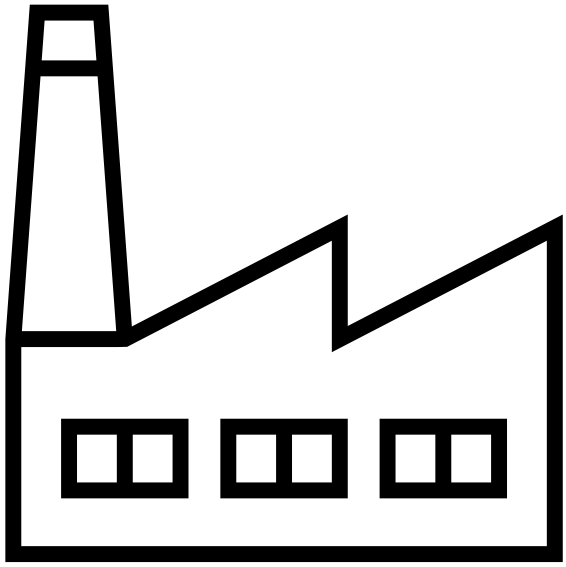
Summative Assessment 4

18-23 July 2024

Jamie Myburgh



Implementation

Question 5

Contents

a) Compliance with User Expectations 4

Needs and Expectations of Program 4

Test Cases 4

Shift 1: Regular Hours 5

Shift 1: Overtime 5

Shift 2: Regular Hours with Retirement 6

Shift 2: Regular Hours without Retirement 6

Shift 2: Overtime with Retirement 7

Shift 2: Overtime without Retirement 7

Shift 3: Regular Hours with Retirement 8

Shift 3: Regular Hours without Retirement 8

Shift 3: Overtime with Retirement 9

Shift 3: Overtime without Retirement 9

b) User Manual 10

Installation Guide: 10

Step 1: 10

Step 2: 10

Step 3: 11

Step 4: 12

Step 5: 13

Step 6: 14

Step 7: 14

Step 8: 15

Step 9: 15

User Manual: 16

Step 1: 16

Step 2: 17

Step 3: 18

Step 4: 19

Step 5: 20

Step 6: 21

Step 7: 22

Step 8: 23
Step 9: 24
Step 10: 25
Step 11: 26
Step 12: 27
Step 13: 28
Step 14: 29
Step 15: 30
Step 16: 31
c) Installation Plan 32
Timelines 32
Resources 32
Contingency Measures 32

a) Compliance with User Expectations

Needs and Expectations of Program

A meeting with an UrbanFurn representative was commenced regarding the program, to ensure that the specifications and requirements of the program have been met. The UrbanFurn representative was given a walkthrough of the program, as well as a walkthrough of the code.

A quick run-through of how to use the program was also done, in which the representative tested the program for themselves, by inputting their own values and information into the system to observe its functionality and the accuracy of the calculations.

After further discussions regarding maintenance and updating of information in the future, it was then concluded that the company was satisfied with the program, that there were no other additions to the program, and that no other aspects were to be changed.

Test Cases

A series of test cases were developed to cover all possible user scenarios and their expected outcomes. There are approximately 10 possible outcomes that can occur through user input, and comprehensive test cases were developed for this.

Shift 1: Regular Hours

```
run:
Welcome to the UrbanFurn Payroll Calculator!
-------------------------------------------

Please enter the hours you've worked for the week:
40

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
1

Hours: 40
Shift: 1st
Rate: R50 per hour

Regular Pay: R2000.0
Net: R2000.0
BUILD SUCCESSFUL (total time: 7 seconds)
```

Shift 1: Overtime

```
run:
Welcome to the UrbanFurn Payroll Calculator!
-------------------------------------------

Please enter the hours you've worked for the week:
50

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
1

Hours: 50
Shift: 1st
Rate: R50 per hour

Regular pay: R2000.0
Overtime: 10 hours.
Overtime pay: R750.0
Total: R2750.0
Net: R2750.0
```

Shift 2: Regular Hours with Retirement

```
run:
Welcome to the UrbanFurn Payroll Calculator!
---------------------------------------------

Please enter the hours you've worked for the week:
40

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
2

Would you like to apply for a retirement fund? (yes/no)
yes

Hours: 40
Shift: 2nd
Rate: R70 per hour

Regular Pay: R2800.0
Retirement deduction: R140.0
Net: R2660.0
BUILD SUCCESSFUL (total time: 4 seconds)
```

