1) **Write an Appium Program to connect with emulator and open APIdemo.app application on your emulator.**

```
import io.appium.java_client.AppiumBy;
import io.appium.java_client.android.AndroidDriver;
import io.appium.java_client.remote.AndroidMobileCapabilityType;
import io.appium.java_client.remote.MobileCapabilityType;
import org.openqa.selenium.remote.DesiredCapabilities;

import java.io.File;
import java.net.URL;

public class LaunchApiDemos {

    public static void main(String[] args) {
        AndroidDriver driver = null;
        try {

            File apkFile = new File("/absolute/path/to/ApiDemos-debug.apk");

            DesiredCapabilities caps = new DesiredCapabilities();
            caps.setCapability(MobileCapabilityType.PLATFORM_NAME, "Android");
            caps.setCapability(MobileCapabilityType.DEVICE_NAME, "Android Emulator"); // or your AVD name
            caps.setCapability(MobileCapabilityType.AUTOMATION_NAME, "UiAutomator2");
            caps.setCapability(MobileCapabilityType.APP, apkFile.getAbsolutePath());
            caps.setCapability(AndroidMobileCapabilityType.APP_PACKAGE, "io.appium.android.apis");
            caps.setCapability(AndroidMobileCapabilityType.APP_ACTIVITY, "io.appium.android.apis.ApiDemos");
```

```
        caps.setCapability("noReset", false);
        driver = new AndroidDriver(new URL("http://127.0.0.1:4723/wd/hub"), caps);

        System.out.println("ApiDemos launched successfully!");
 driver.findElement(AppiumBy.accessibilityId("App")).click();
        System.out.println("Tapped on 'App'");

      } catch (Exception e) {
        e.printStackTrace();
      } finally {
        if (driver != null) {
          driver.quit();
        }
      }
   }
}
```

2) Write an Appium Program to connect with Realdevice and open APIdemo.app application on your realdevice.

```
import io.appium.java_client.AppiumBy;
import io.appium.java_client.android.AndroidDriver;
import io.appium.java_client.remote.AndroidMobileCapabilityType;
import io.appium.java_client.remote.MobileCapabilityType;
import org.openqa.selenium.remote.DesiredCapabilities;
```

```
import java.io.File;
import java.net.URL;

public class LaunchApiDemosOnRealDevice {

   public static void main(String[] args) {
      AndroidDriver driver = null;
      try {
         File apk = new File("/absolute/path/to/ApiDemos-debug.apk");

         DesiredCapabilities caps = new DesiredCapabilities();
         caps.setCapability(MobileCapabilityType.PLATFORM_NAME, "Android");
         caps.setCapability(MobileCapabilityType.DEVICE_NAME, "Android Device");
         caps.setCapability(MobileCapabilityType.AUTOMATION_NAME, "UiAutomator2");
         caps.setCapability(MobileCapabilityType.APP, apk.getAbsolutePath());
         caps.setCapability(AndroidMobileCapabilityType.APP_PACKAGE,
"io.appium.android.apis");
         caps.setCapability(AndroidMobileCapabilityType.APP_ACTIVITY,
"io.appium.android.apis.ApiDemos");
         caps.setCapability(MobileCapabilityType.NO_RESET, false); // reinstall app each
run

         driver = new AndroidDriver(new URL("http://127.0.0.1:4723/wd/hub"), caps);

         System.out.println("ApiDemos launched on real device!");

         driver.findElement(AppiumBy.accessibilityId("App")).click();

      } catch (Exception e) {
```

```
            e.printStackTrace();
        } finally {
            if (driver != null) {
                driver.quit();
            }
        }
    }
}
```

3) Write an Appium Program to connect with emulator wit ecommerce based application using Generalstore.app to perform locators like name, dropdown etc.

```
import io.appium.java_client.AppiumBy;
import io.appium.java_client.android.AndroidDriver;
import io.appium.java_client.MobileBy;
import io.appium.java_client.remote.MobileCapabilityType;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.WebElement;

import java.net.URL;
import java.time.Duration;

public class GeneralStoreTest {

    public static void main(String[] args) {
        AndroidDriver driver = null;
        try {
            DesiredCapabilities caps = new DesiredCapabilities();
            caps.setCapability(MobileCapabilityType.PLATFORM_NAME, "Android");
```

```
        caps.setCapability(MobileCapabilityType.DEVICE_NAME, "Android Emulator");
        caps.setCapability(MobileCapabilityType.AUTOMATION_NAME, "UiAutomator2");
        caps.setCapability(MobileCapabilityType.APP,
"/absolute/path/to/GeneralStore.apk");
        caps.setCapability("noReset", false);

        driver = new AndroidDriver(new URL("http://127.0.0.1:4723/wd/hub"), caps);
        driver.manage().timeouts().implicitlyWait(Duration.ofSeconds(10));

          WebElement nameField =
driver.findElement(AppiumBy.id("com.androidsample.generalstore:id/nameField"));
        nameField.sendKeys("Test User");
        driver.hideKeyboard();

driver.findElement(AppiumBy.id("com.androidsample.generalstore:id/radioFemale")).clic
k();

   driver.findElement(AppiumBy.id("android:id/text1")).click();

        String countryToSelect = "Argentina";
        driver.findElement(MobileBy.AndroidUIAutomator(
           "new UiScrollable(new UiSelector().scrollable(true))" +
           ".scrollIntoView(new UiSelector().text(\"" + countryToSelect + "\"));")).click();

driver.findElement(AppiumBy.id("com.androidsample.generalstore:id/btnLetsShop")).clic
k();

        System.out.println("GeneralStore actions performed successfully!");
```

```
        } catch (Exception e) {
            e.printStackTrace();
        } finally {
            if (driver != null) driver.quit();
        }
    }
}
```

