https://lh7-rt.googleusercontent.com/docsz/AD_4nXd_ULb5sgkYyPqzpyKpVZEnyJybfbTC0Gcq7O-1yy015o6OREOzjkTr42-bDpebz3oybsbdqFUdxRmwtW_7QT3zcADvhuvy3fgZmZw1gE19Teq6UL2knv5tPyJ1MfOG5G7t2g23?key=3Xh11yXCfXhL3UTxJWg91Q

E.A.R.I.S.T.

NAGTAHAN, MANILA

College of Computing Studies

Department of Information Technology 

**User's Manual for FarmaKita Mobile Application**

***FarmaKita — A Mobile-Based Crop Profit Calculator for Smallholder Farmers***

***GROUP 6***

**Group Leader:**

Delos Santos, Ken B.

**Members:**

Lomocso, Jomar

Magbitang, Chester

Wong, Carl Lester

**Introduction**

Welcome to FarmaKita, a mobile application designed to help small-scale farmers easily calculate and understand the profitability of their crops. Whether you're planting rice, vegetables, or fruits, this app makes it simple to estimate your earnings by letting you input costs like seeds, fertilizer, labor, and your expected selling price. FarmaKita is built to support farmers in making smarter financial decisions and improving overall farm productivity.

This user guide is written to help new users get started with the app—step-by-step. From opening the app for the first time to using its main feature, the Crop Profit Calculator, this guide explains everything in a clear and simple way, just like how students write project instructions—easy to follow and practical. By the end of this manual, you’ll know how to use FarmaKita to plan your farming expenses, calculate potential profits, and take control of your farm’s financial success.

## Main Menu Features (Buttons on Home Screen)

### 🔸 Farming Tips

* Browse basic agricultural tips and best practices.
* Helpful for new farmers looking for guidance.

### 🔸 Inventory

* Add and view items like seeds, fertilizers, or tools.
* Input name, quantity, and notes for each item.

### 🔸 Activity Log

* Record farming tasks like planting, watering, or harvesting.
* View past activities for tracking productivity.

### 🔸 Task Reminder

* Set reminders for upcoming farm tasks.
* Choose date, time, and task description.

### 🔸 Expense Tracker

* Log costs related to seeds, labor, fertilizer, etc.
* View your total expenses by category.

### 🔸 Journal

* Write daily notes or farm reflections.
* Can be used to track crop growth and weather notes.

## Footer Navigation Tabs

### 🔸 Home

* Main dashboard showing quick access tiles and user info.

### 🔸 Crop Calculator

* Input:
  + Crop name
  + Land size (hectares)
  + Seed cost, fertilizer cost, labor cost
  + Selling price per kg
  + Expected yield (kg/hectare)
* Output:
  + Total Expense
  + Total Revenue
  + Net Profit
  + Profit Margin (%)

### 🔸 Market

* (Optional) Placeholder for local market prices or crop selling tips.

### 🔸 Trends

* (Optional) Graphs or advice for seasonal planning or yield tracking.

### 🔸 Profile

* View and edit user details.

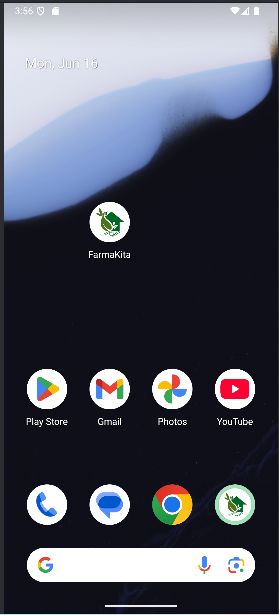
**Figure 1**

**Module Name: Splash Screen**

**Narrative Description:**

The FarmaKita logo features a symbolic fusion of nature and livelihood, represented by a green droplet-shaped leaf forming a house structure—conveying both agricultural life and the idea of farming as a livelihood rooted in the home. The sprouting leaves and organic curves within the logo highlight growth, sustainability, and natural harmony, while the house silhouette suggests security and support for smallholder farmers. Beneath the icon, the brand name "FarmaKita" is displayed in a friendly, nature-inspired font, reinforcing the app’s approachable and farmer-centered identity. On the splash screen, this logo stands prominently against a clean white background, offering a fresh and calming visual experience that reflects the app’s mission: to simplify farming decisions and improve financial awareness for local farmers.

**Screenshots**



**Source Code**

**Activity\_splash.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"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:background="@color/white">  
  
 <ImageView  
 android:id="@+id/ivLogo"  
 android:layout\_width="200dp"  
 android:layout\_height="200dp"  
 android:src="@drawable/farm\_logo"  
 android:contentDescription="Farm Logo"  
 app:layout\_constraintBottom\_toTopOf="@+id/tvTitle"  
 app:layout\_constraintLeft\_toLeftOf="parent"  
 app:layout\_constraintRight\_toRightOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_chainStyle="packed" />  
  
 <TextView  
 android:id="@+id/tvTitle"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="18dp"  
 android:fontFamily="@font/merienda\_black"  
 android:text="FarmaKita"  
 android:textColor="#16610E"  
 android:textSize="52sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintLeft\_toLeftOf="parent"  
 app:layout\_constraintRight\_toRightOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/ivLogo" />  
  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**SplashActivity.kt**

package com.example.farmkita  
  
import android.content.Intent  
import android.os.Bundle  
import android.os.Handler  
import android.os.Looper  
import androidx.appcompat.app.AppCompatActivity  
import com.example.farmkita.databinding.ActivitySplashBinding  
import com.google.firebase.auth.FirebaseAuth  
import com.google.firebase.auth.ktx.auth  
import com.google.firebase.ktx.Firebase  
  
class SplashActivity : AppCompatActivity() {  
 private lateinit var binding: ActivitySplashBinding  
 private lateinit var auth: FirebaseAuth  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 binding = ActivitySplashBinding.inflate(*layoutInflater*)  
 setContentView(binding.*root*)  
  
 auth = Firebase.*auth* // Show splash screen for 2 seconds  
 Handler(Looper.getMainLooper()).postDelayed(**{** if (auth.*currentUser* != null) {  
 // User is logged in, go to HomeActivity  
 startActivity(Intent(this, HomeActivity::class.*java*).*apply* **{** addFlags(Intent.*FLAG\_ACTIVITY\_CLEAR\_TOP* or Intent.*FLAG\_ACTIVITY\_NEW\_TASK*)  
 **}**)  
 } else {  
 // User is not logged in, go to MainActivity  
 startActivity(Intent(this, MainActivity::class.*java*))  
 }  
 finish()  
 **}**, 2000) // 2 seconds delay  
 }  
}

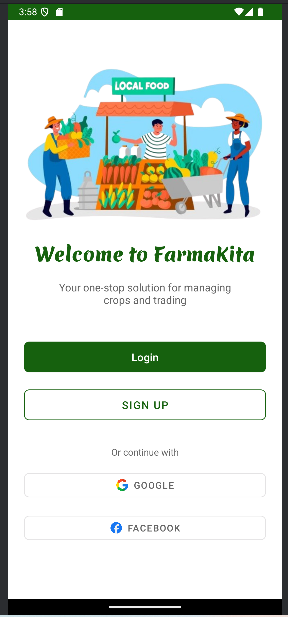
**Figure 2**

**Module Name: Login/Sign-up Screen**

**Narrative Description:**

The login/signup screen of FarmaKita presents an inviting and functional entry point, seamlessly blending visual storytelling with usability. A vibrant illustration of a local food market stall captures the essence of community-driven agricultural trade, reinforcing the app’s mission to support farmers in crop management and commerce. Below, a warm welcome message sets a friendly tone, guiding users through clearly structured login and signup options, while Google and Facebook integration offers seamless access. The design embraces organic aesthetics, ensuring clarity and accessibility through intuitive layouts, thoughtful font choices, and user-friendly buttons. Every element—from the welcoming imagery to the streamlined interface—reflects FarmaKita’s commitment to making farming decisions simple while fostering a digital space rooted in agricultural livelihood.

**Screenshots**



**Source Code**

**Activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.coordinatorlayout.widget.CoordinatorLayout  
 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="@color/white">  
  
 <ScrollView  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:fillViewport="true">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="24dp"  
 android:gravity="center">  
  
 <ImageView  
 android:layout\_width="700dp"  
 android:layout\_height="250dp"  
 android:src="@drawable/harvest\_man"  
 android:layout\_marginTop="8dp"  
 android:layout\_marginBottom="12dp"  
 android:contentDescription="Harvest"/>  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Welcome to FarmaKita"  
 android:textSize="28sp"  
 android:textStyle="bold"  
 android:fontFamily="@font/merienda\_black"  
 android:textColor="#16610E"  
 android:layout\_marginBottom="16dp"/>  
  
 <TextView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Your one-stop solution for managing crops and trading"  
 android:textSize="16sp"  
 android:textAlignment="center"  
 android:textColor="#666666"  
 android:paddingStart="32dp"  
 android:paddingEnd="32dp"  
 android:layout\_marginBottom="48dp"/>  
  
 <com.google.android.material.button.MaterialButton  
 android:id="@+id/loginButton"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Login"  
 android:layout\_marginBottom="16dp"/>  
  
 <TextView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="or"  
 android:gravity="center"  
 android:layout\_marginVertical="16dp"  
 android:textColor="@color/farmakita\_gray"/>  
  
