Bukalapak Pretest Test Engineer

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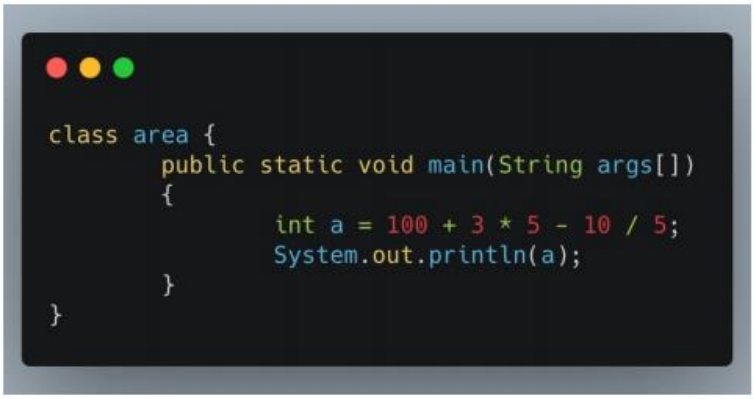
Basic Programming

1. The data-type that usually used in arithmetic operation are integer(short and long integer), float and double.
2. The data-type that usually used in word and character are char and string.
3. The output of the code below



```
class area {
        public static void main(String args[])
        {
                int a = 100 + 3 * 5 - 10 / 5;
                System.out.println(a);
        }
}
```

The output Is a = 113.

Based on the rules of mathematical operation we can sort them from parentheses, exponents, multiplication, division, addition and subtraction.

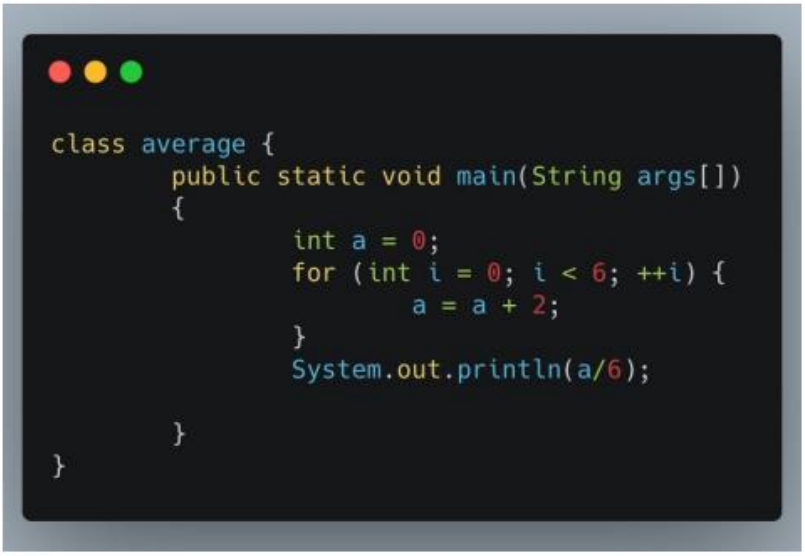
So, int a = 100 + (3*5) –(10/5)

= 100 + 15 – 2

= 115 – 2

= 113

4. The output of code below



```
class average {
        public static void main(String args[])
        {
                int a = 0;
                for (int i = 0; i < 6; ++i) {
                        a = a + 2;
                }
                System.out.println(a/6);

        }
}
```

The output is : a/6 = 2

In this case, int a=0 and below the declaration there is a loop start from int i = 0 to int i < 6.

Before int i < 6, int a = a + 2.

When int i = 0 --→ a = 0 + 2 = 2

Int i = 1 --→ a = 2 + 2 = 4

Int i = 2 --→ a = 4 + 2 = 6

Int i = 3 --→ a = 6 + 2 = 8

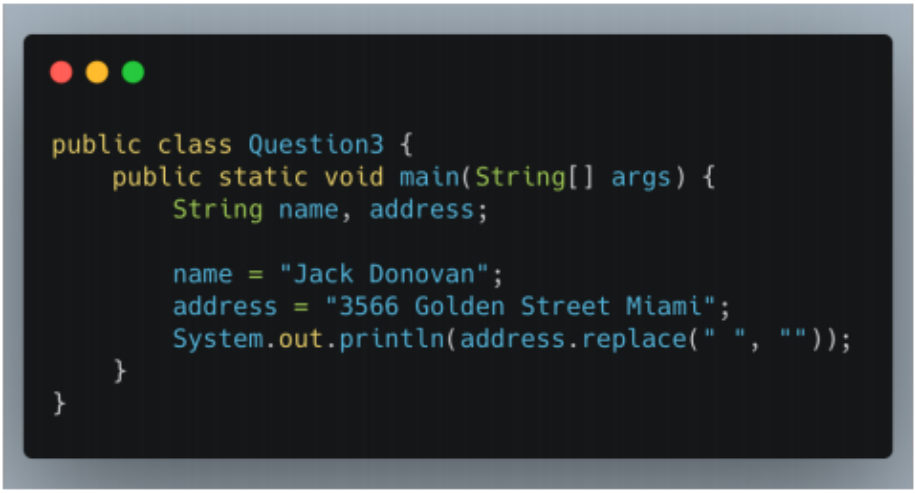
Int i = 4 --→ a = 8 + 2 = 10

Int i = 5 --→ a = 10 + 2 = 12

When int i = 6, the loop is stop.

After the loop stop, the program will print (a/6) = 12/6. So the output is a/6 = 2.

5. The output of code below



```
public class Question3 {
    public static void main(String[] args) {
        String name, address;

        name = "Jack Donovan";
        address = "3566 Golden Street Miami";
        System.out.println(address.replace(" ", ""));
    }
}
```

The output is : 3566GoldenStreetMiami

In this program, there are 2 variables : name and address. The last line of the code use the replace() function. This function is one of the manipulating string functions. When we use the address.replace(" ", ""), the string on the variable will be change the (" "/space) to (""/no spacing). So the output of the code changed “3566 Golden Street Miami” to “3566GoldenStreetMiami”.

Flaky Test

1. What is flaky test?
   Answer:
   Flay test is condition of the test without code changes when the result sometimes is passed and sometimes is failed.
   Flaky test can happen for many different reasons and there are possible causes:
   - external infrastructure
   Flaky test depends on an external infrastructure like a database or a web service and when the database is running, the web service is available the test passes but when the database is off the test fails. So that's the best keeps passing and failing according to the availability of the external infrastucture
   - Shared resources
   A flaky test can occur when developers sharing resource, for example the development team shares the database used by the test and then at some point other person changes the database and these affects the test.
   - Timeouts
   Timeouts is very common in web applications, it can happen when the test is waiting for the process in the web application and the web application for some reason becomes one second slower and then your test fails because of it.

2. An element in a website is using ajax/javascript to show the data (processed as asynchronous). What do you do to test that element?
   Answer:
   To test the element using ajax/javascript we can use method Implicit Wait() if we using Selenium to test the element. This method tells webdriver to wait if the element is not available immediately, but this wait will be in place for the entire time the browser is open. So any search for the elements on the page could take the time the implicit wait is set for.

3. A website page can only be accessed with CAPTCHA. How do you test that page?
   Answer:
   If there is CAPTCHA, we can test with Manual Testing because every captcha always display in random image. It can't use Automation Testing to handle CAPTCHA because Automation Testing can't put the xpath of random image.

Essay Question Topic

1. Create automation test script to test these end-point:

   a. GET -> https://jsonplaceholder.typicode.com/posts -> To make sure this end-point have a correct data-type below:

   ■ userId -> Integer
   ■ id -> Integer
   ■ title -> String
   ■ body -> String

   Answer:
   I used java to test whether the data type of the json file endpoint above matches the expected result. This is the code:

