

APK Installation and App Execution on Real & Virtual Devices

1. Objective

The objective of this activity is to demonstrate the successful installation of APK files on both a **real Android device** and a **virtual device (Android Emulator)**, and to validate basic application functionality by performing actions on **Dialer** and **Calculator** applications.

2. Environment Details

2.1 Software Setup

- **Operating System:** Windows
- **Java (JDK):** Installed and configured
- **Android Studio:** Installed
- **Android SDK & Platform Tools:** Configured
- **ADB (Android Debug Bridge):** Verified
- **Appium (Optional):** Installed for automation support

2.2 Hardware Setup

- **Real Android Device:** Connected via USB
 - **Virtual Device:** Android Emulator (AVD) created using Android Studio
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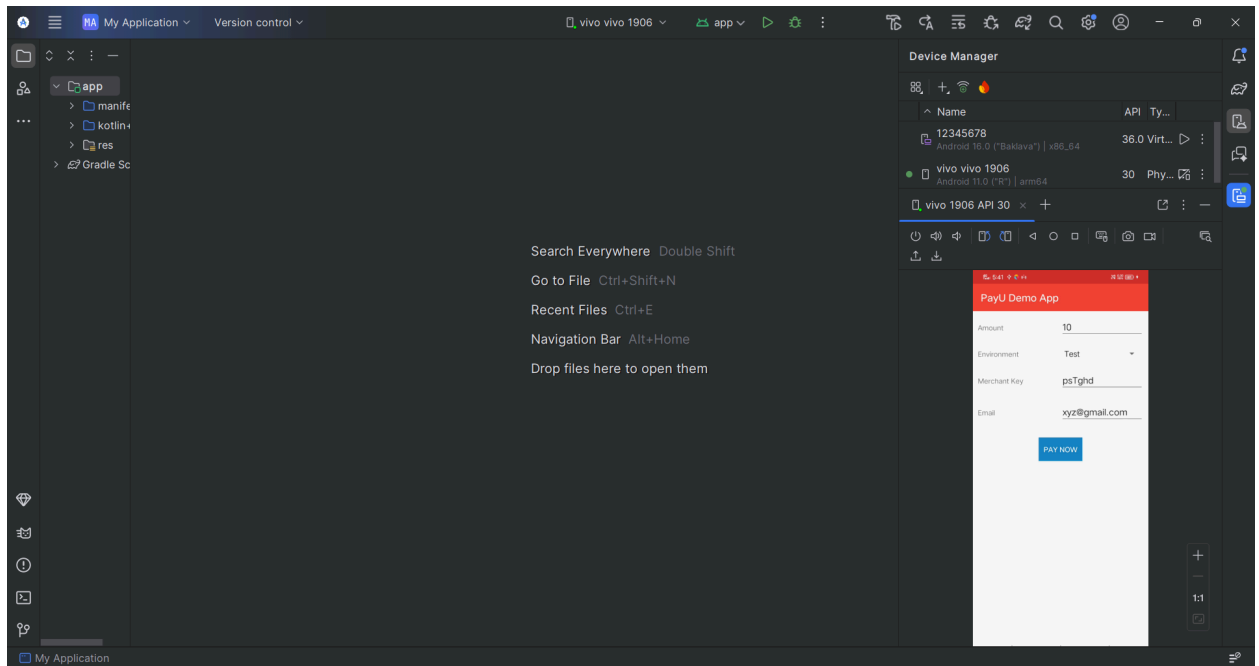
3. Device Configuration

3.1 Real Device Setup

- Enabled **Developer Options**
- Enabled **USB Debugging**
- Device successfully detected using ADB command:
adb devices

3.2 Virtual Device (Emulator) Setup

- Android Virtual Device (AVD) created and launched
- Emulator verified as running and visible in ADB devices list