 <TextView  
 android:id="@+id/signupButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_marginBottom="20dp"  
 android:padding="8dp"  
 android:text="Create an account"  
 android:textColor="@color/farmakita\_green"  
 android:textSize="20sp"  
 android:textStyle="bold" />  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Or continue with"  
 android:textColor="#666666"  
 android:layout\_marginBottom="16dp"/>  
  
 <com.google.android.material.button.MaterialButton  
 android:id="@+id/googleSignInButton"  
 style="@style/Widget.MaterialComponents.Button.OutlinedButton"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 android:text="Google"  
 android:textColor="#666666"  
 app:icon="@drawable/ic\_google"  
 app:iconGravity="textStart"  
 app:iconPadding="8dp"  
 app:iconTint="@null"  
 app:cornerRadius="8dp"/>  
  
 <com.google.android.material.button.MaterialButton  
 android:id="@+id/facebookSignInButton"  
 style="@style/Widget.MaterialComponents.Button.OutlinedButton"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="32dp"  
 android:text="Facebook"  
 android:textColor="#666666"  
 app:icon="@drawable/ic\_facebook"  
 app:iconGravity="textStart"  
 app:iconPadding="8dp"  
 app:iconTint="@null"  
 app:cornerRadius="8dp"/>  
  
 </LinearLayout>  
 </ScrollView>  
</androidx.coordinatorlayout.widget.CoordinatorLayout>

**MainActivity.kt**

package com.example.farmkita  
  
import android.content.Intent  
import android.os.Bundle  
import androidx.appcompat.app.AppCompatActivity  
import com.example.farmkita.databinding.ActivityMainBinding  
import com.google.firebase.auth.FirebaseAuth  
import com.google.firebase.auth.ktx.auth  
import com.google.firebase.ktx.Firebase  
  
class MainActivity : AppCompatActivity() {  
 private lateinit var binding: ActivityMainBinding  
 private lateinit var auth: FirebaseAuth  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 binding = ActivityMainBinding.inflate(*layoutInflater*)  
 setContentView(binding.*root*)  
  
 auth = Firebase.*auth* // Check if user is already logged in  
 if (auth.*currentUser* != null) {  
 navigateToHome()  
 return  
 }  
  
 setupClickListeners()  
 }  
  
 private fun setupClickListeners() {  
 binding.loginButton.setOnClickListener **{** startActivity(Intent(this, LoginActivity::class.*java*))  
 **}** binding.signupButton.setOnClickListener **{** startActivity(Intent(this, SignUpActivity::class.*java*))  
 **}** binding.googleSignInButton.setOnClickListener **{** // *TODO: Implement Google Sign In* // For now, just show a message  
 android.widget.Toast.makeText(this, "Google Sign In coming soon", android.widget.Toast.*LENGTH\_SHORT*).show()  
 **}** }  
  
 private fun navigateToHome() {  
 try {  
 val intent = Intent(this, HomeActivity::class.*java*).*apply* **{** addFlags(Intent.*FLAG\_ACTIVITY\_CLEAR\_TOP* or Intent.*FLAG\_ACTIVITY\_NEW\_TASK*)  
 **}** startActivity(intent)  
 finish()  
 } catch (e: Exception) {  
 // If HomeActivity is not available, stay on MainActivity  
 e.printStackTrace()  
 }  
 }  
}

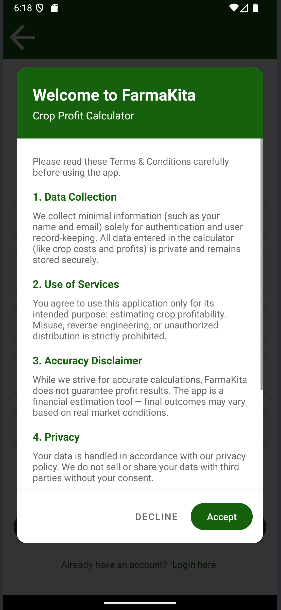
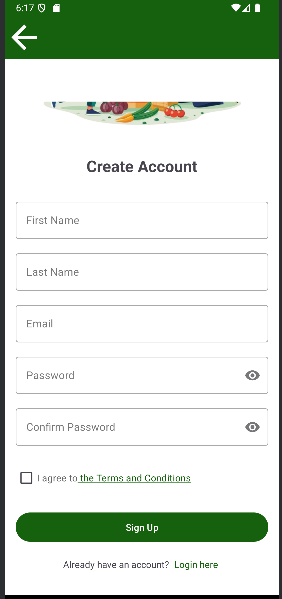
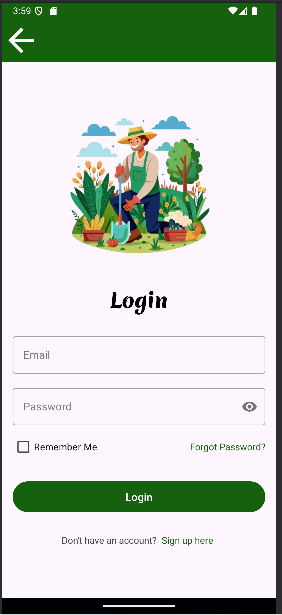
**Figure 3**

**Module Name: Login & Sign-up Page**

**Narrative Description:**

The login and account creation experience of FarmaKita is designed for seamless access and user-friendly interaction. The login screen features a clean, structured layout, allowing users to enter their credentials or opt for quick sign-in methods via Google and Facebook. Those new to the platform can easily transition into the account creation process, where essential fields such as name, email, and password are presented intuitively. A Terms and Conditions agreement ensures transparency, helping users understand the security and data policies before joining. With a balanced mix of accessibility and structure, this onboarding flow ensures that farmers and traders can efficiently navigate their entry into the platform.

Before accessing key tools like the Crop Profit Calculator, users are introduced to FarmaKita’s core service policies through a dedicated Terms & Conditions screen. This section outlines vital details on data privacy, service accuracy, and ethical usage, reinforcing trust and informed decision-making. Users are given the choice to accept or decline, ensuring control over their digital farming experience. The overall design embraces a farmer-centric approach, balancing simplicity with reliability to empower users in managing their crops and finances effectively.

**Screenshots**

**Source Code**

**Activity\_login.xml**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.coordinatorlayout.widget.CoordinatorLayout  
 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">  
 <!-- Header Toolbar -->  
 <com.google.android.material.appbar.MaterialToolbar  
 android:id="@+id/toolbar"  
 android:layout\_width="match\_parent"  
 android:layout\_height="?attr/actionBarSize"  
 android:background="?attr/colorPrimary"  
 android:title="Login"  
 android:titleTextColor="@android:color/white"  
 app:navigationIcon="@drawable/ic\_arrow\_back\_small" />  
  
 <!-- Main Content ScrollView -->  
 <ScrollView  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:layout\_marginTop="?attr/actionBarSize"  
 android:fillViewport="true">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp"  
 android:gravity="center">  
  
 <ImageView  
 android:layout\_width="320dp"  
 android:layout\_height="220dp"  
 android:src="@drawable/ic\_loginsticker"  
 android:layout\_marginBottom="32dp"/>  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="24dp"  
 android:fontFamily="@font/merienda\_black"  
 android:text="Login"  
 android:textColor="@android:color/black"  
 android:textSize="30sp"  
 android:textStyle="bold" />  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/emailLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 android:hint="Email">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/emailEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="textEmailAddress" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/passwordLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="8dp"  
 android:hint="Password"  
 app:endIconMode="password\_toggle">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/passwordEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="textPassword" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:layout\_marginBottom="24dp">  
  
 <CheckBox  
 android:id="@+id/rememberMeCheckbox"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Remember Me"  
 android:textColor="@android:color/black" />  
  
 <Space  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1" />  
  
 <TextView  
 android:id="@+id/forgotPasswordText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Forgot Password?"  
 android:textColor="@color/farmakita\_green"  
 android:textSize="14sp" />  
 </LinearLayout>  
  
 <com.google.android.material.button.MaterialButton  
 android:id="@+id/loginButton"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="24dp"  
 android:padding="12dp"  
 android:text="Login"  
 android:textSize="16sp" />  
  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:gravity="center">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Don't have an account? "/>  
  
 <TextView  
 android:id="@+id/signUpText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Sign up here"  
 android:textColor="@color/farmakita\_green"  
 android:padding="4dp"/>  
 </LinearLayout>  
  
 </LinearLayout>  
</ScrollView>  
</androidx.coordinatorlayout.widget.CoordinatorLayout>

**LoginActivity.kt**

package com.example.farmkita  
  
import android.content.Intent  
import android.os.Bundle  
import android.text.TextUtils  
import android.util.Log  
import android.widget.Toast  
import androidx.appcompat.app.AppCompatActivity  
import com.example.farmkita.databinding.ActivityLoginBinding  
import com.google.firebase.auth.FirebaseAuth  
import com.google.firebase.auth.ktx.auth  
import com.google.firebase.database.ktx.database  
import com.google.firebase.ktx.Firebase  
  
class LoginActivity : AppCompatActivity() {  
 private lateinit var binding: ActivityLoginBinding  
 private lateinit var auth: FirebaseAuth  
 private val database = Firebase.database.reference  
  
 companion object {  
 private const val TAG = "LoginActivity"  
 }  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 binding = ActivityLoginBinding.inflate(layoutInflater)  
 setContentView(binding.root)  
  
 auth = Firebase.auth  
  
 // Check if user is already logged in  
 if (auth.currentUser != null) {  
 navigateToHome()  
 return  
 }  
  
 setupToolbar()  
 setupClickListeners()  
 }  
  
 private fun setupToolbar() {  
 setSupportActionBar(binding.toolbar)  
 supportActionBar?.apply **{** setDisplayShowTitleEnabled(false)  
 setDisplayHomeAsUpEnabled(true)  
 **}** binding.toolbar.setNavigationOnClickListener **{** onBackPressed()  
 **}** }  
  
 private fun setupClickListeners() {  
 binding.loginButton.setOnClickListener **{** loginUser() **}** binding.signUpText.setOnClickListener **{** startActivity(Intent(this, SignUpActivity::class.java))  
 **}** binding.forgotPasswordText.setOnClickListener **{** resetPassword() **}** }  
  
 private fun loginUser() {  
 val email = binding.emailEditText.text.toString().trim()  
 val password = binding.passwordEditText.text.toString().trim()  
  
 // Validate input  
 if (TextUtils.isEmpty(email)) {  
 binding.emailLayout.error = "Email is required"  
 return  
 }  
 if (TextUtils.isEmpty(password)) {  
 binding.passwordLayout.error = "Password is required"  
 return  
 }  
  
 // Show loading state  
 binding.loginButton.isEnabled = false  
 binding.loginButton.text = "Logging in..."  
  