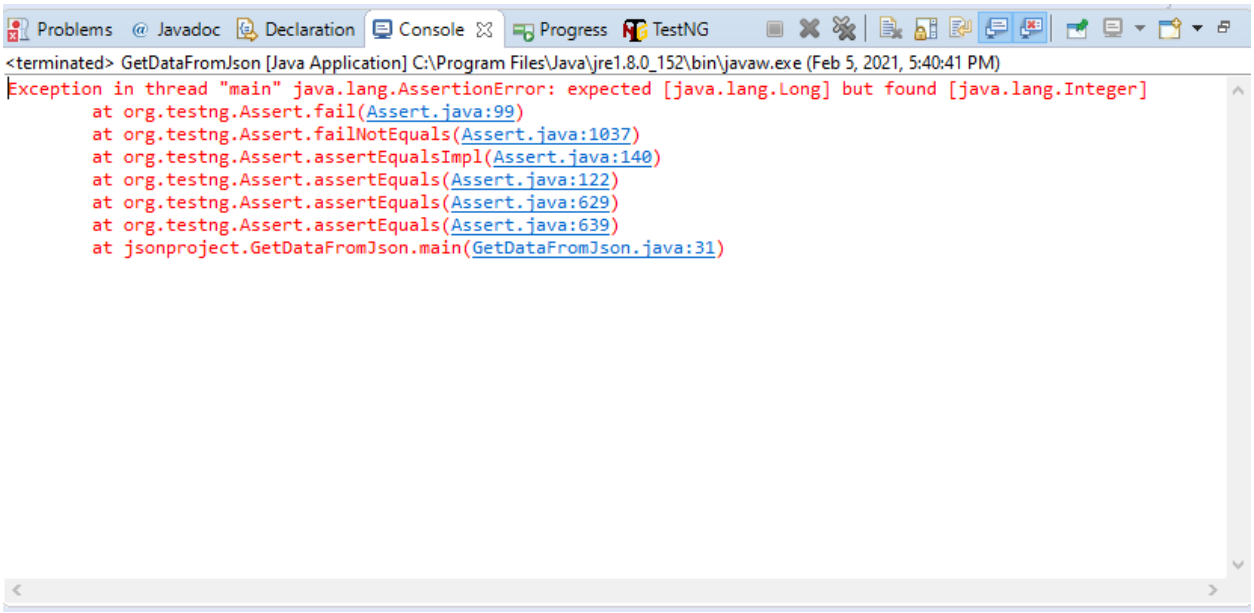
```
package jsonproject;

import static org.testng.Assert.assertEquals;

import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.IOException;
import java.util.Map;

import org.json.simple.JSONArray;
import org.json.simple.JSONObject;
import org.json.simple.parser.JSONParser;
import org.json.simple.parser.ParseException;

public class GetDataFromJson {

	public static void main(String[] args) throws IOException, ParseException {
		JSONParser jsonParser = new JSONParser();
		FileReader reader = new FileReader(".\\jsonfiles\\data1.json");

		Object obj = jsonParser.parse(reader);

		JSONObject dataJsonobj = (JSONObject) obj;
		JSONArray dataArray = (JSONArray) dataJsonobj.get("data1");

		String arr[] = new String[dataArray.size()];

		for(int i = 0; i < dataArray.size(); i++) {
			JSONObject data = (JSONObject) dataArray.get(i);
```

```
        assertEquals("java.lang.Integer",(data.get("userId")).getClass().getName());
                        assertEquals("java.lang.Integer",(data.get("id")).getClass().getName());
                        assertEquals("java.lang.String",(data.get("title")).getClass().getName());
                        assertEquals("java.lang.String",(data.get("body")).getClass().getName());


                        //arr[i] = userId+","+id+","+title+","+body;
                        System.out.println("userid:"+data.get("userId"));
                        System.out.println("id : "+data.get("id"));
                        System.out.println("title : "+data.get("title"));
                        System.out.println("body : "+data.get("body"));

                }
        }

}
```

In that code, I save the json file in data1.json, then I made an object to save the Array data from json. After I made the Array, I make looping to from int i = 0 to int i < dataArray.size().

From the looping, program will check whether the data type of the json file above matches the expected result with assertEquals method. If the expected result don't matches, the program will be stop, but if the expected result matches with the json data type, so we can get the data output userId, id, title and body.

In this case, the expected result from userId and id which is "java.lang.Long" didn't matches with the expected result "java.lang.Integer". So we can't get the output.



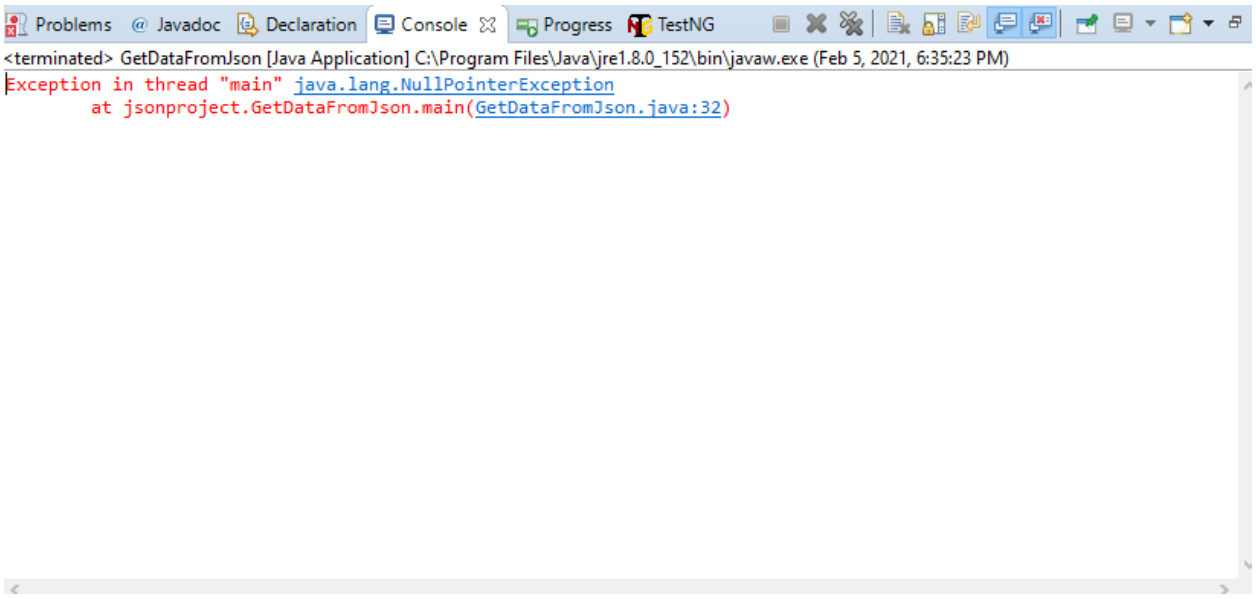
b. POST -> https://jsonplaceholder.typicode.com/posts -> To make sure this end-point get a correct response compare with the input data:

I used java to test whether the data type of the json file endpoint above matches the json file input above. This is the code:

```
package jsonproject;

import static org.testng.Assert.assertEquals;

import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.IOException;
import java.lang.reflect.Array;
import java.util.Map;

import org.json.simple.JSONArray;
import org.json.simple.JSONObject;
import org.json.simple.parser.JSONParser;
import org.json.simple.parser.ParseException;

public class GetDataFromJson {

 public static void main(String[] args) throws IOException, ParseException {
        JSONParser jsonParser = new JSONParser();
        FileReader reader = new FileReader(".\\jsonfiles\\data1.json");
        FileReader reader2 = new FileReader(".\\jsonfiles\\data2.json");

        Object obj = jsonParser.parse(reader);
```

```
        Object obj2 = jsonParser.parse(reader2);

        JSONObject dataJsonobj = (JSONObject) obj;
        JSONArray dataArray = (JSONArray) dataJsonobj.get("data1");

        JSONObject dataJsonobj2 = (JSONObject) obj;
        JSONArray dataArray2 = (JSONArray) dataJsonobj2.get("data2");


 assertEquals((dataJsonobj.get("userId")).getClass().getName(),(dataJsonobj2.get("userId")).getCl
ass().getName());

 assertEquals((dataJsonobj.get("id")).getClass().getName(),(dataJsonobj2.get("id")).getClass().get
Name());

 assertEquals((dataJsonobj.get("title")).getClass().getName(),(dataJsonobj2.get("title")).getClass()
.getName());

 assertEquals((dataJsonobj.get("body")).getClass().getName(),(dataJsonobj.get("body")).getClass(
).getName());

        JSONObject[] mergedObject = {dataJsonobj,dataJsonobj2};

 }

}
```

In that code, I save the json file endpoit in “data1.json” and json file input in “data2.json”. I use the assertEquals method to check wheter data type from “data1.json” are same with data type “data2.json”. If the data type of each element from “data1.json” and “data2.json” are same, so the program will merge the object “dataJsonobj” dengan “dataJsonobj2”. But in this case, the data type of “data1.json” are not same with data type of “data2.json”, so the program will be error.