Shift 2: Regular Hours without Retirement

```
run:
Welcome to the UrbanFurn Payroll Calculator!
---------------------------------------------

Please enter the hours you've worked for the week:
40

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
2

Would you like to apply for a retirement fund? (yes/no)
no

Hours: 40
Shift: 2nd
Rate: R70 per hour

Regular Pay: R2800.0
Net: R2800.0
BUILD SUCCESSFUL (total time: 3 seconds)
```

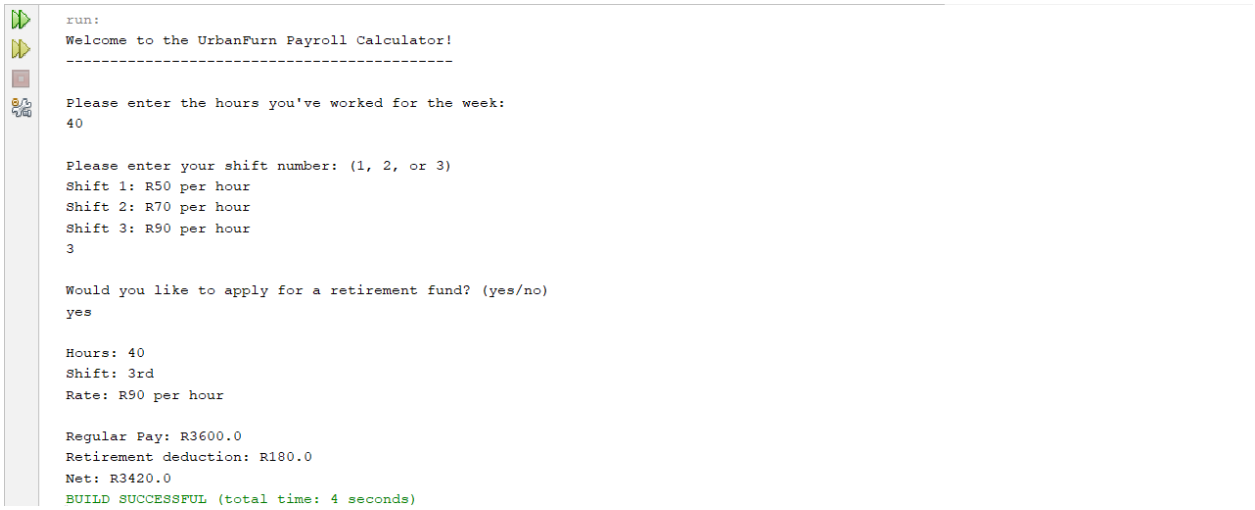
Shift 2: Overtime with Retirement

```
run:
Welcome to the UrbanFurn Payroll Calculator!
---------------------------------------------

Please enter the hours you've worked for the week:
50

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
2

Would you like to apply for a retirement fund? (yes/no)
yes

Hours: 50
Shift: 2nd
Rate: R70 per hour

Regular pay: R2800.0
Overtime: 10 hours.
Overtime pay: R1050.0
Total: R3850.0
Retirement deduction: R192.5
Net: R3657.5
BUILD SUCCESSFUL (total time: 7 seconds)
```