 // Sign in with email and password  
 auth.signInWithEmailAndPassword(email, password)  
 .addOnCompleteListener(this) **{** task **->** binding.loginButton.isEnabled = true  
 binding.loginButton.text = "Login"  
  
 if (task.isSuccessful) {  
 navigateToHome()  
 } else {  
 Log.e(TAG, "Login failed: ${task.exception?.message}", task.exception)  
 Toast.makeText(  
 this,  
 "Login failed: ${task.exception?.message}",  
 Toast.LENGTH\_SHORT  
 ).show()  
 }  
 **}** }  
  
 private fun resetPassword() {  
 val email = binding.emailEditText.text.toString().trim()  
  
 if (TextUtils.isEmpty(email)) {  
 binding.emailLayout.error = "Email is required"  
 return  
 }  
  
 auth.sendPasswordResetEmail(email)  
 .addOnCompleteListener **{** task **->** if (task.isSuccessful) {  
 Toast.makeText(  
 this,  
 "Password reset email sent. Please check your email.",  
 Toast.LENGTH\_LONG  
 ).show()  
 } else {  
 Log.e(TAG, "Password reset failed: ${task.exception?.message}", task.exception)  
 Toast.makeText(  
 this,  
 "Password reset failed: ${task.exception?.message}",  
 Toast.LENGTH\_SHORT  
 ).show()  
 }  
 **}** }  
  
 private fun navigateToHome() {  
 try {  
 val intent = Intent(this, HomeActivity::class.java).apply **{** addFlags(Intent.FLAG\_ACTIVITY\_CLEAR\_TOP or Intent.FLAG\_ACTIVITY\_NEW\_TASK)  
 **}** startActivity(intent)  
 finish()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error navigating to home: ${e.message}", e)  
 Toast.makeText(this, "Error navigating to home: ${e.message}", Toast.LENGTH\_LONG).show()  
 }  
 }  
  
 override fun onBackPressed() {  
 try {  
 super.onBackPressed()  
 startActivity(Intent(this, MainActivity::class.java))  
 finish()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error in onBackPressed: ${e.message}", e)  
 }  
 }  
}

**activity\_sign\_up.xml**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.coordinatorlayout.widget.CoordinatorLayout 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="@color/white">  
  
 <com.google.android.material.appbar.AppBarLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:background="@android:color/transparent"  
 app:elevation="0dp">  
  
 <com.google.android.material.appbar.MaterialToolbar  
 android:id="@+id/toolbar"  
 android:layout\_width="match\_parent"  
 android:layout\_height="?attr/actionBarSize"  
 android:background="?attr/colorPrimary"  
 android:titleTextColor="@android:color/white"  
 app:navigationIcon="@drawable/ic\_arrow\_back\_small" />  
  
 </com.google.android.material.appbar.AppBarLayout>  
  
 <androidx.core.widget.NestedScrollView  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:layout\_marginTop="?attr/actionBarSize"  
 android:fillViewport="true"  
 app:layout\_behavior="@string/appbar\_scrolling\_view\_behavior">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp"  
 android:gravity="center">  
  
 <ImageView  
 android:layout\_width="320dp"  
 android:layout\_height="220dp"  
 android:src="@drawable/ic\_signupsticker"  
 android:layout\_marginBottom="32dp"/>  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Create Account"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 android:layout\_marginBottom="32dp"/>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/firstNameLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 android:hint="First Name">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/firstNameEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="textPersonName" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/lastNameLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 android:hint="Last Name">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/lastNameEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="textPersonName" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/emailLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 android:hint="Email">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/emailEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="textEmailAddress" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/passwordLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 android:hint="Password"  
 app:endIconMode="password\_toggle">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/passwordEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="textPassword" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/confirmPasswordLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="24dp"  
 android:hint="Confirm Password"  
 app:endIconMode="password\_toggle">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/confirmPasswordEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="textPassword" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.checkbox.MaterialCheckBox  
 android:id="@+id/termsCheckBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="24dp"  
 android:text="I agree to the Terms and Conditions"  
 android:textColor="#666666"/>  
  
 <com.google.android.material.button.MaterialButton  
 android:id="@+id/signUpButton"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Sign Up"  
 android:padding="12dp"  
 android:layout\_marginBottom="16dp"/>  
  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:gravity="center"  
 android:layout\_marginBottom="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Already have an account? "/>  
  
 <TextView  
 android:id="@+id/loginText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Login here"  
 android:textColor="@color/farmakita\_green"  
 android:padding="4dp"/>  
 </LinearLayout>  
  
 </LinearLayout>  
  
 </androidx.core.widget.NestedScrollView>  
  
 <com.google.android.material.progressindicator.CircularProgressIndicator  
 android:id="@+id/progressBar"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:indeterminate="true"  
 android:visibility="gone" />  
  
</androidx.coordinatorlayout.widget.CoordinatorLayout>

**SignupActivity.kt**

package com.example.farmkita  
  
import android.app.Dialog  
import android.content.Intent  
import android.graphics.Color  
import android.graphics.drawable.ColorDrawable  
import android.os.Bundle  
import android.text.SpannableString  
import android.text.Spanned  
import android.text.TextPaint  
import android.text.method.LinkMovementMethod  
import android.text.style.ClickableSpan  
import android.util.Log  
import android.view.MenuItem  
import android.view.View  
import android.view.Window  
import android.widget.ScrollView  
import android.widget.TextView  
import android.widget.Toast  
import androidx.appcompat.app.AlertDialog  
import androidx.appcompat.app.AppCompatActivity  
import com.example.farmkita.databinding.ActivitySignUpBinding  
import com.example.farmkita.databinding.DialogTermsConditionsBinding  
import com.google.android.material.dialog.MaterialAlertDialogBuilder  
import com.google.firebase.auth.FirebaseAuth  
import com.google.firebase.auth.ktx.auth  
import com.google.firebase.database.ktx.database  
import com.google.firebase.ktx.Firebase  
  
class SignUpActivity : AppCompatActivity() {  
 private lateinit var binding: ActivitySignUpBinding  
 private lateinit var auth: FirebaseAuth  
 private val database = Firebase.*database*.*reference* private var termsAccepted = false  
  
 companion object {  
 private const val TAG = "SignUpActivity"  
 }  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 try {  
 binding = ActivitySignUpBinding.inflate(*layoutInflater*)  
 setContentView(binding.*root*)  
 auth = Firebase.*auth* // If user is already logged in, redirect to Home  
 if (auth.*currentUser* != null) {  
 navigateToHome()  
 return  
 }  
  
 setupToolbar()  
 setupTermsAndConditions()  
 setupClickListeners()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error in onCreate: ${e.message}", e)  
 Toast.makeText(this, "Error initializing sign up: ${e.message}", Toast.*LENGTH\_LONG*).show()  
 finish()  
 }  
 }  
  
 private fun setupToolbar() {  
 try {  
 setSupportActionBar(binding.toolbar)  
 *supportActionBar*?.*apply* **{** setDisplayHomeAsUpEnabled(true)  
 setDisplayShowHomeEnabled(true)  
 setDisplayShowTitleEnabled(false)  
 **}** } catch (e: Exception) {  
 Log.e(TAG, "Error setting up toolbar: ${e.message}", e)  
 }  
 }  
  
 private fun setupTermsAndConditions() {  
 try {  
 val termsText = "I agree to the Terms and Conditions"  
 val spannableString = SpannableString(termsText)  
 val clickableSpan = object : ClickableSpan() {  
 override fun onClick(widget: View) {  
 showTermsAndConditionsDialog()  
 }  
  
 override fun updateDrawState(ds: TextPaint) {  
 super.updateDrawState(ds)  
 ds.*isUnderlineText* = true  
 ds.*color* = getColor(R.color.*farmakita\_green*)  
 }  
 }  
 spannableString.setSpan(clickableSpan, 10, termsText.length, Spanned.*SPAN\_EXCLUSIVE\_EXCLUSIVE*)  
 binding.termsCheckBox.*text* = spannableString  
 binding.termsCheckBox.*movementMethod* = LinkMovementMethod.getInstance()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error setting up terms: ${e.message}", e)  
 }  
 }  
  