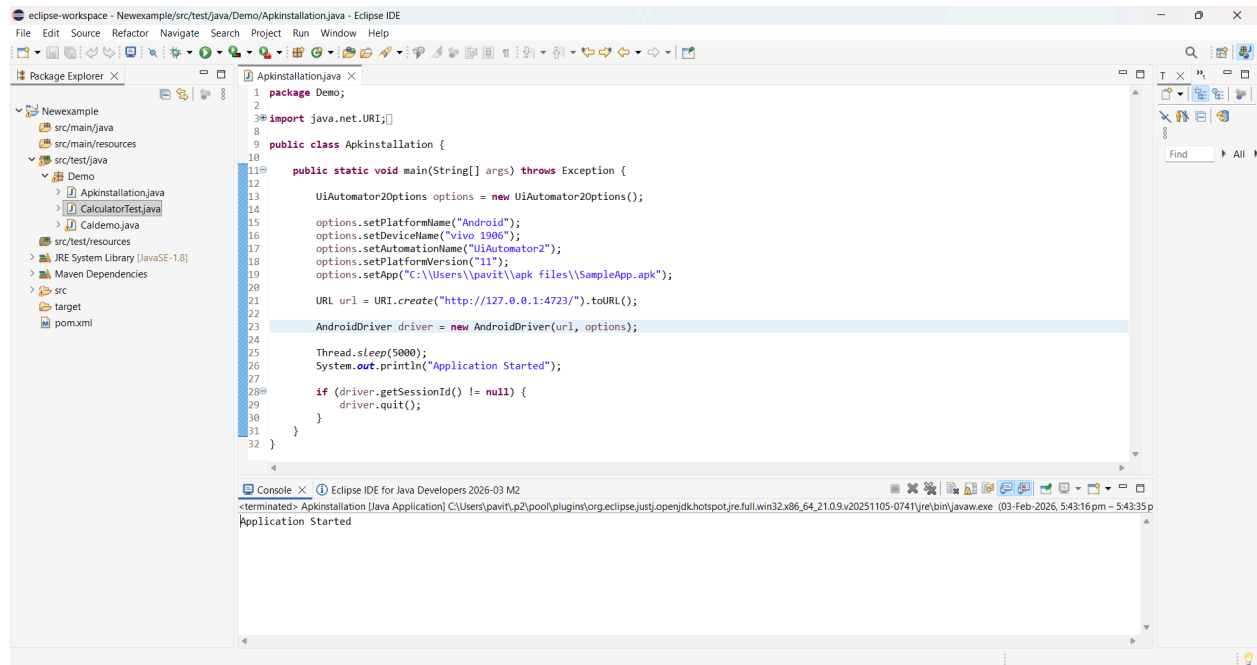
4. APK Installation

4.1 Installing APK on Real Device

Steps followed:

1. Connected the real device via USB
2. Verified device connection using ADB
3. Installed APK using the command:
`adb install <apk-file-path>`
4. Installation completed successfully without errors