4) Write an Appium Program to connect with emulator wit ecommerce based application using Generalstore.app to perform swipe demo to swipe the menu.

```
import io.appium.java_client.android.AndroidDriver;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.remote.DesiredCapabilities;
import java.net.URL;
import java.util.HashMap;
import java.util.Map;
import java.time.Duration;

public class GeneralStoreSwipeDemo {
    public static void main(String[] args) {
        AndroidDriver driver = null;
        try {
            DesiredCapabilities caps = new DesiredCapabilities();
            caps.setCapability("platformName", "Android");
            caps.setCapability("deviceName", "Android Emulator");
            caps.setCapability("automationName", "UiAutomator2");
            caps.setCapability("app", "/absolute/path/to/GeneralStore.apk");
```

```
        caps.setCapability("noReset", false);

        driver = new AndroidDriver(new URL("http://127.0.0.1:4723/wd/hub"), caps);
        driver.manage().timeouts().implicitlyWait(Duration.ofSeconds(10));

        Map<String, Object> swipeParams = new HashMap<>();
        swipeParams.put("left", 100);
        swipeParams.put("top", 500);
        swipeParams.put("width", 800);
        swipeParams.put("height", 300);
        swipeParams.put("direction", "left");
        swipeParams.put("percent", 0.75);

        ((JavascriptExecutor) driver).executeScript("mobile: swipeGesture", swipeParams);

        System.out.println("Swipe gesture executed successfully!");

      } catch (Exception e) {
        e.printStackTrace();
      } finally {
        if (driver != null) {
          driver.quit();
        }
      }
    }
}
```

5) Write an Appium Program to connect with realdevice using APIDemo.app to perform longpress to open to side menu.

```
import io.appium.java_client.AppiumBy;
import io.appium.java_client.MobileElement;
import io.appium.java_client.android.AndroidDriver;
import io.appium.java_client.remote.MobileCapabilityType;
import io.appium.java_client.touch.WaitOptions;
import io.appium.java_client.touch.offset.ElementOption;
import io.appium.java_client.touch.LongPressOptions;
import io.appium.java_client.TouchAction;

import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.Point;

import java.net.URL;
import java.time.Duration;
import java.util.HashMap;
import java.util.Map;

public class ApiDemosLongPressOnRealDevice {
    public static void main(String[] args) throws Exception {
        DesiredCapabilities caps = new DesiredCapabilities();
        caps.setCapability(MobileCapabilityType.PLATFORM_NAME, "Android");
        caps.setCapability(MobileCapabilityType.DEVICE_NAME, "Android Device");
        caps.setCapability(MobileCapabilityType.AUTOMATION_NAME, "UiAutomator2");
        caps.setCapability(MobileCapabilityType.APP, "/path/to/ApiDemos-debug.apk");
        caps.setCapability("noReset", false);

        AndroidDriver driver = new AndroidDriver(new URL("http://127.0.0.1:4723/wd/hub"),
caps);
```

```
        MobileElement menuItem = driver.findElement(AppiumBy.accessibilityId("Views"));

        LongPressOptions lpo = new LongPressOptions()
            .withElement(ElementOption.element(menuItem))
            .withDuration(Duration.ofSeconds(2));
        new TouchAction<>(driver)
           .longPress(lpo)
           .release()
           .perform();
  System.out.println("Long press performed successfully.");

        driver.quit();
    }
}
```

