vertical"  
 android:background="@drawable/kdjd"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Payment"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 android:gravity="center"/>  
  
 <RadioGroup  
 android:id="@+id/paymentGroup"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp">  
  
 <RadioButton  
 android:id="@+id/rbGPay"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Google Pay" />  
  
 <RadioButton  
 android:id="@+id/rbPhonePe"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="PhonePe" />  
  
 <RadioButton  
 android:id="@+id/rbNetBanking"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Net Banking" />  
  
 <RadioButton  
 android:id="@+id/rbCard"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Credit/Debit Card" />  
 </RadioGroup>  
  
 <Button  
 android:id="@+id/btnSubmitPayment"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:backgroundTint="#D52D81EF"  
 android:text="Submit Payment" />  
  
</LinearLayout>

**PaymentActivity.kt:**package com.example.greg  
  
  
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 android.widget.Toast  
import androidx.appcompat.app.AppCompatActivity  
  
class PaymentActivity : AppCompatActivity() {  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.*activity\_payment*)  
  
  
 val paymentGroup: RadioGroup = findViewById(R.id.*paymentGroup*)  
 val btnSubmitPayment: Button = findViewById(R.id.*btnSubmitPayment*)  
  
  
  
 btnSubmitPayment.setOnClickListener **{** val selectedPaymentId = paymentGroup.*checkedRadioButtonId* if (selectedPaymentId == -1) {  
 Toast.makeText(this, "Please select a payment method", Toast.*LENGTH\_SHORT*).show()  
 return@setOnClickListener  
 }  
  
 val selectedPayment: RadioButton = findViewById(selectedPaymentId)  
 Toast.makeText(this, "Payment via ${selectedPayment.*text*} Successful!", Toast.*LENGTH\_LONG*).show()  
  
 // Navigate to Billing Activity  
 val intent = Intent(this, BillingActivity::class.*java*)  
 startActivity(intent)  
 finish()  
 **}** }  
}

**Activity\_billing.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:orientation="vertical"  
 android:background="@drawable/hiiii">  
 android:padding="16dp">  
  
 <!-- Toolbar for Menu -->  
 <androidx.appcompat.widget.Toolbar  
 android:id="@+id/toolbar"  
 android:layout\_width="match\_parent"  
 android:layout\_height="?attr/actionBarSize"  
 android:background="#EF2E91F4"  
 app:title="Billing"  
 app:titleTextColor="@android:color/white" />  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Thank You!"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 android:gravity="center"  
 android:layout\_marginTop="32dp"/>  
  
 <TextView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Your order has been placed successfully."  
 android:textSize="18sp"  
 android:gravity="center"  
 android:layout\_marginTop="16dp"/>  
  
</LinearLayout>

**BillingActivity.kt:**

package com.example.greg  
  
  
import android.os.Bundle  
import android.view.Menu  
import android.view.MenuItem  
import android.widget.Toast  
import androidx.appcompat.app.AppCompatActivity  
import androidx.appcompat.widget.Toolbar  
  
class BillingActivity : AppCompatActivity() {  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.*activity\_billing*)  
  
 // Set up the Toolbar  
 val toolbar = findViewById<Toolbar>(R.id.*toolbar*)  
 setSupportActionBar(toolbar)  
 }  
  
 // Inflate the menu  
 override fun onCreateOptionsMenu(menu: Menu?): Boolean {  
 *menuInflater*.inflate(R.menu.*main\_menu*, menu)  
 return true  
 }  
  
 // Handle menu item clicks  
 override fun onOptionsItemSelected(item: MenuItem): Boolean {  
 return when (item.*itemId*) {  
 R.id.*customer\_care* -> {  
 Toast.makeText(this, "Customer Care selected", Toast.*LENGTH\_SHORT*).show()  
 true  
 }  
 R.id.*feedback* -> {  
 Toast.makeText(this, "Feedback selected", Toast.*LENGTH\_SHORT*).show()  
 true  
 }  
 else -> super.onOptionsItemSelected(item)  
 }  
 }  
}

**main\_menu.xml:**

<?xml version="1.0" encoding="utf-8"?>  
<menu xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto">  
  
 <item  
 android:id="@+id/customer\_care"  
 android:title="Customer Care"  
 android:icon="@android:drawable/ic\_menu\_call"  
 app:showAsAction="never"/>  
  
 <item  
 android:id="@+id/feedback"  
 android:title="Feedback"  
 android:icon="@android:drawable/ic\_menu\_edit"  
 app:showAsAction="never"/>  
</menu>

**5. Goal and Useful Relevance (Impact of the Application):** The e-commerce app gives Apple users a more efficient way to shop. By incorporating dynamic discounts, real-time user interface modifications, and a secure payment channel, it improves usability. The application is an effective and user-friendly platform since it adheres to best practices for UI/UX design and user validation.

**6. In summary:** our Android e-commerce app effectively incorporates key shopping features such product selection, pricing computation, checkout, payment, and invoicing. A stable and smooth user experience is guaranteed by the incorporation of contemporary UI elements, lifecycle management, and validation methodologies. Order tracking, online payment gateway integration, and a user identification system for customized shopping are examples of potential future improvements.