 private fun showTermsAndConditionsDialog() {  
 try {  
 val dialog = Dialog(this)  
 dialog.requestWindowFeature(Window.*FEATURE\_NO\_TITLE*)  
 val dialogBinding = DialogTermsConditionsBinding.inflate(*layoutInflater*)  
 dialog.setContentView(dialogBinding.*root*)  
   
 dialog.*window*?.*apply* **{** setBackgroundDrawable(ColorDrawable(Color.*TRANSPARENT*))  
 *attributes* = *attributes*.*apply* **{** width = (*resources*.*displayMetrics*.widthPixels \* 0.9).toInt()  
 height = (*resources*.*displayMetrics*.heightPixels \* 0.8).toInt()  
 **}  
 }** dialog.setCancelable(false)  
 dialog.setCanceledOnTouchOutside(false)  
  
 dialogBinding.acceptButton.setOnClickListener **{** termsAccepted = true  
 binding.termsCheckBox.*isChecked* = true  
 dialog.dismiss()  
 showAcceptanceConfirmation()  
 **}** dialogBinding.declineButton.setOnClickListener **{** termsAccepted = false  
 binding.termsCheckBox.*isChecked* = false  
 dialog.dismiss()  
 **}** dialog.show()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error showing terms dialog: ${e.message}", e)  
 Toast.makeText(this, "Error showing terms: ${e.message}", Toast.*LENGTH\_SHORT*).show()  
 }  
 }  
  
 private fun showAcceptanceConfirmation() {  
 try {  
 MaterialAlertDialogBuilder(this)  
 .setTitle("Terms Accepted")  
 .setMessage("You have accepted the Terms and Conditions. You can now proceed with creating your account.")  
 .setPositiveButton("OK", null)  
 .show()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error showing acceptance confirmation: ${e.message}", e)  
 }  
 }  
  
 private fun setupClickListeners() {  
 try {  
 binding.signUpButton.setOnClickListener **{** if (validateInputs()) {  
 signUp()  
 }  
 **}** binding.loginText.setOnClickListener **{** finish()  
 **}** binding.termsCheckBox.setOnCheckedChangeListener **{** \_, isChecked **->** if (isChecked && !termsAccepted) {  
 showTermsAndConditionsDialog()  
 binding.termsCheckBox.*isChecked* = false  
 } else if (!isChecked) {  
 termsAccepted = false  
 }  
 **}** } catch (e: Exception) {  
 Log.e(TAG, "Error setting up click listeners: ${e.message}", e)  
 }  
 }  
  
 private fun validateInputs(): Boolean {  
 try {  
 var isValid = true  
  
 *with*(binding) **{** // Validate first name  
 if (firstNameEditText.*text*.*toString*().*trim*().*isEmpty*()) {  
 firstNameLayout.*error* = "Please enter your first name"  
 isValid = false  
 } else {  
 firstNameLayout.*error* = null  
 }  
  
 // Validate last name  
 if (lastNameEditText.*text*.*toString*().*trim*().*isEmpty*()) {  
 lastNameLayout.*error* = "Please enter your last name"  
 isValid = false  
 } else {  
 lastNameLayout.*error* = null  
 }  
  
 // Validate email  
 val email = emailEditText.*text*.*toString*().*trim*()  
 if (email.*isEmpty*()) {  
 emailLayout.*error* = "Please enter your email"  
 isValid = false  
 } else if (!android.util.Patterns.*EMAIL\_ADDRESS*.matcher(email).matches()) {  
 emailLayout.*error* = "Please enter a valid email"  
 isValid = false  
 } else {  
 emailLayout.*error* = null  
 }  
  
 // Validate password  
 val password = passwordEditText.*text*.*toString*()  
 if (password.*isEmpty*()) {  
 passwordLayout.*error* = "Please enter a password"  
 isValid = false  
 } else if (password.length < 6) {  
 passwordLayout.*error* = "Password must be at least 6 characters"  
 isValid = false  
 } else {  
 passwordLayout.*error* = null  
 }  
  
 // Validate confirm password  
 val confirmPassword = confirmPasswordEditText.*text*.*toString*()  
 if (confirmPassword.*isEmpty*()) {  
 confirmPasswordLayout.*error* = "Please confirm your password"  
 isValid = false  
 } else if (confirmPassword != password) {  
 confirmPasswordLayout.*error* = "Passwords do not match"  
 isValid = false  
 } else {  
 confirmPasswordLayout.*error* = null  
 }  
  
 // Validate terms and conditions  
 if (!termsCheckBox.*isChecked*) {  
 showTermsNotAcceptedDialog()  
 isValid = false  
 }  
 **}** return isValid  
 } catch (e: Exception) {  
 Log.e(TAG, "Error validating inputs: ${e.message}", e)  
 Toast.makeText(this, "Error validating inputs: ${e.message}", Toast.*LENGTH\_SHORT*).show()  
 return false  
 }  
 }  
  
 private fun showTermsNotAcceptedDialog() {  
 try {  
 MaterialAlertDialogBuilder(this)  
 .setTitle("Terms Required")  
 .setMessage("You must accept the Terms and Conditions to create an account.")  
 .setPositiveButton("View Terms") **{** \_, \_ **->** showTermsAndConditionsDialog()  
 **}** .setNegativeButton("Cancel", null)  
 .show()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error showing terms dialog: ${e.message}", e)  
 Toast.makeText(this, "Please accept the Terms and Conditions", Toast.*LENGTH\_SHORT*).show()  
 }  
 }  
  
 private fun signUp() {  
 try {  
 binding.progressBar.*visibility* = View.*VISIBLE* binding.signUpButton.*isEnabled* = false  
  
 val email = binding.emailEditText.*text*.*toString*().*trim*()  
 val password = binding.passwordEditText.*text*.*toString*()  
 val firstName = binding.firstNameEditText.*text*.*toString*().*trim*()  
 val lastName = binding.lastNameEditText.*text*.*toString*().*trim*()  
 val fullName = "$firstName $lastName"  
  
 auth.createUserWithEmailAndPassword(email, password)  
 .addOnCompleteListener(this) **{** task **->** try {  
 binding.progressBar.*visibility* = View.*GONE* binding.signUpButton.*isEnabled* = true  
  
 if (task.*isSuccessful*) {  
 // Update user profile with full name  
 val user = auth.*currentUser* val profileUpdates = com.google.firebase.auth.UserProfileChangeRequest.Builder()  
 .setDisplayName(fullName)  
 .build()  
  
 user?.updateProfile(profileUpdates)  
 ?.addOnCompleteListener **{** profileTask **->** if (profileTask.*isSuccessful*) {  
 showSuccessDialog()  
 } else {  
 showErrorDialog("Failed to update profile: ${profileTask.*exception*?.message}")  
 }  
 **}** } else {  
 val errorMessage = when {  
 task.*exception*?.message?.*contains*("email address is already in use") == true ->  
 "This email is already registered. Please use a different email or try logging in."  
 task.*exception*?.message?.*contains*("badly formatted") == true ->  
 "Please enter a valid email address."  
 else -> "Sign up failed: ${task.*exception*?.message}"  
 }  
 showErrorDialog(errorMessage)  
 }  
 } catch (e: Exception) {  
 Log.e(TAG, "Error in signup completion: ${e.message}", e)  
 showErrorDialog("An unexpected error occurred: ${e.message}")  
 }  
 **}** } catch (e: Exception) {  
 Log.e(TAG, "Error in signup: ${e.message}", e)  
 binding.progressBar.*visibility* = View.*GONE* binding.signUpButton.*isEnabled* = true  
 showErrorDialog("An unexpected error occurred: ${e.message}")  
 }  
 }  
  
 private fun showSuccessDialog() {  
 try {  
 MaterialAlertDialogBuilder(this)  
 .setTitle("Success!")  
 .setMessage("Your account has been created successfully. You can now log in.")  
 .setPositiveButton("OK") **{** \_, \_ **->** finish()  
 **}** .setCancelable(false)  
 .show()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error showing success dialog: ${e.message}", e)  
 finish()  
 }  
 }  
  
 private fun showErrorDialog(message: String) {  
 try {  
 MaterialAlertDialogBuilder(this)  
 .setTitle("Error")  
 .setMessage(message)  
 .setPositiveButton("OK", null)  
 .show()  
 } catch (e: Exception) {  
 Log.e(TAG, "Error showing error dialog: ${e.message}", e)  
 Toast.makeText(this, message, Toast.*LENGTH\_LONG*).show()  
 }  
 }  
  
 private fun navigateToHome() {  
 val intent = Intent(this, HomeActivity::class.*java*).*apply* **{** addFlags(Intent.*FLAG\_ACTIVITY\_NEW\_TASK* or Intent.*FLAG\_ACTIVITY\_CLEAR\_TASK*)  
 **}** startActivity(intent)  
 finish()  
 }  
  
 override fun onOptionsItemSelected(item: MenuItem): Boolean {  
 return when (item.*itemId*) {  
 android.R.id.*home* -> {  
 onBackPressed()  
 true  
 }  
 else -> super.onOptionsItemSelected(item)  
 }  
 }  
}