Problems
Javadoc
Declaration
Console
Progress
TestNG
<terminated> GetDataFromJson [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (Feb 5, 2021, 6:35:23 PM)
Exception in thread "main" java.lang.NullPointerException
at jsonproject.GetDataFromJson.main(GetDataFromJson.java:32)

2. Create automation test script to test 1 of these scenarios using Bukalapak website:
   - Register
   - Login
   - Add to Cart
   - Search Product

   Answer :

   I will create automation test script using Selenium Web driver with Cucumber Framework to test Login and Register. Below my automation script using Cucumber Framework

   ❖ **LOGIN**

   a. Scenario

```
  Scenario: Test Login
    Given open firefox
    When I input valid email and password
    Then I can login successfully
```

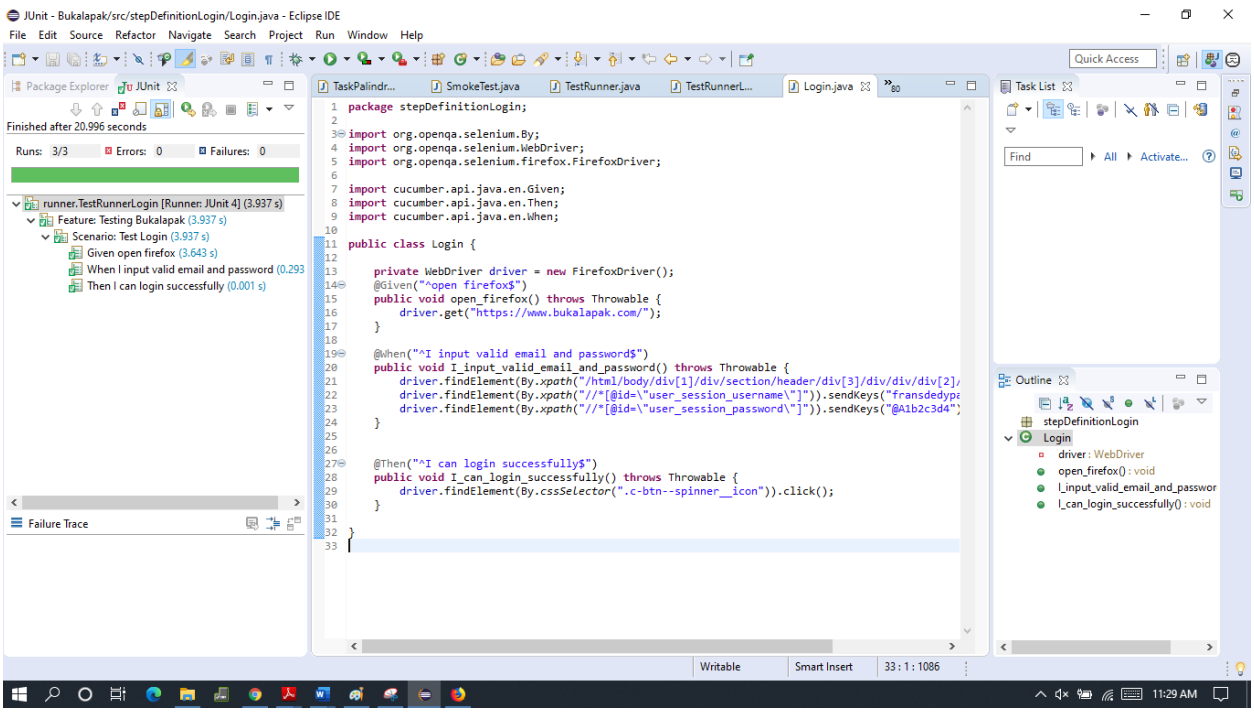
   b. Step Definition

```
package stepDefinitionLogin;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;

import cucumber.api.java.en.Given;
import cucumber.api.java.en.Then;
import cucumber.api.java.en.When;

public class Login {

    private WebDriver driver = new FirefoxDriver();
    @Given("^open firefox$")
    public void open_firefox() throws Throwable {
           driver.get("https://www.bukalapak.com/");
    }

    @When("^I input valid email and password$")
    public void I_input_valid_email_and_password() throws Throwable {

    driver.findElement(By.xpath("/html/body/div[1]/div/section/header/div[3]
/div/div/div[2]/div/a[2]/p")).click();

    driver.findElement(By.xpath("//*[@id=\"user_session_username\"]")).sendK
eys("fransdedypasaribu@gmail.com");

    driver.findElement(By.xpath("//*[@id=\"user_session_password\"]")).sendK
eys("@A1b2c3d4");
    }


    @Then("^I can login successfully$")
```

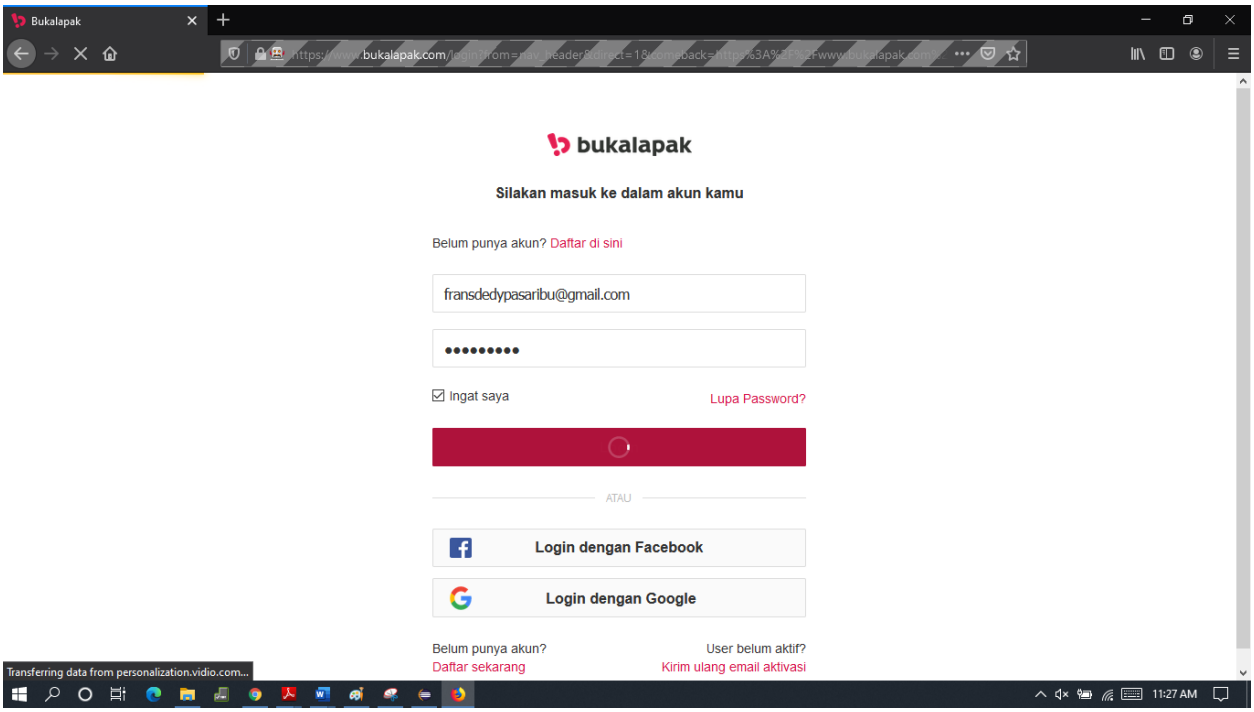
```
    public void I_can_login_successfully() throws Throwable {
          driver.findElement(By.cssSelector(".c-btn--
spinner__icon")).click();
    }

}
```

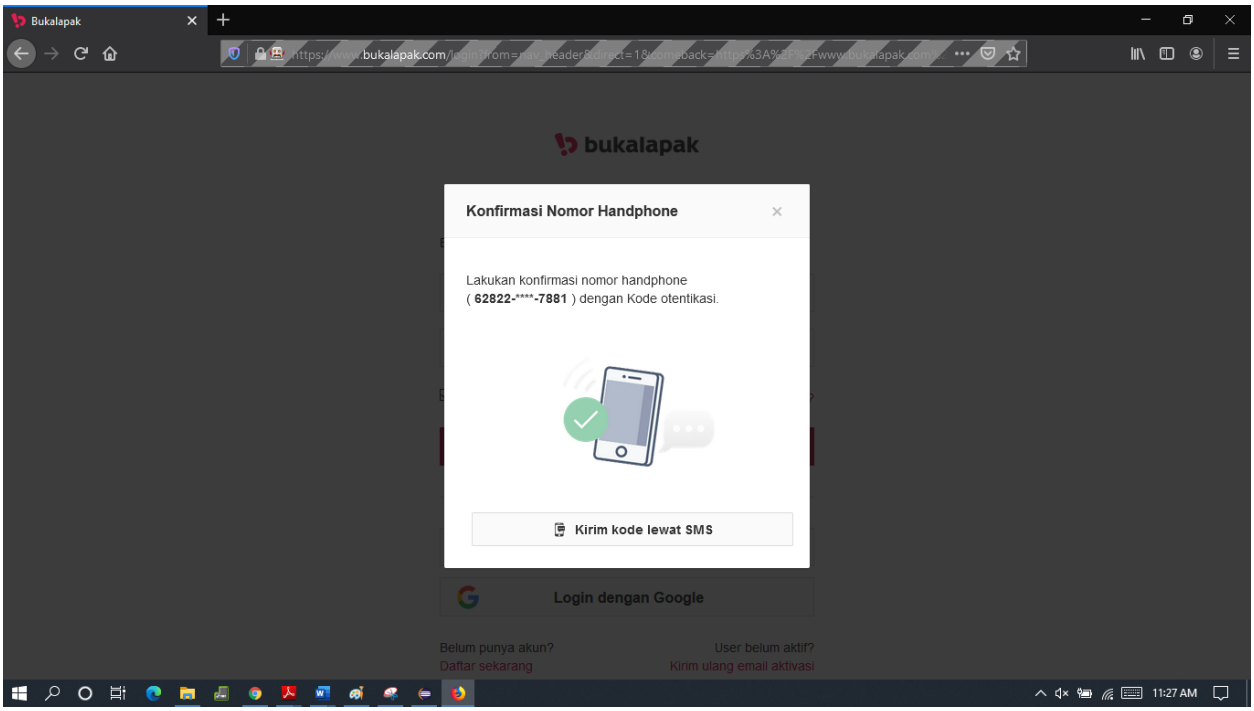
c. Test Runner

```
package runner;

import org.junit.runner.RunWith;

import cucumber.api.junit.Cucumber;

@RunWith (Cucumber.class)
@Cucumber.Options(features = "Features", glue = "stepDefinitionLogin")

public class TestRunnerLogin {

}
```