Shift 2: Overtime without Retirement

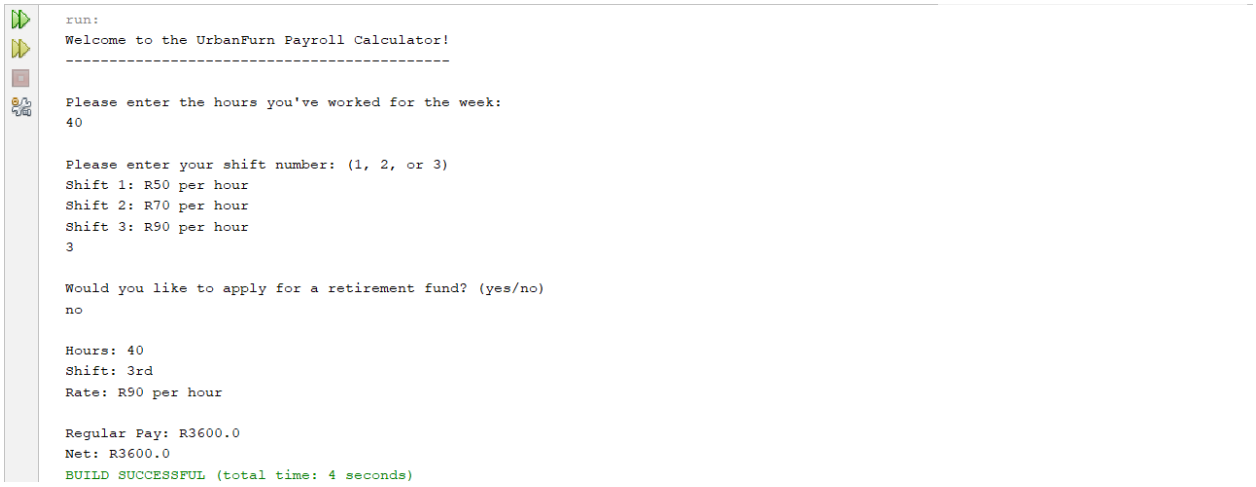
```
run:
Welcome to the UrbanFurn Payroll Calculator!
---------------------------------------------

Please enter the hours you've worked for the week:
50

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
2

Would you like to apply for a retirement fund? (yes/no)
no

Hours: 50
Shift: 2nd
Rate: R70 per hour

Regular pay: R2800.0
Overtime: 10 hours.
Overtime pay: R1050.0
Total: R3850.0
Net: R3850.0
BUILD SUCCESSFUL (total time: 5 seconds)
```

Shift 3: Regular Hours with Retirement



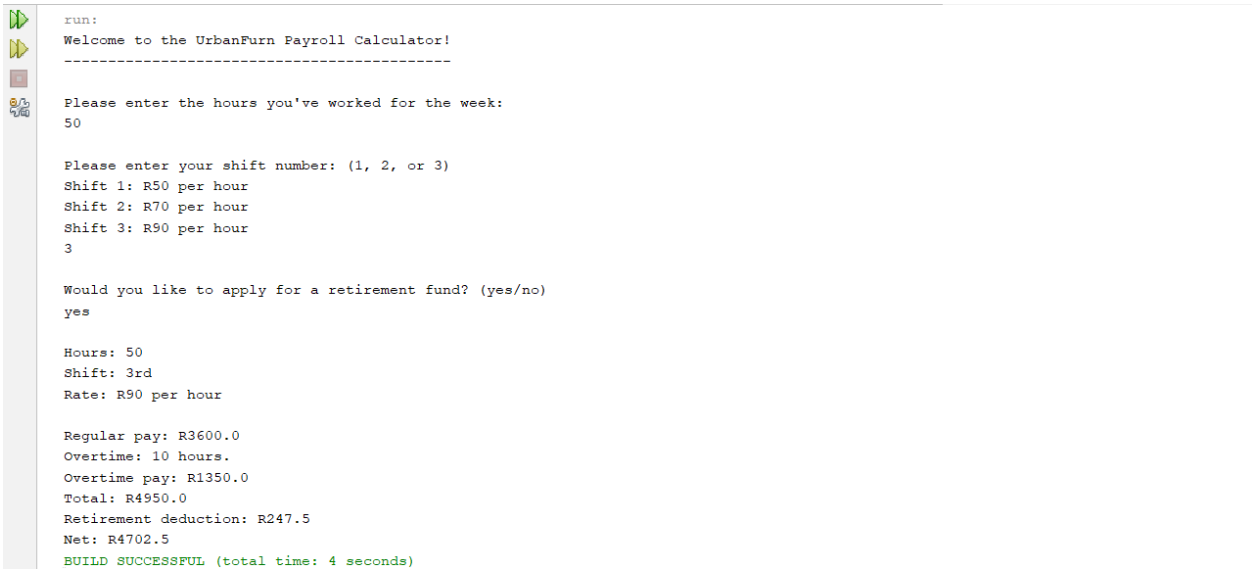
```
run:
Welcome to the UrbanFurn Payroll Calculator!
---------------------------------------------

Please enter the hours you've worked for the week:
40

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
3

Would you like to apply for a retirement fund? (yes/no)
yes

Hours: 40
Shift: 3rd
Rate: R90 per hour

Regular Pay: R3600.0
Retirement deduction: R180.0
Net: R3420.0
BUILD SUCCESSFUL (total time: 4 seconds)
```