**Figure 4**

**Module Name: Home, Market & Profile Page**

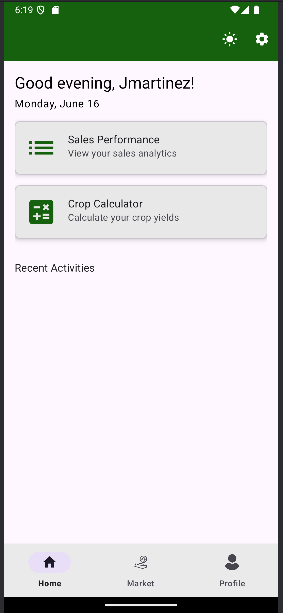
**Narrative Description:**

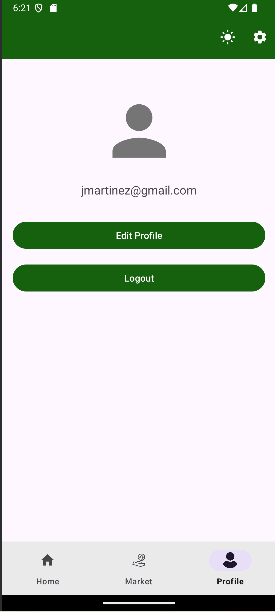
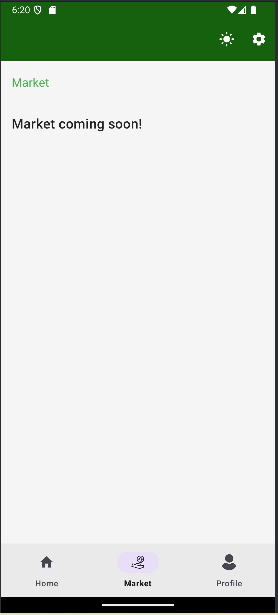
The Home screen of FarmaKita welcomes users with a dynamic greeting based on the time of day, creating a personalized experience. Two essential features—Sale**s** Performance and Crop Calculator—are prominently displayed, allowing farmers to easily monitor their earnings and estimate crop yields. ARecent Activities section enhances user engagement by providing updates on past transactions and interactions. The bottom navigation bar, featuring Home, Market, and Profile tabs, ensures effortless movement across the app, reinforcing accessibility and efficiency.

The Market screen, currently labeled as “Coming Soon,” sets expectations for future crop trading and exchange functionalities. While maintaining a clean layout, it prepares users for upcoming tools that will facilitate seamless agricultural commerce. Positioned within the bottom navigation menu, the Market tab remains highlighted, signifying its central role in the app’s evolving ecosystem. This screen embodies FarmaKita’s commitment to expanding opportunities for farmers while ensuring transparency about ongoing developments.

The Profile screen offers users a simple yet functional space for managing their account details. The green header houses notifications and settings icons, while a placeholder profile image displays alongside the registered email. Essential actions such as editing profile information and logging out are clearly available through dedicated buttons. With the Profile tab highlighted in the bottom navigation bar, users can navigate between different sections without hassle. Designed for accessibility, this screen reflects FarmaKita’s emphasis on secure, farmer-friendly account management**.**

**Screenshots**





**Source Code**

**Activity\_home.xml**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.coordinatorlayout.widget.CoordinatorLayout 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">  
  
 <com.google.android.material.appbar.AppBarLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:theme="@style/ThemeOverlay.AppCompat.Dark.ActionBar">  
  
 <androidx.appcompat.widget.Toolbar  
 android:id="@+id/toolbar"  
 android:layout\_width="match\_parent"  
 android:layout\_height="?attr/actionBarSize"  
 android:background="?attr/colorPrimary"  
 app:popupTheme="@style/ThemeOverlay.AppCompat.Light" />  
  
 </com.google.android.material.appbar.AppBarLayout>  
  
 <FrameLayout  
 android:id="@+id/fragment\_container"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 app:layout\_behavior="@string/appbar\_scrolling\_view\_behavior" />  
  
 <com.google.android.material.bottomnavigation.BottomNavigationView  
 android:id="@+id/bottom\_navigation"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="bottom"  
 android:background="?android:attr/windowBackground"  
 app:menu="@menu/bottom\_navigation\_menu" />  
  
</androidx.coordinatorlayout.widget.CoordinatorLayout>

**HomeActivity.kt**

package com.example.farmkita  
  
import android.content.Intent  
import android.os.Bundle  
import android.view.Menu  
import android.view.MenuItem  
import android.view.View  
import android.widget.PopupMenu  
import androidx.appcompat.app.AppCompatActivity  
import androidx.appcompat.app.AppCompatDelegate  
import androidx.core.content.ContextCompat  
import androidx.fragment.app.Fragment  
import com.example.farmkita.databinding.ActivityHomeBinding  
import com.example.farmkita.fragments.HomeFragment  
import com.example.farmkita.fragments.MarketFragment  
import com.example.farmkita.fragments.ProfileFragment  
import com.google.android.material.dialog.MaterialAlertDialogBuilder  
import com.google.firebase.auth.FirebaseAuth  
import com.google.firebase.auth.FirebaseUser  
import com.google.firebase.auth.ktx.auth  
import com.google.firebase.ktx.Firebase  
  
class HomeActivity : AppCompatActivity() {  
 private lateinit var binding: ActivityHomeBinding  
 private lateinit var auth: FirebaseAuth  
 private var currentUser: FirebaseUser? = null  
 private lateinit var sharedPreferences: android.content.SharedPreferences  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 binding = ActivityHomeBinding.inflate(layoutInflater)  
 setContentView(binding.root)  
  
 // Initialize Firebase Auth  
 auth = Firebase.auth  
 currentUser = auth.currentUser  
 sharedPreferences = getSharedPreferences("AppSettings", MODE\_PRIVATE)  
  
 // Check if user is logged in  
 if (currentUser == null) {  
 startActivity(Intent(this, LoginActivity::class.java))  
 finish()  
 return  
 }  
  
 setupToolbar()  
 setupBottomNavigation()  
 updateThemeIcon()  
   
 // Load home fragment by default  
 loadFragment(HomeFragment())  
 }  
  
 private fun setupToolbar() {  
 setSupportActionBar(binding.toolbar)  
 supportActionBar?.setDisplayShowTitleEnabled(false)  
 }  
  
 private fun setupBottomNavigation() {  
 binding.bottomNavigation.setOnItemSelectedListener **{** item **->** when (item.itemId) {  
 R.id.navigation\_home -> {  
 loadFragment(HomeFragment())  
 true  
 }  
 R.id.navigation\_market -> {  
 loadFragment(MarketFragment())  
 true  
 }  
 R.id.navigation\_profile -> {  
 loadFragment(ProfileFragment())  
 true  
 }  
 else -> false  
 }  
 **}** }  
  
 private fun loadFragment(fragment: Fragment) {  
 supportFragmentManager.beginTransaction()  
 .replace(R.id.fragment\_container, fragment)  
 .commit()  
 }  
  
 override fun onCreateOptionsMenu(menu: Menu): Boolean {  
 menuInflater.inflate(R.menu.home\_toolbar\_menu, menu)  
 return true  
 }  
  
 override fun onOptionsItemSelected(item: MenuItem): Boolean {  
 return when (item.itemId) {  
 R.id.action\_theme\_toggle -> {  
 toggleTheme()  
 true  
 }  
 R.id.action\_settings\_menu -> {  
 showSettingsMenu(binding.toolbar.findViewById(R.id.action\_settings\_menu))  
 true  
 }  
 else -> super.onOptionsItemSelected(item)  
 }  
 }  
  
 private fun toggleTheme() {  
 val currentTheme = sharedPreferences.getInt("theme\_mode", AppCompatDelegate.MODE\_NIGHT\_FOLLOW\_SYSTEM)  
 val newTheme = when (currentTheme) {  
 AppCompatDelegate.MODE\_NIGHT\_NO -> AppCompatDelegate.MODE\_NIGHT\_YES  
 AppCompatDelegate.MODE\_NIGHT\_YES -> AppCompatDelegate.MODE\_NIGHT\_NO  
 else -> AppCompatDelegate.MODE\_NIGHT\_NO  
 }  
 AppCompatDelegate.setDefaultNightMode(newTheme)  
 sharedPreferences.edit().putInt("theme\_mode", newTheme).apply()  
 updateThemeIcon()  
 }  
  
 private fun updateThemeIcon() {  
 val isDarkMode = AppCompatDelegate.getDefaultNightMode() == AppCompatDelegate.MODE\_NIGHT\_YES  
 binding.toolbar.menu.findItem(R.id.action\_theme\_toggle)?.apply **{** setIcon(if (isDarkMode) R.drawable.ic\_moon else R.drawable.ic\_sun)  
 icon?.setTint(ContextCompat.getColor(this@HomeActivity,   
 if (isDarkMode) android.R.color.white else android.R.color.black))  
 **}** binding.toolbar.menu.findItem(R.id.action\_settings\_menu)?.icon?.setTint(  
 ContextCompat.getColor(this,   
 if (isDarkMode) android.R.color.white else android.R.color.black)  
 )  
 }  
  
 private fun showSettingsMenu(anchor: View) {  
 val popup = PopupMenu(this, anchor)  
 popup.menuInflater.inflate(R.menu.home\_settings\_menu, popup.menu)  
   
 popup.setOnMenuItemClickListener **{** menuItem **->** when (menuItem.itemId) {  
 R.id.action\_profile -> {  
 startActivity(Intent(this, EditProfileActivity::class.java))  
 true  
 }  
 R.id.action\_theme -> {  
 showThemeDialog()  
 true  
 }  
 R.id.action\_logout -> {  
 showLogoutDialog()  
 true  
 }  
 else -> false  
 }  
 **}** popup.show()  
 }  
  
 private fun showThemeDialog() {  
 val themes = arrayOf("Light", "Dark", "System Default")  
 val currentTheme = sharedPreferences.getInt("theme\_mode", AppCompatDelegate.MODE\_NIGHT\_FOLLOW\_SYSTEM)  
 val currentThemeIndex = when (currentTheme) {  
 AppCompatDelegate.MODE\_NIGHT\_NO -> 0  
 AppCompatDelegate.MODE\_NIGHT\_YES -> 1  
 else -> 2  
 }  
  