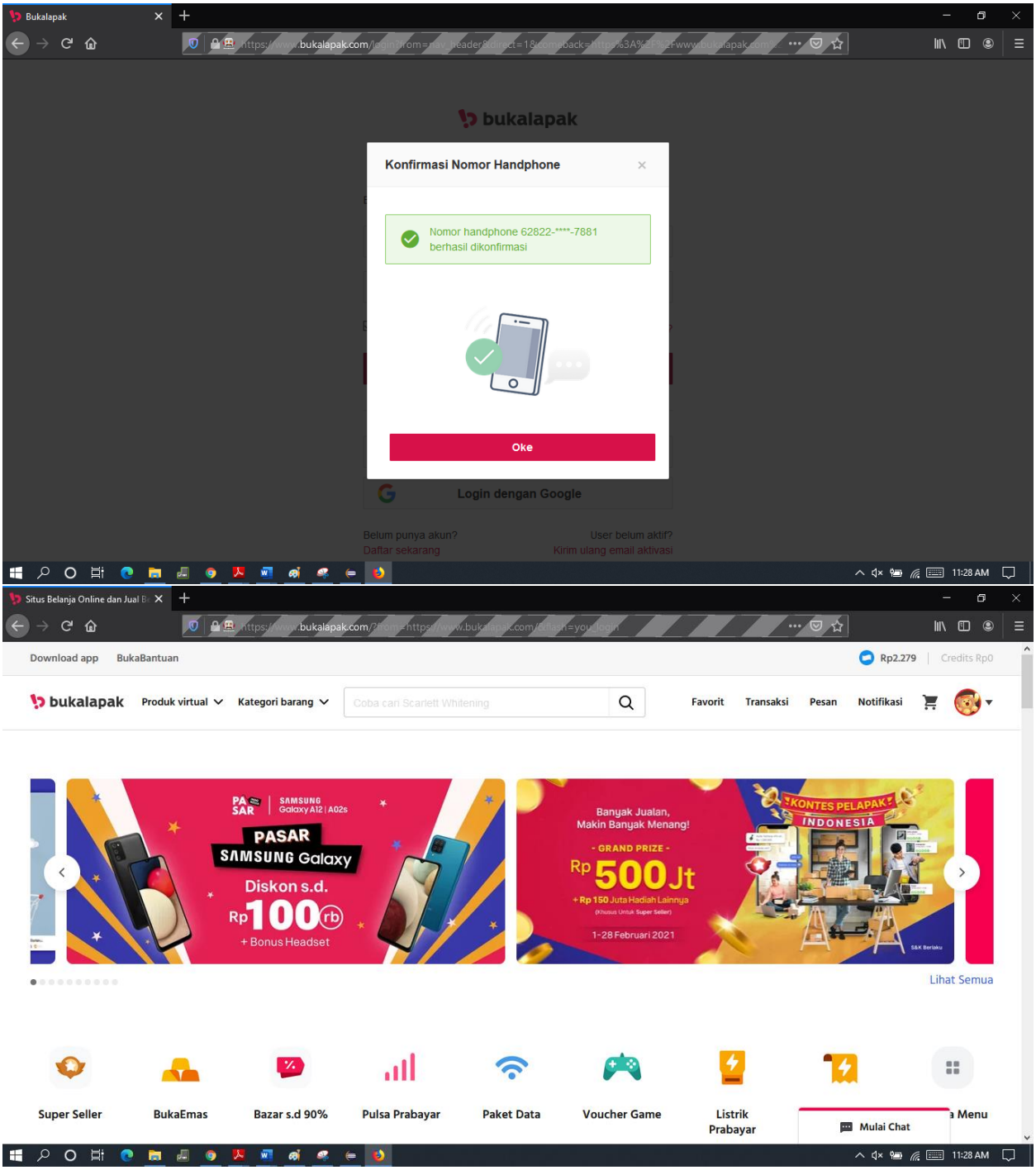


d. Snippet Browser





At this stage, we can't make automation testing because the system need to send authentication code to our phone, so we must to test it manually.


Bukalapak
bukalapak.com
bukalapak
Konfirmasi Nomor Handphone
Nomor handphone 62822-****-7881 berhasil dikonfirmasi
Oke
Login dengan Google
Belum punya akun?
Daftar sekarang
User belum aktif?
Kirim ulang email aktivasi
11:28 AM
Situs Belanja Online dan Jual
bukalapak.com
Download app
BukaBantuan
Rp2.279
Credits Rp0
bukalapak
Produk virtual
Kategori barang
Coba cari Scarlett Whitening
Favorit
Transaksi
Pesan
Notifikasi
PASAR SAMSUNG Galaxy
Diskon s.d. Rp100rb
+ Bonus Headset
Banyak Jualan, Makin Banyak Menang!
- GRAND PRIZE -
Rp 500 Jt
+ Rp 150 Juta Hadiah Lainnya
1-28 Februari 2021
KONTES PELAPAK INDONESIA
Lihat Semua
Super Seller
BukaEmas
Bazar s.d 90%
Pulsa Prabayar
Paket Data
Voucher Game
Listrik Prabayar
Mulai Chat
11:28 AM

❖ **REGISTER**

a. Scenario

```
Scenario: Test Register
 Given open firefox
 When I input valid email or telephone number
 Then I click register button
 When I filled out the form
 Then I have registered
```