Shift 3: Regular Hours without Retirement



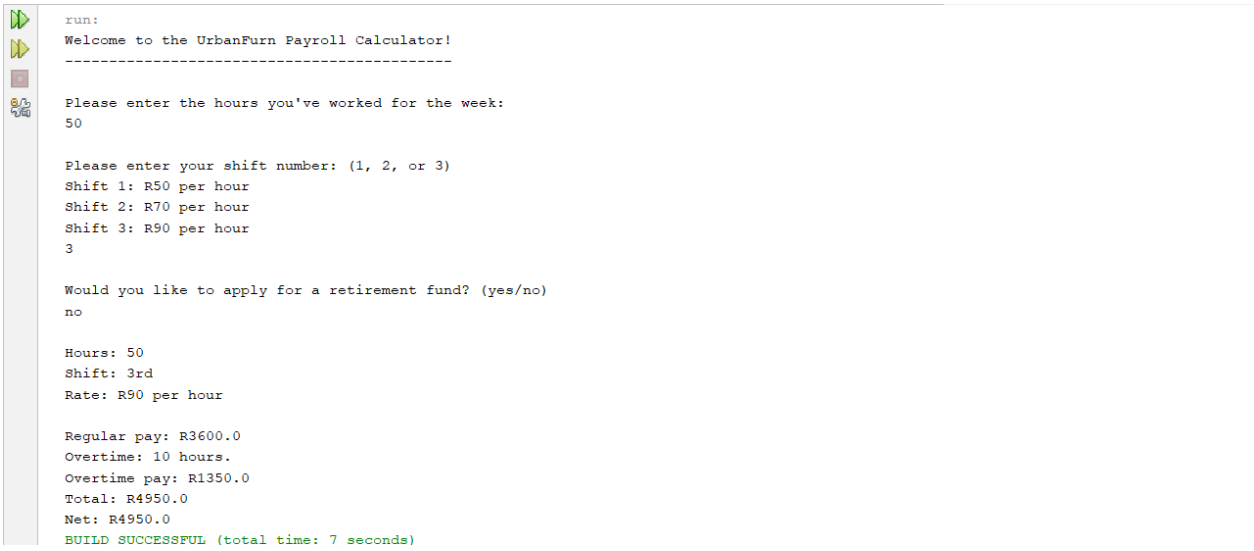
```
run:
Welcome to the UrbanFurn Payroll Calculator!
---------------------------------------------

Please enter the hours you've worked for the week:
40

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
3

Would you like to apply for a retirement fund? (yes/no)
no

Hours: 40
Shift: 3rd
Rate: R90 per hour

Regular Pay: R3600.0
Net: R3600.0
BUILD SUCCESSFUL (total time: 4 seconds)
```

Shift 3: Overtime with Retirement



```
run:
Welcome to the UrbanFurn Payroll Calculator!
--------------------------------------------

Please enter the hours you've worked for the week:
50

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
3

Would you like to apply for a retirement fund? (yes/no)
yes

Hours: 50
Shift: 3rd
Rate: R90 per hour

Regular pay: R3600.0
Overtime: 10 hours.
Overtime pay: R1350.0
Total: R4950.0
Retirement deduction: R247.5
Net: R4702.5
BUILD SUCCESSFUL (total time: 4 seconds)
```

Shift 3: Overtime without Retirement



```
run:
Welcome to the UrbanFurn Payroll Calculator!
--------------------------------------------

Please enter the hours you've worked for the week:
50

Please enter your shift number: (1, 2, or 3)
Shift 1: R50 per hour
Shift 2: R70 per hour
Shift 3: R90 per hour
3

Would you like to apply for a retirement fund? (yes/no)
no

Hours: 50
Shift: 3rd
Rate: R90 per hour

Regular pay: R3600.0
Overtime: 10 hours.
Overtime pay: R1350.0
Total: R4950.0
Net: R4950.0
BUILD SUCCESSFUL (total time: 7 seconds)
```

b) User Manual

Below is a clear and concise user manual and installation guide describing the steps to use the program. These manuals can be used by the company or the employees within the company.