6) Write an Appium Program to connect with realdevice using APIDemo.app to perform scrolling the all option.

```
    import io.appium.java_client.AppiumBy;
    import io.appium.java_client.TouchAction;
    import io.appium.java_client.android.AndroidDriver;
    import io.appium.java_client.mobile.MobileBy;
    import io.appium.java_client.remote.MobileCapabilityType;
    import io.appium.java_client.touch.WaitOptions;
    import io.appium.java_client.touch.offset.PointOption;
    import org.openqa.selenium.remote.DesiredCapabilities;

    import java.net.URL;
```

```
import java.time.Duration;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.NoSuchElementException;

public class ApiDemosScrollAll {
   public static void main(String[] args) throws Exception {
      DesiredCapabilities caps = new DesiredCapabilities();
      caps.setCapability(MobileCapabilityType.PLATFORM_NAME, "Android");
      caps.setCapability(MobileCapabilityType.DEVICE_NAME, "Android Device");
      caps.setCapability(MobileCapabilityType.AUTOMATION_NAME, "UiAutomator2");
      caps.setCapability(MobileCapabilityType.APP, "/path/to/ApiDemos-debug.apk");
      caps.setCapability("noReset", false);

      AndroidDriver driver = new AndroidDriver(new
URL("http://127.0.0.1:4723/wd/hub"), caps);

      driver.findElement(AppiumBy.accessibilityId("Views")).click();

      driver.findElement(MobileBy.AndroidUIAutomator(
         "new UiScrollable(new UiSelector().scrollable(true).instance(0))" +
         ".scrollIntoView(new UiSelector().text(\"WebView\").instance(0))"
      ));

      boolean reachedEnd = false;
      Dimension size = driver.manage().window().getSize();
      int width = size.width;
      int startY = (int)(size.height * 0.8);
      int endY = (int)(size.height * 0.2);

      while (!reachedEnd) {
```

```
            int beforeCount =
driver.findElements(AppiumBy.className("android.widget.TextView")).size();


            new TouchAction<>(driver)
                .press(PointOption.point(width / 2, startY))
                .waitAction(WaitOptions.waitOptions(Duration.ofMillis(500)))
                .moveTo(PointOption.point(width / 2, endY))
                .release()
                .perform();


            Thread.sleep(500);


            int afterCount =
driver.findElements(AppiumBy.className("android.widget.TextView")).size();
            if (afterCount <= beforeCount) {
                reachedEnd = true;  // No new elements found, assumed end
            }
        }


        System.out.println("Scrolled through all options successfully.");
        driver.quit();
    }
}
```

7) Write an Appium Program to connect with realdevice using APIDemo.app to open the calculator and calculate all the operation like (addition, substraction, multiplication, division).

```
import io.appium.java_client.AppiumBy;
import io.appium.java_client.android.AndroidDriver;
import io.appium.java_client.MobileElement;
```

```
import org.openqa.selenium.remote.DesiredCapabilities;

import java.net.URL;
import java.util.concurrent.TimeUnit;

public class ApiDemosCalculatorOperations {
   public static void main(String[] args) {
      AndroidDriver<MobileElement> driver = null;
      try {
         DesiredCapabilities caps = new DesiredCapabilities();
         caps.setCapability("platformName", "Android");
         caps.setCapability("deviceName", "Android Device");
         caps.setCapability("automationName", "UiAutomator2");
          caps.setCapability("appPackage", "com.android.calculator2");
         caps.setCapability("appActivity", "com.android.calculator2.Calculator");
         caps.setCapability("noReset", true);

         driver = new AndroidDriver<>(new URL("http://127.0.0.1:4723/wd/hub"), caps);
         driver.manage().timeouts().implicitlyWait(5, TimeUnit.SECONDS);

         performOperation(driver, "7", "+", "3", "10");
         performOperation(driver, "9", "-", "4", "5");
         performOperation(driver, "6", "×", "7", "42");  // × or *
         performOperation(driver, "8", "÷", "2", "4");   // ÷ or /

      } catch (Exception e) {
         e.printStackTrace();
      } finally {
         if (driver != null) driver.quit();
```

```
        }
    }

    private static void performOperation(AndroidDriver<MobileElement> driver,
                                         String a, String op, String b, String expected) throws
InterruptedException {
        driver.findElement(AppiumBy.id("com.android.calculator2:id/digit_" + a)).click();
        driver.findElement(AppiumBy.accessibilityId(operatorAccessibilityId(op))).click();
        driver.findElement(AppiumBy.id("com.android.calculator2:id/digit_" + b)).click();
        driver.findElement(AppiumBy.accessibilityId("equals")).click();

        String result =
driver.findElement(AppiumBy.id("com.android.calculator2:id/formula")).getText();
        System.out.println(a + " " + op + " " + b + " = " + result + " (Expected: " + expected +
")");
        Thread.sleep(1000);

        driver.findElement(AppiumBy.accessibilityId("clear")).click();
    }

    private static String operatorAccessibilityId(String op) {
        return switch (op) {
            case "+" -> "plus";
            case "-" -> "minus";
            case "×", "*" -> "multiply";
            case "÷", "/" -> "divide";
            default -> "";
        };
    }
}
```