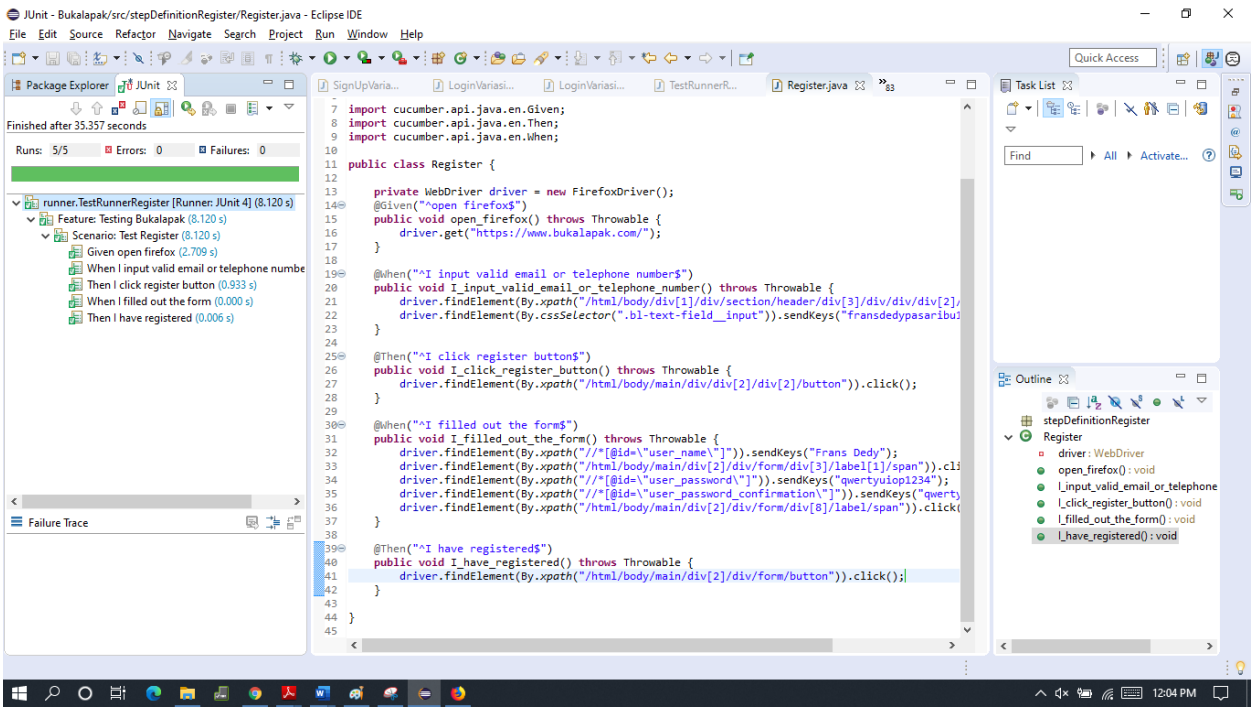
b. Step Definition

```
package stepDefinitionRegister;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;

import cucumber.api.java.en.Given;
import cucumber.api.java.en.Then;
import cucumber.api.java.en.When;

public class Register {

    private WebDriver driver = new FirefoxDriver();
    @Given("^open firefox$")
    public void open_firefox() throws Throwable {
           driver.get("https://www.bukalapak.com/");
    }

    @When("^I input valid email or telephone number$")
    public void I_input_valid_email_or_telephone_number() throws Throwable {

    driver.findElement(By.xpath("/html/body/div[1]/div/section/header/div[3]
/div/div/div[2]/div/a[1]/p")).click();
           driver.findElement(By.cssSelector(".bl-text-
field__input")).sendKeys("fransdedypasaribu12@gmail.com");
    }

    @Then("^I click register button$")
    public void I_click_register_button() throws Throwable {

    driver.findElement(By.xpath("/html/body/main/div/div[2]/div[2]/button"))
.click();
    }

    @When("^I filled out the form$")
    public void I_filled_out_the_form() throws Throwable {

    driver.findElement(By.xpath("//*[@id=\"user_name\"]")).sendKeys("Frans
Dedy");

    driver.findElement(By.xpath("/html/body/main/div[2]/div/form/div[3]/labe
l[1]/span")).click();
```

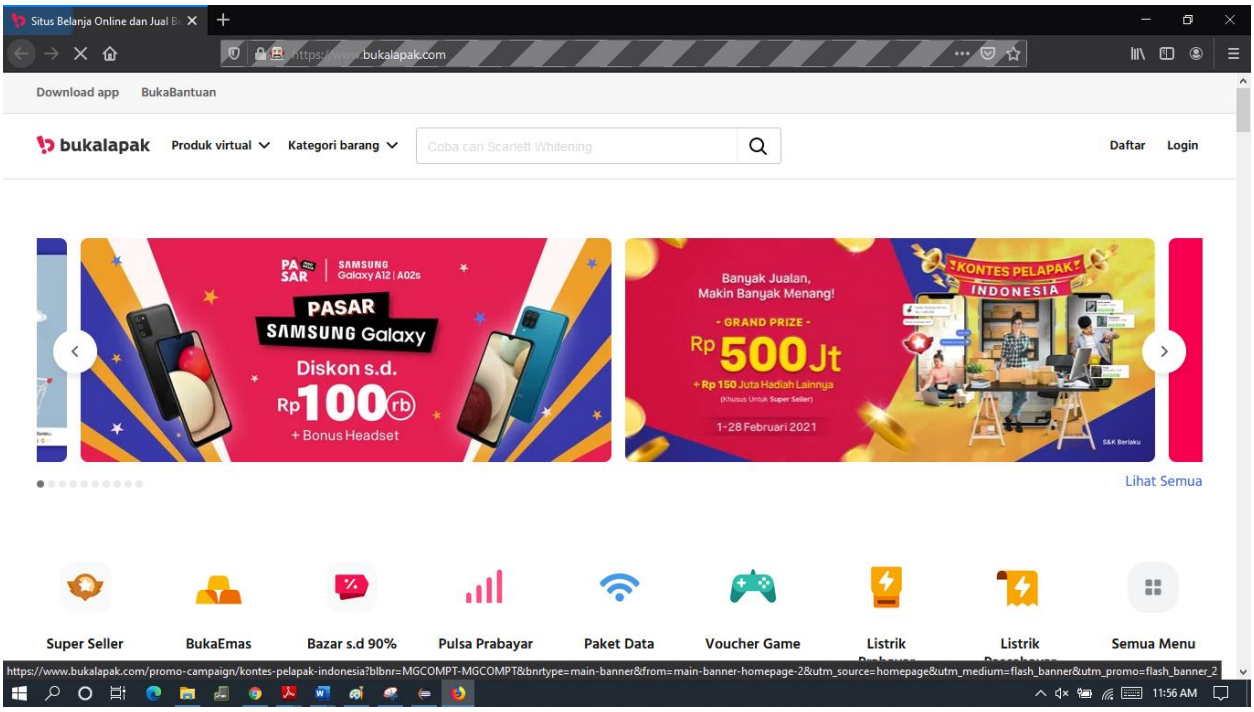
```
    driver.findElement(By.xpath("//*[@id=\"user_password\"]")).sendKeys("qwe
rtyuiop1234");

    driver.findElement(By.xpath("//*[@id=\"user_password_confirmation\"]")).
sendKeys("qwertyuiop1234");

    driver.findElement(By.xpath("/html/body/main/div[2]/div/form/div[8]/labe
l/span")).click();
    }

    @Then("^I have registered$")
    public void I_have_registered() throws Throwable {

    driver.findElement(By.xpath("/html/body/main/div[2]/div/form/button")).c
lick();
    }

}
```