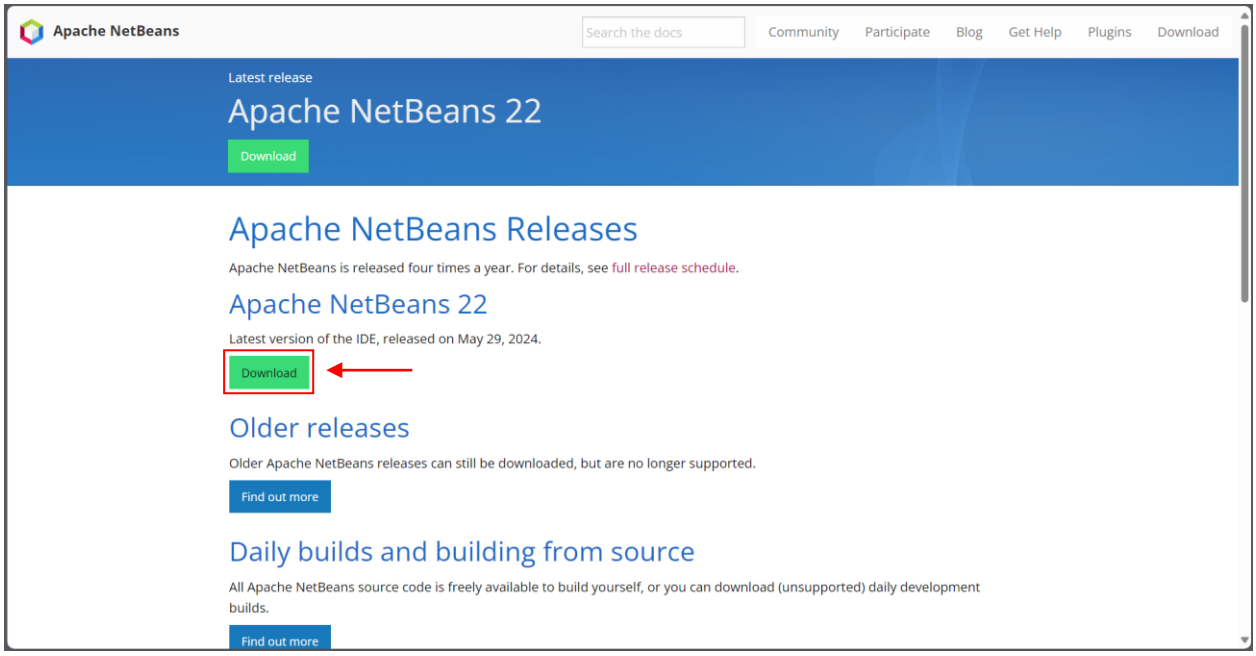
Installation Guide:

Step 1:

Download the Apache NetBeans IDE from the following link:
https://netbeans.apache.org/front/main/download/

Step 2:

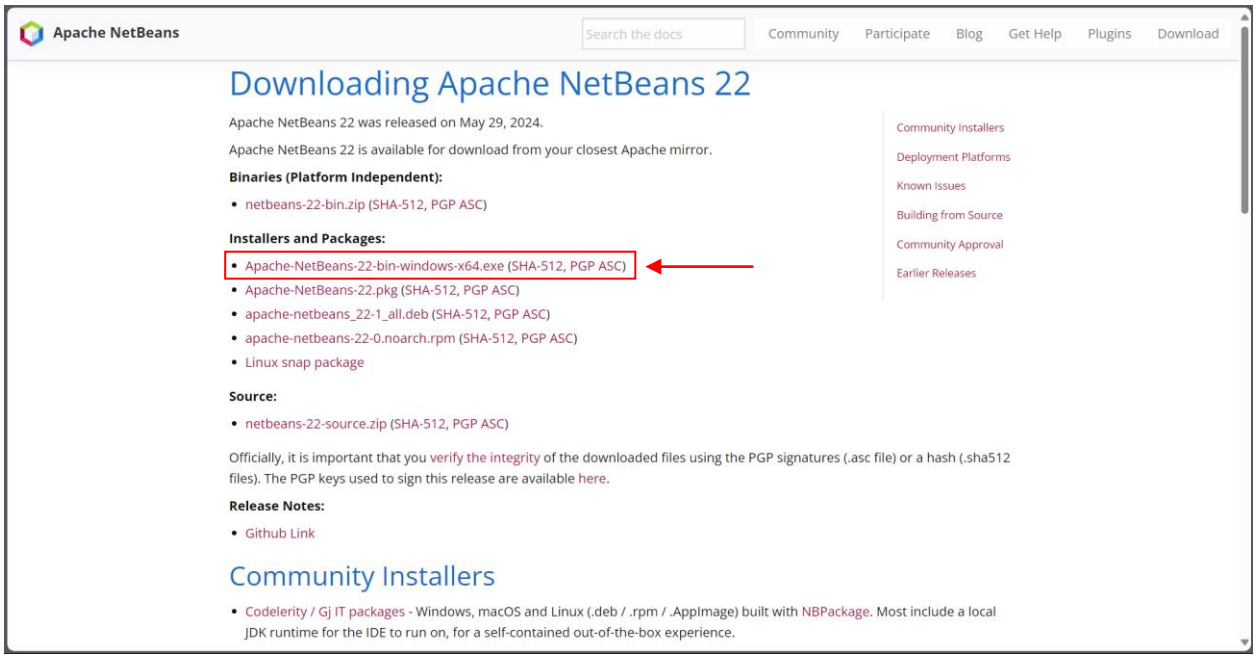
You will be directed to the following page. Click the green button labelled "Download".