Result: APK installed successfully on the real device

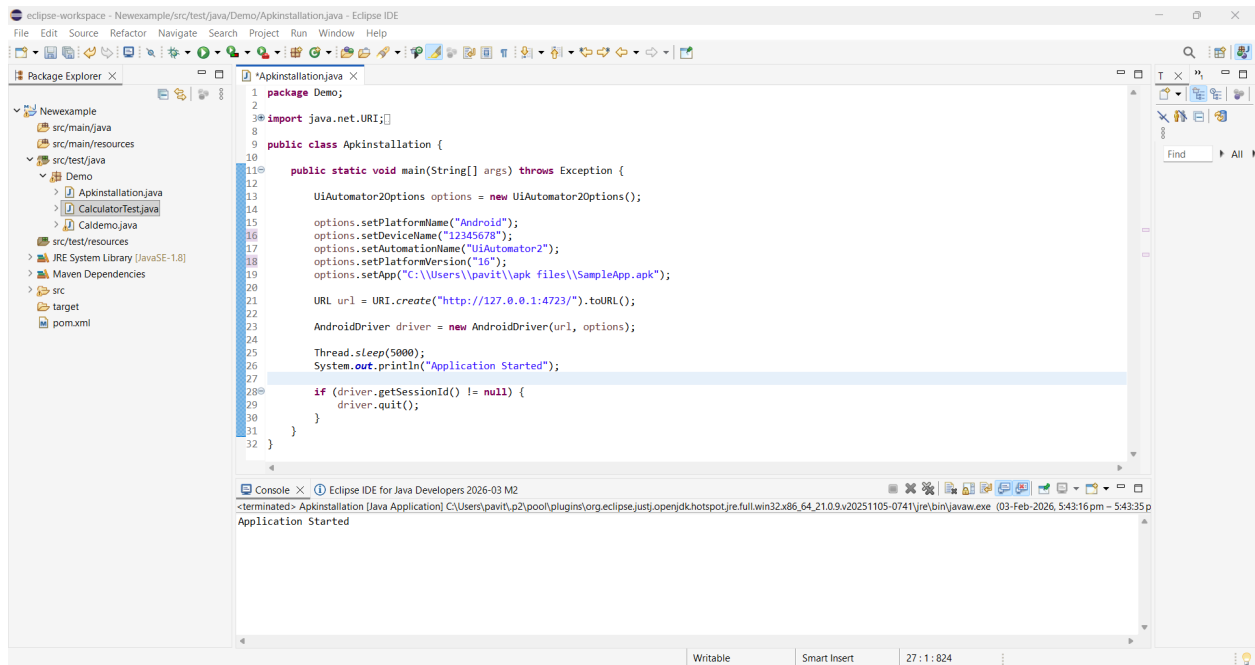


4.2 Installing APK on Virtual Device (Emulator)

Steps followed:

1. Started the Android Emulator
2. Verified emulator connection using ADB
3. Installed APK using the command:
adb install <apk-file-path>
4. APK installation completed successfully

Result: APK installed successfully on the virtual device



5. Application Execution & Validation

5.1 Dialer Application Execution

5.1.1 Dialer on Virtual Device

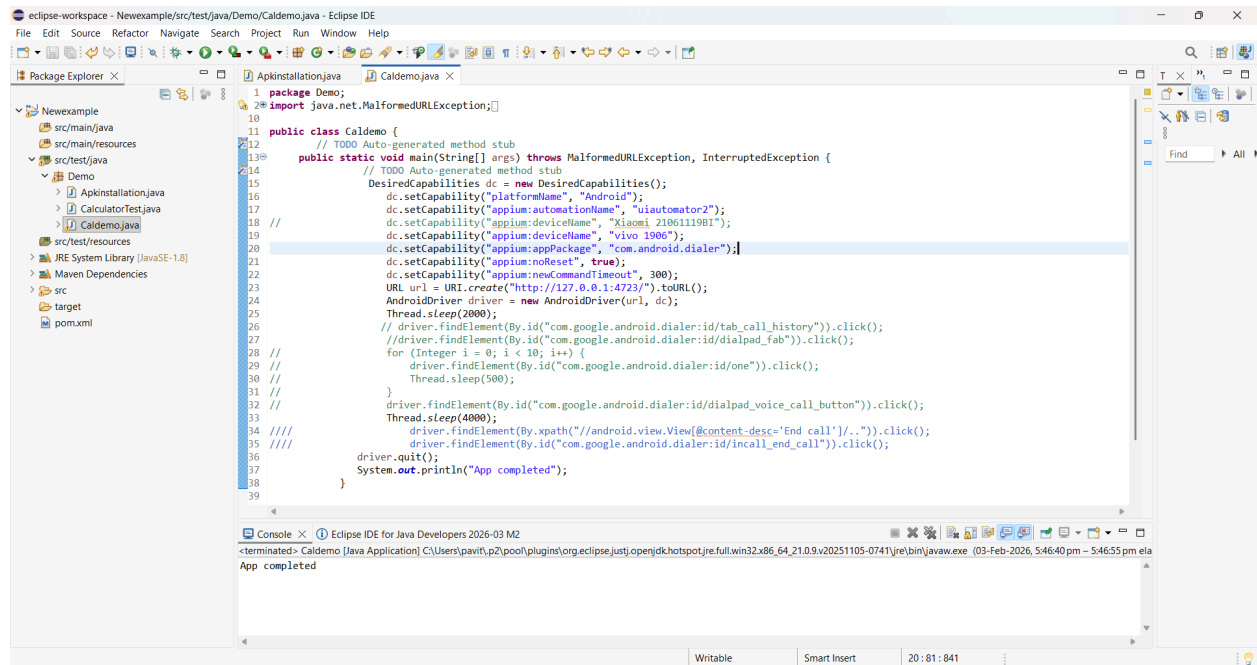
- Opened the Dialer application on the emulator
- Entered phone numbers using the dial pad
- Verified UI responsiveness and functionality

Result: Dialer application worked successfully on the virtual device

5.1.2 Dialer on Real Device

- Opened the Dialer application on the real device
- Entered phone numbers using the dial pad
- Verified proper number input and screen response

Result: Dialer application worked successfully on the real device



5.2 Calculator Application Execution (Real Device)

- Opened the Calculator application on the real device
- Performed basic arithmetic operations:
 - Addition
 - Subtraction
 - Multiplication
 - Division
- Verified correct results and smooth operation

Result: Calculator application worked successfully on the real device