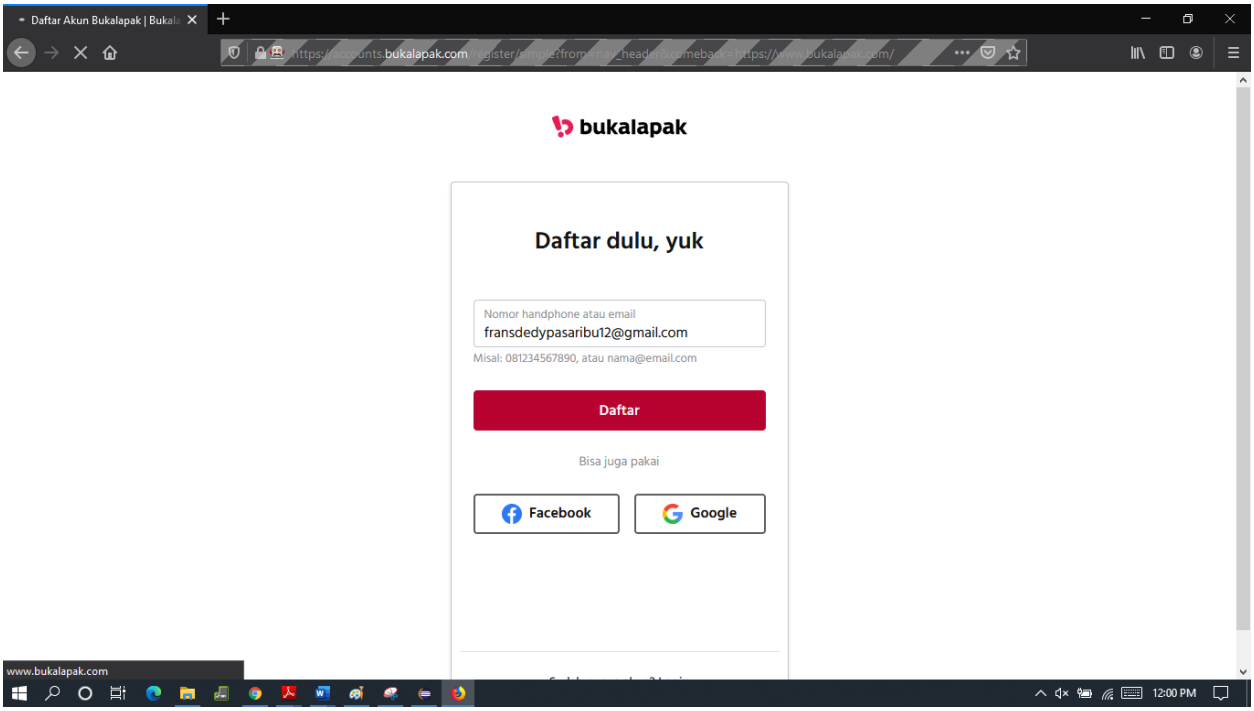
c. Test Runner

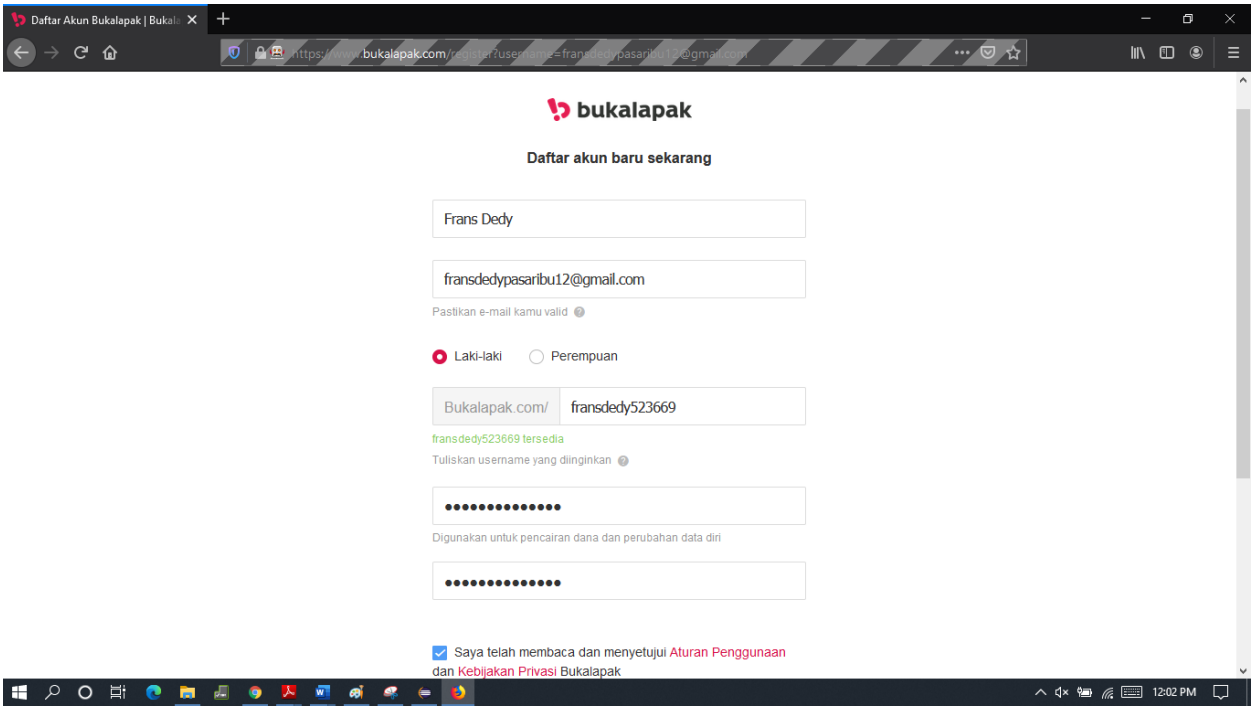
```
package runner;

import org.junit.runner.RunWith;

import cucumber.api.junit.Cucumber;

@RunWith (Cucumber.class)
@Cucumber.Options(features = "Features", glue = "stepDefinitionRegister")

public class TestRunnerRegister {

}
```

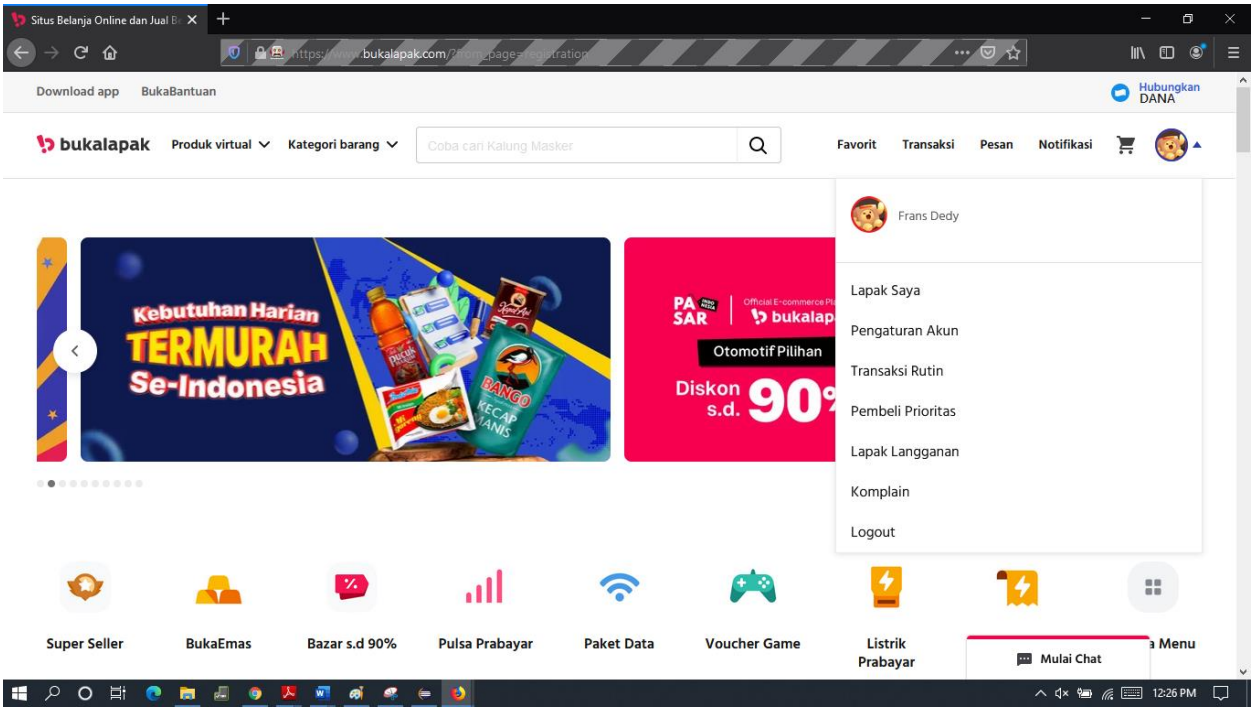


d. Snippet Browser




Daftar Akun Bukalapak | Bukal
https://accounts.bukalapak.com/register/simple?from=nav_header&comeback=https://www.bukalapak.com/
bukalapak
Daftar dulu, yuk
Nomor handphone atau email
fransdedypasaribu12@gmail.com
Misal: 081234567890, atau nama@email.com
Daftar
Bisa juga pakai
Facebook
Google
www.bukalapak.com
12:00 PM


Daftar Akun Bukalapak | Bukal
https://www.bukalapak.com/register?username=fransdedypasaribu12@gmail.com
bukalapak
Daftar akun baru sekarang
Frans Dedy
fransdedypasaribu12@gmail.com
Pastikan e-mail kamu valid
Laki-laki
Perempuan
Bukalapak.com/
fransdedy523669
fransdedy523669 tersedia
Tuliskan username yang diinginkan
Digunakan untuk pencairan dana dan perubahan data diri
Saya telah membaca dan menyetujui Aturan Penggunaan dan Kebijakan Privasi Bukalapak
12:02 PM



We can make automation testing for Register.

3. Download this apk:
   https://apkpure.com/sample-android-app-login-test/com.loginmodule.learning/download?from=details
   Create and automation test (positive and negative)for apps with 1 of these scenarios:
   a. Register
   b. Login

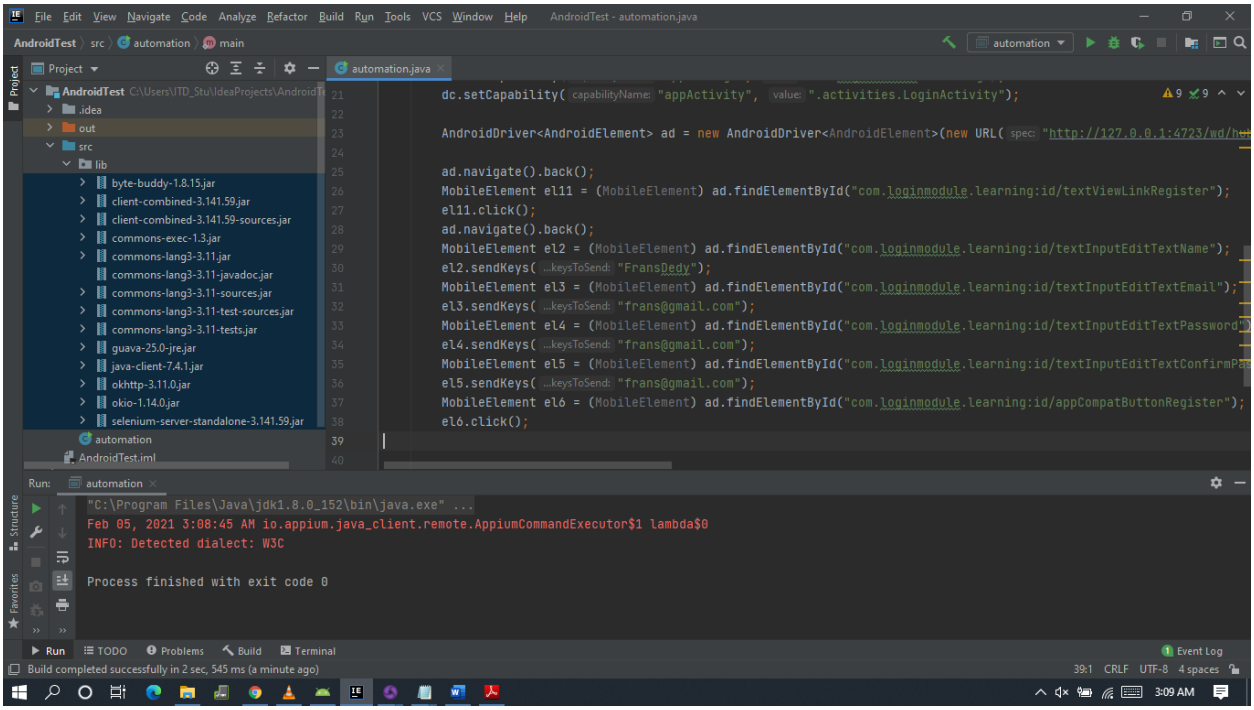
   Answer:

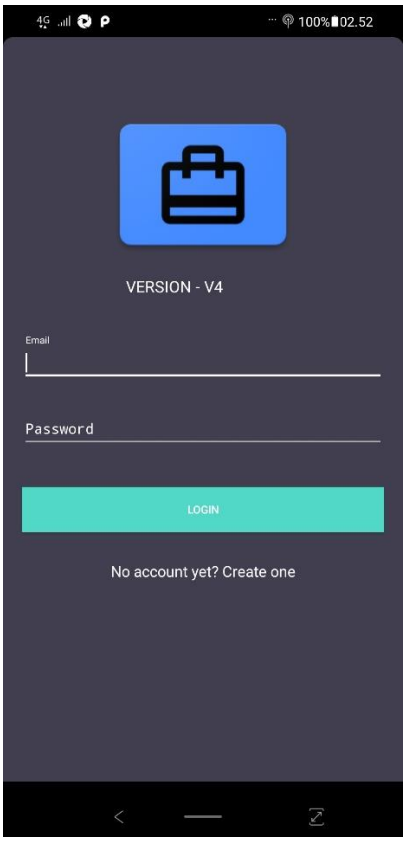
   I will create automation testing Register with Appium.

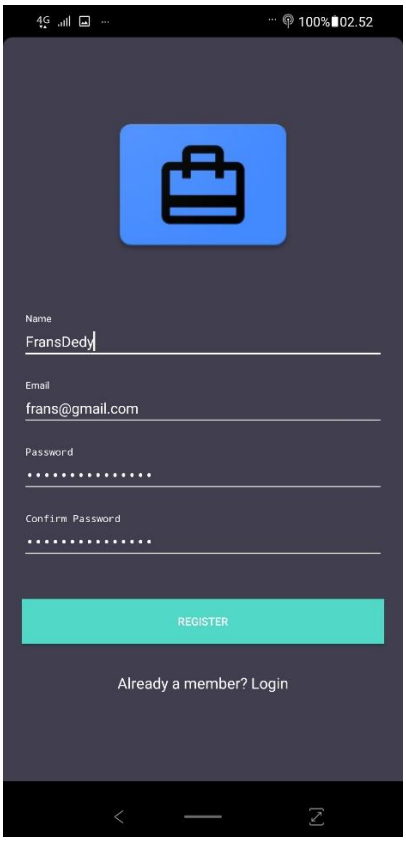
   a. Code and result screenshot file for automation testing Register (Positive)

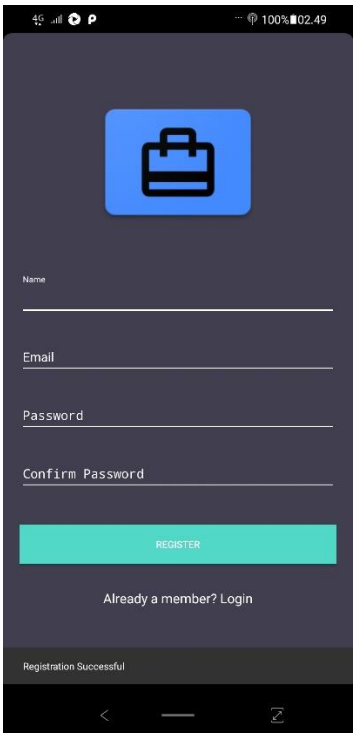
```
import io.appium.java_client.MobileElement;
import io.appium.java_client.android.AndroidDriver;
import io.appium.java_client.android.AndroidElement;
import io.appium.java_client.remote.MobileCapabilityType;
import org.openqa.selenium.By;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.testng.Assert;

import java.net.MalformedURLException;
import java.net.URL;

public class automation {

    public static void main(String[] args) throws MalformedURLException
{

        DesiredCapabilities dc = new DesiredCapabilities();


dc.setCapability(MobileCapabilityType.DEVICE_NAME,"J6AXGF04M771ZAB");
        dc.setCapability("platformName", "Android");
        dc.setCapability("appPackage", "com.loginmodule.learning");
        dc.setCapability("appActivity", ".activities.LoginActivity");

        AndroidDriver<AndroidElement> ad = new
AndroidDriver<AndroidElement>(new
URL("http://127.0.0.1:4723/wd/hub"),dc);

        ad.navigate().back();
        MobileElement el11 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textViewLinkRegister");
        el11.click();
        ad.navigate().back();
        MobileElement el2 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textInputEditTextName")
;
        el2.sendKeys("FransDedy");
        MobileElement el3 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textInputEditTextEmail"
);
        el3.sendKeys("frans@gmail.com");
        MobileElement el4 = (MobileElement)
```

```
ad.findElementById("com.loginmodule.learning:id/textInputEditTextPasswo
rd");
        el4.sendKeys("frans@gmail.com");
        MobileElement el5 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textInputEditTextConfir
mPassword");
        el5.sendKeys("frans@gmail.com");
        MobileElement el6 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/appCompatButtonRegister
");
        el6.click();

    }
}
```




100%02.52
VERSION - V4
Email
Password
LOGIN
No account yet? Create one


100%02.52
Name
FransDedy
Email
frans@gmail.com
Password
Confirm Password
REGISTER
Already a member? Login

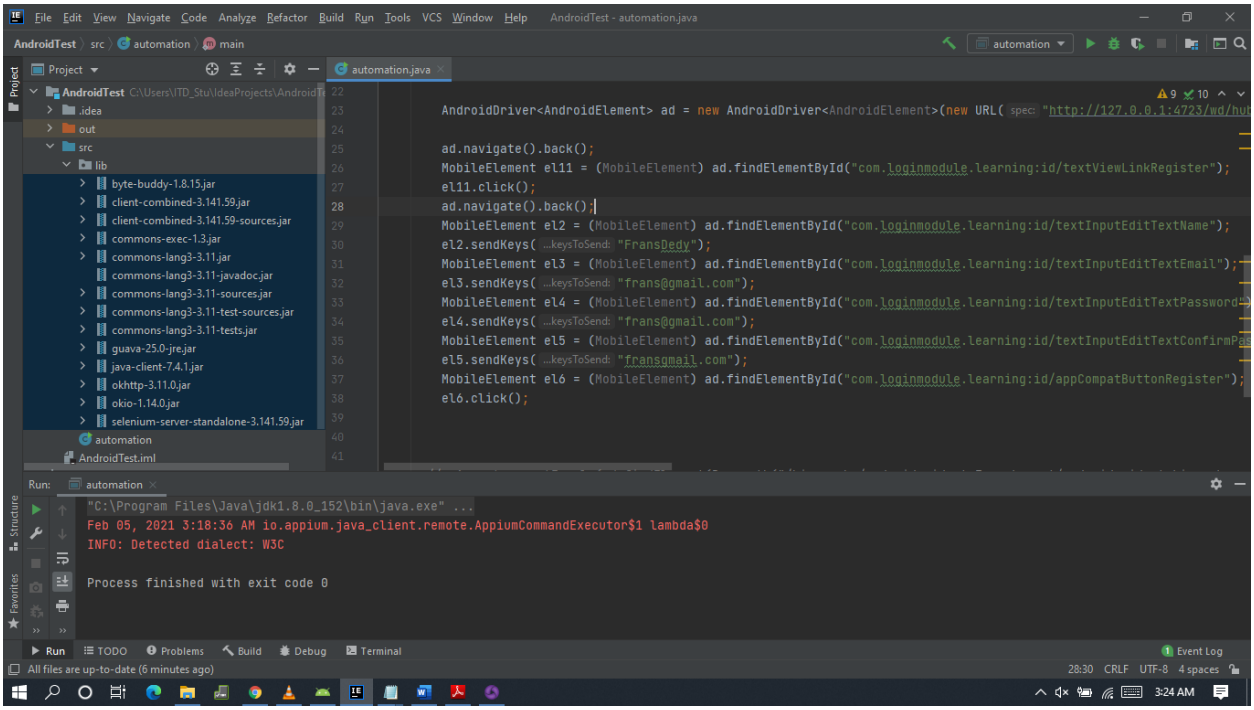

100%02.49
Name
Email
Password
Confirm Password
REGISTER
Already a member? Login
Registration Successful