 MaterialAlertDialogBuilder(this)  
 .setTitle("Choose Theme")  
 .setSingleChoiceItems(themes, currentThemeIndex) **{** \_, which **->** val newTheme = when (which) {  
 0 -> AppCompatDelegate.MODE\_NIGHT\_NO  
 1 -> AppCompatDelegate.MODE\_NIGHT\_YES  
 else -> AppCompatDelegate.MODE\_NIGHT\_FOLLOW\_SYSTEM  
 }  
 AppCompatDelegate.setDefaultNightMode(newTheme)  
 sharedPreferences.edit().putInt("theme\_mode", newTheme).apply()  
 updateThemeIcon()  
 **}** .setPositiveButton("OK", null)  
 .show()  
 }  
  
 private fun showLogoutDialog() {  
 MaterialAlertDialogBuilder(this)  
 .setTitle("Logout")  
 .setMessage("Are you sure you want to logout?")  
 .setPositiveButton("Yes") **{** \_, \_ **->** auth.signOut()  
 startActivity(Intent(this, MainActivity::class.java))  
 finish()  
 **}** .setNegativeButton("No", null)  
 .show()  
 }  
}

**fragment\_home.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"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <androidx.core.widget.NestedScrollView  
 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">  
  
 <TextView  
 android:id="@+id/welcomeMessage"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Welcome back!"  
 android:textAppearance="?attr/textAppearanceHeadline5"  
 android:textColor="?android:attr/textColorPrimary"  
 android:layout\_marginBottom="4dp"/>  
  
 <TextView  
 android:id="@+id/dateText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textAppearance="?attr/textAppearanceBody1"  
 android:textColor="?android:attr/textColorSecondary"  
 android:layout\_marginBottom="16dp"  
 android:visibility="gone"/>  
  
 <com.google.android.material.card.MaterialCardView  
 android:id="@+id/cardSales"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:padding="16dp">  
  
 <ImageView  
 android:id="@+id/salesIcon"  
 android:layout\_width="48dp"  
 android:layout\_height="48dp"  
 android:src="@drawable/ic\_chart"  
 android:contentDescription="Sales" />  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:layout\_marginStart="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Sales Performance"  
 android:textAppearance="?attr/textAppearanceSubtitle1"  
 android:textColor="?android:attr/textColorPrimary" />  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="View your sales analytics"  
 android:textAppearance="?attr/textAppearanceBody2"  
 android:textColor="?android:attr/textColorSecondary" />  
  
 </LinearLayout>  
  
 </LinearLayout>  
  
 </com.google.android.material.card.MaterialCardView>  
  
 <com.google.android.material.card.MaterialCardView  
 android:id="@+id/cropCalculationCard"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:padding="16dp">  
  
 <ImageView  
 android:id="@+id/calculatorIcon"  
 android:layout\_width="48dp"  
 android:layout\_height="48dp"  
 android:src="@drawable/ic\_calculator"  
 android:contentDescription="Calculator" />  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:layout\_marginStart="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Crop Calculator"  
 android:textAppearance="?attr/textAppearanceSubtitle1"  
 android:textColor="?android:attr/textColorPrimary" />  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Calculate your crop yields"  
 android:textAppearance="?attr/textAppearanceBody2"  
 android:textColor="?android:attr/textColorSecondary" />  
  
 </LinearLayout>  
  
 </LinearLayout>  
  
 </com.google.android.material.card.MaterialCardView>  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Recent Activities"  
 android:textAppearance="?attr/textAppearanceSubtitle1"  
 android:textColor="?android:attr/textColorPrimary"  
 android:layout\_marginTop="16dp"  
 android:layout\_marginBottom="8dp"/>  
  
 <androidx.recyclerview.widget.RecyclerView  
 android:id="@+id/activitiesRecyclerView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:nestedScrollingEnabled="false"/>  
  
 <TextView  
 android:id="@+id/noActivitiesText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="No recent activities"  
 android:textAppearance="?attr/textAppearanceBody2"  
 android:textColor="?android:attr/textColorSecondary"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="16dp"  
 android:visibility="gone"/>  
  
 </LinearLayout>  
  
 </androidx.core.widget.NestedScrollView>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**HomeFragment.kt**

package com.example.farmkita.fragments  
  
import android.content.Context  
import android.content.Intent  
import android.content.SharedPreferences  
import android.os.Bundle  
import android.view.LayoutInflater  
import android.view.View  
import android.view.ViewGroup  
import android.widget.Toast  
import androidx.appcompat.app.AppCompatDelegate  
import androidx.core.content.ContextCompat  
import androidx.fragment.app.Fragment  
import androidx.recyclerview.widget.LinearLayoutManager  
import com.example.farmkita.\*  
import com.example.farmkita.databinding.FragmentHomeBinding  
import com.google.firebase.auth.FirebaseAuth  
import com.google.firebase.auth.ktx.auth  
import com.google.firebase.ktx.Firebase  
import java.text.SimpleDateFormat  
import java.util.\*  
  
class HomeFragment : Fragment() {  
 private var \_binding: FragmentHomeBinding? = null  
 private val binding get() = \_binding!!  
 private lateinit var auth: FirebaseAuth  
 private lateinit var sharedPreferences: SharedPreferences  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 auth = Firebase.auth  
 sharedPreferences = requireContext().getSharedPreferences("AppSettings", Context.MODE\_PRIVATE)  
 }  
  
 override fun onCreateView(  
 inflater: LayoutInflater,  
 container: ViewGroup?,  
 savedInstanceState: Bundle?  
 ): View {  
 \_binding = FragmentHomeBinding.inflate(inflater, container, false)  
 return binding.root  
 }  
  
 override fun onViewCreated(view: View, savedInstanceState: Bundle?) {  
 super.onViewCreated(view, savedInstanceState)  
 setupUI()  
 setupClickListeners()  
 setupRecyclerView()  
 updateTextColors()  
 }  
  
 private fun setupUI() {  
 // Get current time of day  
 val calendar = Calendar.getInstance()  
 val timeOfDay = when (calendar.get(Calendar.HOUR\_OF\_DAY)) {  
 in 0..11 -> "Good morning"  
 in 12..16 -> "Good afternoon"  
 else -> "Good evening"  
 }  
  
 // Get user's name or email  
 val userName = auth.currentUser?.displayName ?: auth.currentUser?.email?.split("@")?.get(0)?.capitalize() ?: "Farmer"  
   
 // Get current date  
 val dateFormat = SimpleDateFormat("EEEE, MMMM d", Locale.getDefault())  
 val currentDate = dateFormat.format(calendar.time)  
  
 // Set welcome message with greeting, name, and date  
 binding.welcomeMessage.text = "$timeOfDay, $userName!"  
 binding.dateText.text = currentDate  
 binding.dateText.visibility = View.VISIBLE  
 }  
  
 private fun setupClickListeners() {  
 binding.cardSales.setOnClickListener **{** try {  
 val intent = Intent(requireContext(), SalesPerformanceActivity::class.java)  
 startActivity(intent)  
 } catch (e: Exception) {  
 Toast.makeText(requireContext(), "Error opening Sales Performance: ${e.message}", Toast.LENGTH\_SHORT).show()  
 }  
 **}** binding.cropCalculationCard.setOnClickListener **{** try {  
 val intent = Intent(requireContext(), CropCalculationActivity::class.java)  
 startActivity(intent)  
 } catch (e: Exception) {  
 Toast.makeText(requireContext(), "Error opening Crop Calculator: ${e.message}", Toast.LENGTH\_SHORT).show()  
 }  
 **}** }  
  
 private fun setupRecyclerView() {  
 // *TODO: Implement activities adapter* binding.activitiesRecyclerView.layoutManager = LinearLayoutManager(context)  
 }  
  
 private fun updateTextColors() {  
 val isDarkMode = AppCompatDelegate.getDefaultNightMode() == AppCompatDelegate.MODE\_NIGHT\_YES  
 val textColor = if (isDarkMode) {  
 ContextCompat.getColor(requireContext(), android.R.color.white)  
 } else {  
 ContextCompat.getColor(requireContext(), android.R.color.black)  
 }  
  
 // Update text colors for all text views  
 binding.welcomeMessage.setTextColor(textColor)  
 binding.dateText.setTextColor(textColor)  
 binding.noActivitiesText.setTextColor(textColor)  
 }  
  
 override fun onDestroyView() {  
 super.onDestroyView()  
 \_binding = null  
 }  
}

**fragment\_profile.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"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp">  
  
 <ImageView  
 android:id="@+id/profileImage"  
 android:layout\_width="120dp"  
 android:layout\_height="120dp"  
 android:layout\_marginTop="32dp"  
 android:contentDescription="Profile Image"  
 android:src="@drawable/default\_profile"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <TextView  
 android:id="@+id/tvEmail"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:textSize="18sp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@id/profileImage" />  
  
 <com.google.android.material.button.MaterialButton  
 android:id="@+id/btnEditProfile"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="32dp"  
 android:text="Edit Profile"  
 app:layout\_constraintTop\_toBottomOf="@id/tvEmail" />  
  