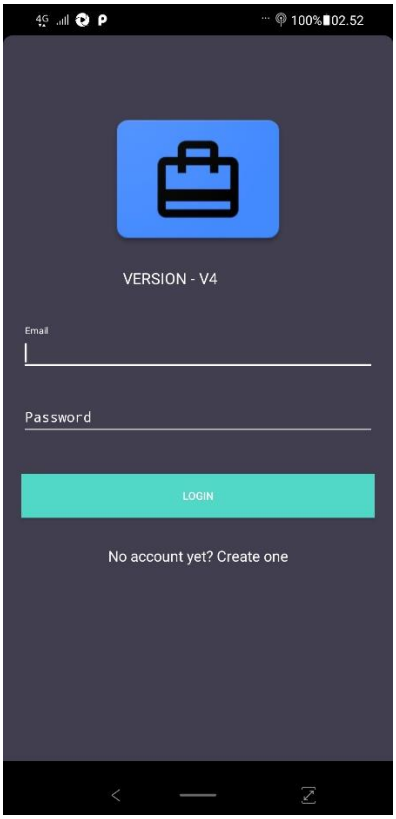
b. Code and result screenshot file for automation testing Register (Negative)

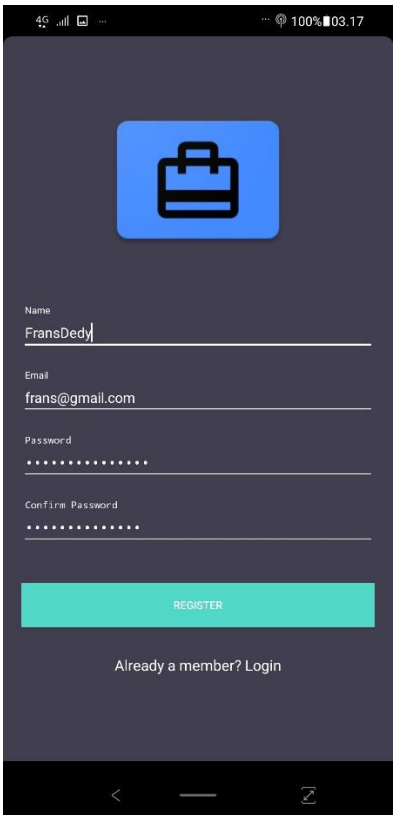
In this case, I changed the Confirm Password from "frans@gmail.com" to "fransgmail.com", so the Register will be failed.

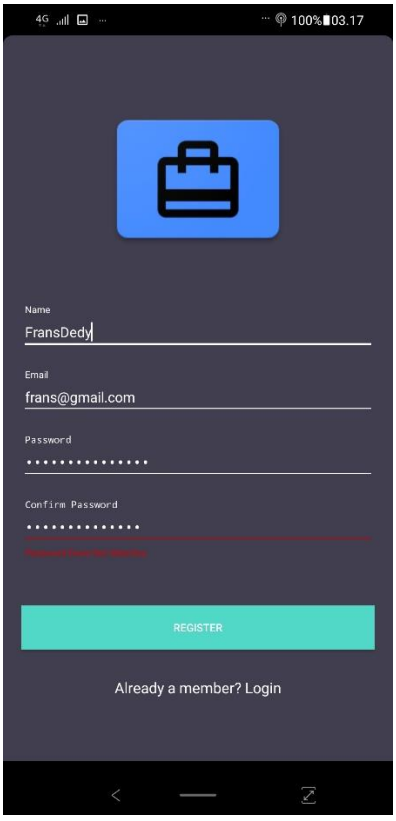
```
import io.appium.java_client.MobileElement;
import io.appium.java_client.android.AndroidDriver;
import io.appium.java_client.android.AndroidElement;
import io.appium.java_client.remote.MobileCapabilityType;
import org.openqa.selenium.By;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.testng.Assert;

import java.net.MalformedURLException;
import java.net.URL;

public class automation {

    public static void main(String[] args) throws MalformedURLException
{

        DesiredCapabilities dc = new DesiredCapabilities();


dc.setCapability(MobileCapabilityType.DEVICE_NAME,"J6AXGF04M771ZAB");
        dc.setCapability("platformName", "Android");
        dc.setCapability("appPackage", "com.loginmodule.learning");
        dc.setCapability("appActivity", ".activities.LoginActivity");

        AndroidDriver<AndroidElement> ad = new
AndroidDriver<AndroidElement>(new
URL("http://127.0.0.1:4723/wd/hub"),dc);

        ad.navigate().back();
        MobileElement el11 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textViewLinkRegister");
        el11.click();
        ad.navigate().back();
        MobileElement el2 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textInputEditTextName")
;
        el2.sendKeys("FransDedy");
        MobileElement el3 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textInputEditTextEmail"
);
        el3.sendKeys("frans@gmail.com");
        MobileElement el4 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textInputEditTextPasswo
rd");
        el4.sendKeys("frans@gmail.com");
        MobileElement el5 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/textInputEditTextConfir
mPassword");
        el5.sendKeys("fransgmail.com");
        MobileElement el6 = (MobileElement)
ad.findElementById("com.loginmodule.learning:id/appCompatButtonRegister
```

```
');
        el6.click();

    }
}
```


File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
AndroidTest - automation.java
AndroidTest src automation main
automation
Project
automation.java
AndroidTest C:\Users\ITD_Stu\IdeaProjects\AndroidTe
.idea
out
src
lib
byte-buddy-1.8.15.jar
client-combined-3.141.59.jar
client-combined-3.141.59-sources.jar
commons-exec-1.3.jar
commons-lang3-3.11.jar
commons-lang3-3.11-javadoc.jar
commons-lang3-3.11-sources.jar
commons-lang3-3.11-test-sources.jar
commons-lang3-3.11-tests.jar
guava-25.0-jre.jar
java-client-7.4.1.jar
okhttp-3.11.0.jar
okio-1.14.0.jar
selenium-server-standalone-3.141.59.jar
automation
AndroidTest.iml
AndroidDriver<AndroidElement> ad = new AndroidDriver<AndroidElement>(new URL(spec: "http://127.0.0.1:4723/wd/hub
ad.navigate().back();
MobileElement el11 = (MobileElement) ad.findElementById("com.loginmodule.learning:id/textViewLinkRegister");
el11.click();
ad.navigate().back();
MobileElement el2 = (MobileElement) ad.findElementById("com.loginmodule.learning:id/textInputEditTextName");
el2.sendKeys(...keysToSend: "FransDedy");
MobileElement el3 = (MobileElement) ad.findElementById("com.loginmodule.learning:id/textInputEditTextEmail");
el3.sendKeys(...keysToSend: "frans@gmail.com");
MobileElement el4 = (MobileElement) ad.findElementById("com.loginmodule.learning:id/textInputEditTextPassword");
el4.sendKeys(...keysToSend: "frans@gmail.com");
MobileElement el5 = (MobileElement) ad.findElementById("com.loginmodule.learning:id/textInputEditTextConfirmPas
el5.sendKeys(...keysToSend: "fransgmail.com");
MobileElement el6 = (MobileElement) ad.findElementById("com.loginmodule.learning:id/appCompatButtonRegister");
el6.click();
Run: automation
"C:\Program Files\Java\jdk1.8.0_152\bin\java.exe" ...
Feb 05, 2021 3:18:36 AM io.appium.java_client.remote.AppiumCommandExecutor$1 lambda$0
INFO: Detected dialect: W3C
Process finished with exit code 0
Run TODO Problems Build Debug Terminal
Event Log
All files are up-to-date (6 minutes ago)
28:30 CRLF UTF-8 4 spaces
3:24 AM


100%02.52
VERSION - V4
Email
Password
LOGIN
No account yet? Create one


100%03.17
Name
FransDedy
Email
frans@gmail.com
Password
Confirm Password
REGISTER
Already a member? Login


100%03.17
Name
FransDedy
Email
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Password
Confirm Password
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