 <com.google.android.material.button.MaterialButton  
 android:id="@+id/btnLogout"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:text="Logout"  
 app:layout\_constraintTop\_toBottomOf="@id/btnEditProfile" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**ProfileFragment.kt**

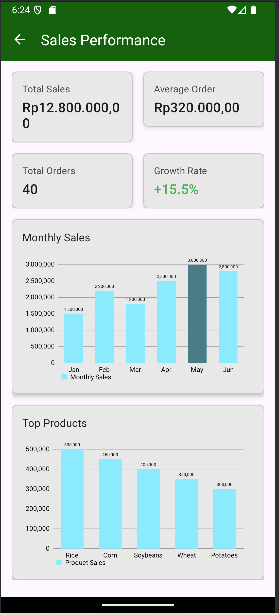
package com.example.farmkita.fragments  
  
import android.content.Intent  
import android.os.Bundle  
import android.view.LayoutInflater  
import android.view.View  
import android.view.ViewGroup  
import androidx.fragment.app.Fragment  
import com.example.farmkita.EditProfileActivity  
import com.example.farmkita.MainActivity  
import com.example.farmkita.R  
import com.example.farmkita.databinding.FragmentProfileBinding  
import com.google.android.material.dialog.MaterialAlertDialogBuilder  
import com.google.firebase.auth.FirebaseAuth  
import com.google.firebase.auth.ktx.auth  
import com.google.firebase.ktx.Firebase  
  
class ProfileFragment : Fragment() {  
 private var \_binding: FragmentProfileBinding? = null  
 private val binding get() = \_binding!!  
 private lateinit var auth: FirebaseAuth  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 auth = Firebase.*auth* }  
  
 override fun onCreateView(  
 inflater: LayoutInflater,  
 container: ViewGroup?,  
 savedInstanceState: Bundle?  
 ): View {  
 \_binding = FragmentProfileBinding.inflate(inflater, container, false)  
 return binding.*root* }  
  
 override fun onViewCreated(view: View, savedInstanceState: Bundle?) {  
 super.onViewCreated(view, savedInstanceState)  
 setupProfile()  
 }  
  
 private fun setupProfile() {  
 // Load user data  
 val user = auth.*currentUser* user?.*let* **{** binding.tvEmail.*text* = **it**.*email* **}** // Setup click listeners  
 binding.btnEditProfile.setOnClickListener **{** startActivity(Intent(requireContext(), EditProfileActivity::class.*java*))  
 **}** binding.btnLogout.setOnClickListener **{** showLogoutDialog()  
 **}** }  
  
 private fun showLogoutDialog() {  
 MaterialAlertDialogBuilder(requireContext())  
 .setTitle("Logout")  
 .setMessage("Are you sure you want to logout?")  
 .setPositiveButton("Yes") **{** \_, \_ **->** auth.signOut()  
 startActivity(Intent(requireContext(), MainActivity::class.*java*))  
 requireActivity().finish()  
 **}** .setNegativeButton("No", null)  
 .show()  
 }  
  
 override fun onDestroyView() {  
 super.onDestroyView()  
 \_binding = null  
 }  
}

**Figure 5**

**Module Name: Sales Performance Page**

**Narrative Description:**

The Sales Performance screen of FarmaKita provides users with a clear, data-driven overview of their agricultural sales trends. At the top, four summary metrics—Total Sales, Average Order Value, Total Orders, and Growth Rate—offer a snapshot of financial performance. A Monthly Sales bar chart visually tracks revenue progression from January to June, allowing users to assess patterns and identify trends. Below, the Top Products chart ranks the highest-selling items, helping farmers make informed decisions on market demand and inventory focus. This screen is designed for quick insights and strategic decision-making, ensuring that users can monitor their sales growth with clarity and ease. The structured layout, complemented by a green thematic header**,** reinforces FarmaKita’s commitment to accessible financial awareness and farm profitability.

**Screenshots**

**Source Code**

**Activity\_sales\_performance.xml**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.coordinatorlayout.widget.CoordinatorLayout 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">  
  
 <com.google.android.material.appbar.AppBarLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content">  
  
 <com.google.android.material.appbar.MaterialToolbar  
 android:id="@+id/toolbar"  
 android:layout\_width="match\_parent"  
 android:layout\_height="?attr/actionBarSize"  
 android:background="?attr/colorPrimary"  
 android:elevation="4dp"  
 android:theme="@style/ThemeOverlay.MaterialComponents.Dark.ActionBar"  
 app:popupTheme="@style/ThemeOverlay.MaterialComponents.Light" />  
  
 </com.google.android.material.appbar.AppBarLayout>  
  
 <androidx.core.widget.NestedScrollView  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 app:layout\_behavior="@string/appbar\_scrolling\_view\_behavior">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <!-- Metrics Cards Row 1 -->  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:layout\_marginBottom="16dp">  
  
 <com.google.android.material.card.MaterialCardView  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:layout\_marginEnd="8dp"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Total Sales"  
 android:textAppearance="?attr/textAppearanceBody2"  
 android:textColor="?android:attr/textColorSecondary" />  
  
 <TextView  
 android:id="@+id/totalSalesValue"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textAppearance="?attr/textAppearanceHeadline6"  
 android:textColor="?android:attr/textColorPrimary"  
 android:layout\_marginTop="4dp" />  
  
 </LinearLayout>  
  
 </com.google.android.material.card.MaterialCardView>  
  
 <com.google.android.material.card.MaterialCardView  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:layout\_marginStart="8dp"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Average Order"  
 android:textAppearance="?attr/textAppearanceBody2"  
 android:textColor="?android:attr/textColorSecondary" />  
  
 <TextView  
 android:id="@+id/averageOrderValue"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textAppearance="?attr/textAppearanceHeadline6"  
 android:textColor="?android:attr/textColorPrimary"  
 android:layout\_marginTop="4dp" />  
  
 </LinearLayout>  
  
 </com.google.android.material.card.MaterialCardView>  
  
 </LinearLayout>  
  
 <!-- Metrics Cards Row 2 -->  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:layout\_marginBottom="16dp">  
  
 <com.google.android.material.card.MaterialCardView  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:layout\_marginEnd="8dp"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Total Orders"  
 android:textAppearance="?attr/textAppearanceBody2"  
 android:textColor="?android:attr/textColorSecondary" />  
  
 <TextView  
 android:id="@+id/totalOrdersValue"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textAppearance="?attr/textAppearanceHeadline6"  
 android:textColor="?android:attr/textColorPrimary"  
 android:layout\_marginTop="4dp" />  
  
 </LinearLayout>  
  
 </com.google.android.material.card.MaterialCardView>  
  
 <com.google.android.material.card.MaterialCardView  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:layout\_marginStart="8dp"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Growth Rate"  
 android:textAppearance="?attr/textAppearanceBody2"  
 android:textColor="?android:attr/textColorSecondary" />  
  
 <TextView  
 android:id="@+id/growthRateValue"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textAppearance="?attr/textAppearanceHeadline6"  
 android:textColor="@color/success\_green"  
 android:layout\_marginTop="4dp" />  
  
 </LinearLayout>  
  
 </com.google.android.material.card.MaterialCardView>  
  
 </LinearLayout>  
  
 <!-- Monthly Sales Chart -->  
 <com.google.android.material.card.MaterialCardView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="16dp"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Monthly Sales"  
 android:textAppearance="?attr/textAppearanceSubtitle1"  
 android:textColor="?android:attr/textColorPrimary"  
 android:layout\_marginBottom="8dp" />  
  
 <com.github.mikephil.charting.charts.BarChart  
 android:id="@+id/monthlySalesChart"  
 android:layout\_width="match\_parent"  
 android:layout\_height="200dp" />  
  
 </LinearLayout>  
  
 </com.google.android.material.card.MaterialCardView>  
  
 <!-- Top Products Chart -->  
 <com.google.android.material.card.MaterialCardView  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Top Products"  
 android:textAppearance="?attr/textAppearanceSubtitle1"  
 android:textColor="?android:attr/textColorPrimary"  
 android:layout\_marginBottom="8dp" />  
  
 <com.github.mikephil.charting.charts.BarChart  
 android:id="@+id/topProductsChart"  
 android:layout\_width="match\_parent"  
 android:layout\_height="200dp" />  
  
 </LinearLayout>  
  
 </com.google.android.material.card.MaterialCardView>  
  
 </LinearLayout>  
  
 </androidx.core.widget.NestedScrollView>  
  
</androidx.coordinatorlayout.widget.CoordinatorLayout>

**SalesPerformanceActivity.kt**

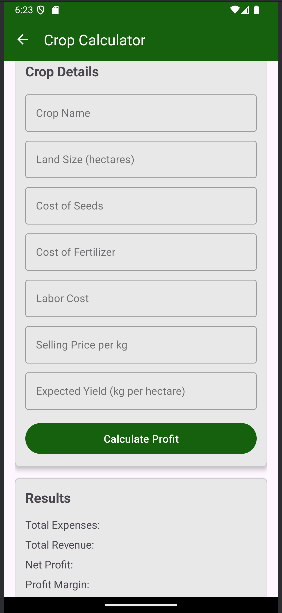
package com.example.farmkita  
  
import android.os.Bundle  
import androidx.appcompat.app.AppCompatActivity  
import com.example.farmkita.databinding.ActivitySalesPerformanceBinding  
import com.github.mikephil.charting.components.XAxis  
import com.github.mikephil.charting.data.BarData  
import com.github.mikephil.charting.data.BarDataSet  
import com.github.mikephil.charting.data.BarEntry  
import com.github.mikephil.charting.formatter.IndexAxisValueFormatter  
import java.text.NumberFormat  
import java.util.Locale  
  
class SalesPerformanceActivity : AppCompatActivity() {  
 private lateinit var binding: ActivitySalesPerformanceBinding  
 private val numberFormat = NumberFormat.getCurrencyInstance(Locale("id", "ID"))  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 binding = ActivitySalesPerformanceBinding.inflate(*layoutInflater*)  
 setContentView(binding.*root*)  
  
 setupToolbar()  
 setupCharts()  
 updateDashboardMetrics()  
 }  
  
 private fun setupToolbar() {  
 setSupportActionBar(binding.toolbar)  
 *supportActionBar*?.*apply* **{** setDisplayHomeAsUpEnabled(true)  
 *title* = "Sales Performance"  
 **}** binding.toolbar.setNavigationOnClickListener **{** onBackPressed() **}** }  
  
 private fun setupCharts() {  
 // Setup Monthly Sales Chart  
 binding.monthlySalesChart.*apply* **{** *description*.*isEnabled* = false  
 *legend*.*isEnabled* = true  
 setDrawGridBackground(false)  
 setDrawBarShadow(false)  
 setScaleEnabled(true)  
 setPinchZoom(false)  
  
 *xAxis*.*apply* **{** *position* = XAxis.XAxisPosition.*BOTTOM* setDrawGridLines(false)  
 *granularity* = 1f  
 *valueFormatter* = IndexAxisValueFormatter(getMonths())  
 **}** *axisLeft*.*apply* **{** setDrawGridLines(true)  
 *axisMinimum* = 0f  
 **}** *axisRight*.*isEnabled* = false  
  
 // Sample data - replace with real data  
 val entries = *listOf*(  
 BarEntry(0f, 1500000f),  
 BarEntry(1f, 2200000f),  
 BarEntry(2f, 1800000f),  
 BarEntry(3f, 2500000f),  
 BarEntry(4f, 3000000f),  
 BarEntry(5f, 2800000f)  
 )  
  
 val dataSet = BarDataSet(entries, "Monthly Sales").*apply* **{** *color* = getColor(R.color.*primary*)  
 **}** *data* = BarData(dataSet).*apply* **{** *barWidth* = 0.6f  
 **}** animateY(1000)  
 **}** // Setup Top Products Chart  
 binding.topProductsChart.apply **{** *description*.*isEnabled* = false  
 *legend*.*isEnabled* = true  
 setDrawGridBackground(false)  
 setDrawBarShadow(false)  
 setScaleEnabled(true)  
 setPinchZoom(false)  
  
 *xAxis*.*apply* **{** *position* = XAxis.XAxisPosition.*BOTTOM* setDrawGridLines(false)  
 *granularity* = 1f  
 *valueFormatter* = IndexAxisValueFormatter(getTopProducts())  
 **}** *axisLeft*.*apply* **{** setDrawGridLines(true)  
 *axisMinimum* = 0f  
 **}** *axisRight*.*isEnabled* = false  
  
 // Sample data - replace with real data  
 val entries = listOf(  
 BarEntry(0f, 500000f),  
 BarEntry(1f, 450000f),  
 BarEntry(2f, 400000f),  
 BarEntry(3f, 350000f),  
 BarEntry(4f, 300000f)  
 )  
  
 val dataSet = BarDataSet(entries, "Product Sales").apply **{** color = getColor(R.color.primary)  
 **}** data = BarData(dataSet).apply **{** barWidth = 0.6f  
 **}** animateY(1000)  
 **}** }  
  
 private fun updateDashboardMetrics() {  
 // Sample data - replace with real data  
 binding.totalSalesValue.text = numberFormat.format(12800000)  
 binding.averageOrderValue.text = numberFormat.format(320000)  
 binding.totalOrdersValue.text = "40"  
 binding.growthRateValue.text = "+15.5%"  
 }  
  
 private fun getMonths(): Array<String> {  
 return arrayOf("Jan", "Feb", "Mar", "Apr", "May", "Jun")  
 }  
  
 private fun getTopProducts(): Array<String> {  
 return arrayOf("Rice", "Corn", "Soybeans", "Wheat", "Potatoes")  
 }  
}

**Figure 6**

**Module Name: Crop Calculator Page**

**Narrative Description:**

The Crop Calculator screen of FarmaKita provides farmers with an intuitive tool for estimating profitability and making informed financial decisions. Users can input essential crop details such as Crop Name, Land Size, Cost of Seeds, Fertilizer, Labor, Selling Price per kg,and Expected Yield per hectare, ensuring a comprehensive cost-benefit analysis. With a single tap on the Calculate Profit button, the tool processes the data to deliver a breakdown of Total Expenses, Total Revenue, Net Profit, and Profit Marginin theResults section**.** This screen is structured for clarity and ease of use**,** ensuring farmers can swiftly analyze their crop investments without technical complexities. By providing a data-driven approach to financial awareness, FarmaKita empowers users to make strategic planting and selling decisions that enhance productivity and profitability.

**Screenshots**

**Source Code**

**Activity\_dashboard.xml**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.coordinatorlayout.widget.CoordinatorLayout 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">  
  
 <com.google.android.material.appbar.AppBarLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content">  
  
 <com.google.android.material.appbar.MaterialToolbar  
 android:id="@+id/toolbar"  
 android:layout\_width="match\_parent"  
 android:layout\_height="?attr/actionBarSize"  
 android:background="?attr/colorPrimary"  
 android:elevation="4dp"  
 android:theme="@style/ThemeOverlay.MaterialComponents.Dark.ActionBar"  
 app:popupTheme="@style/ThemeOverlay.MaterialComponents.Light"  
 app:navigationIcon="@drawable/ic\_back" />  
  
 </com.google.android.material.appbar.AppBarLayout>  
  
 <androidx.core.widget.NestedScrollView  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 app:layout\_behavior="@string/appbar\_scrolling\_view\_behavior">  
  
 <androidx.constraintlayout.widget.ConstraintLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:padding="16dp">  
  
 <com.google.android.material.card.MaterialCardView  
 android:id="@+id/inputCard"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 app:cardCornerRadius="8dp"  
 app:cardElevation="4dp"  
 app:layout\_constraintTop\_toTopOf="parent">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Crop Details"  
 android:textSize="20sp"  
 android:textStyle="bold" />  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/cropNameLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:hint="Crop Name">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/cropNameInput"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="text" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/landSizeLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:hint="Land Size (hectares)">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/landSizeInput"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="numberDecimal" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/seedCostLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:hint="Cost of Seeds">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/seedCostInput"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="numberDecimal" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
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 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:hint="Cost of Fertilizer">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/fertilizerCostInput"  
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 android:layout\_height="wrap\_content"  
 android:inputType="numberDecimal" />  
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 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:hint="Labor Cost">  
  
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 <com.google.android.material.textfield.TextInputLayout  
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 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
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 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:hint="Selling Price per kg">  
  
 <com.google.android.material.textfield.TextInputEditText  
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 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="numberDecimal" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:id="@+id/expectedYieldLayout"  
 style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:hint="Expected Yield (kg per hectare)">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/expectedYieldInput"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="numberDecimal" />  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <com.google.android.material.button.MaterialButton  
 android:id="@+id/calculateButton"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:padding="12dp"  
 android:text="Calculate Profit"  
 android:textSize="16sp" />  
  
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 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
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 android:text="Results"  
 android:textSize="20sp"  
 android:textStyle="bold" />  
  
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 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:orientation="horizontal">  
  
 <TextView  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
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 android:id="@+id/totalExpensesText"  
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 android:layout\_height="wrap\_content"  
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 android:textStyle="bold" />  
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 android:textStyle="bold" />  
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 android:orientation="horizontal">  
  
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 android:layout\_height="wrap\_content"  
 android:textSize="16sp"  
 android:textStyle="bold" />  
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 </com.google.android.material.card.MaterialCardView>  
  
 </androidx.constraintlayout.widget.ConstraintLayout>  
 </androidx.core.widget.NestedScrollView>  
  
</androidx.coordinatorlayout.widget.CoordinatorLayout>

**ActivityDashboard.kt**

package com.example.farmkita  
  
import android.os.Bundle  
import android.view.MenuItem  
import androidx.appcompat.app.AppCompatActivity  
import com.example.farmkita.databinding.ActivityDashboardBinding  
  
class ActivityDashboard : AppCompatActivity() {  
 private lateinit var binding: ActivityDashboardBinding  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 binding = ActivityDashboardBinding.inflate(*layoutInflater*)  
 setContentView(binding.*root*)  
  
 setupToolbar()  
 }  
  
 private fun setupToolbar() {  
 setSupportActionBar(binding.toolbar)  
 *supportActionBar*?.*apply* **{** setDisplayHomeAsUpEnabled(true)  
 setDisplayShowHomeEnabled(true)  
 *title* = "Dashboard"  
 **}** // Remove any menu items that might be causing extra arrows  
 binding.toolbar.*menu*?.clear()  
 }  
  
 override fun onOptionsItemSelected(item: MenuItem): Boolean {  
 return when (item.*itemId*) {  
 android.R.id.*home* -> {  
 onBackPressed()  
 true  
 }  
 else -> super.onOptionsItemSelected(item)  
 }  
 }  
}