Please note the date of the Apache NetBeans release. As of the 17th of July 2024, this version of NetBeans is the latest release. Once the IDE has been downloaded, it is not necessary to redownload the latest releases – they can simply be updated straight from the IDE.

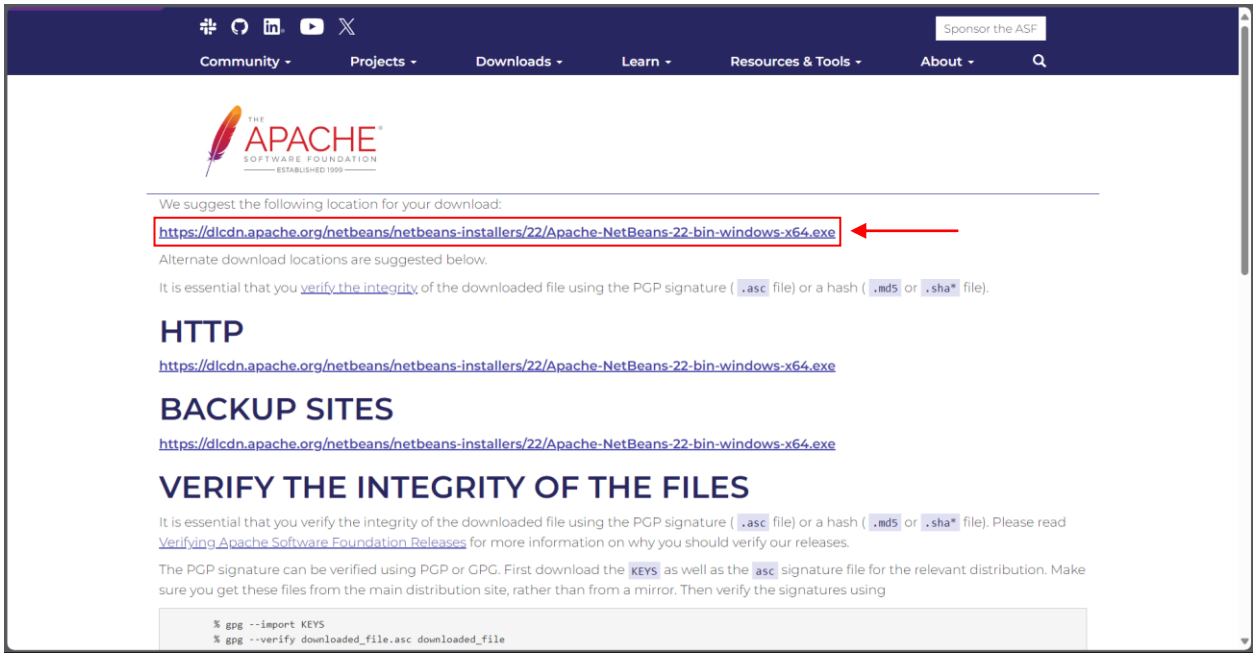
Step 3:

You will be directed to the page displayed below. Click on the first link under “Installers”.



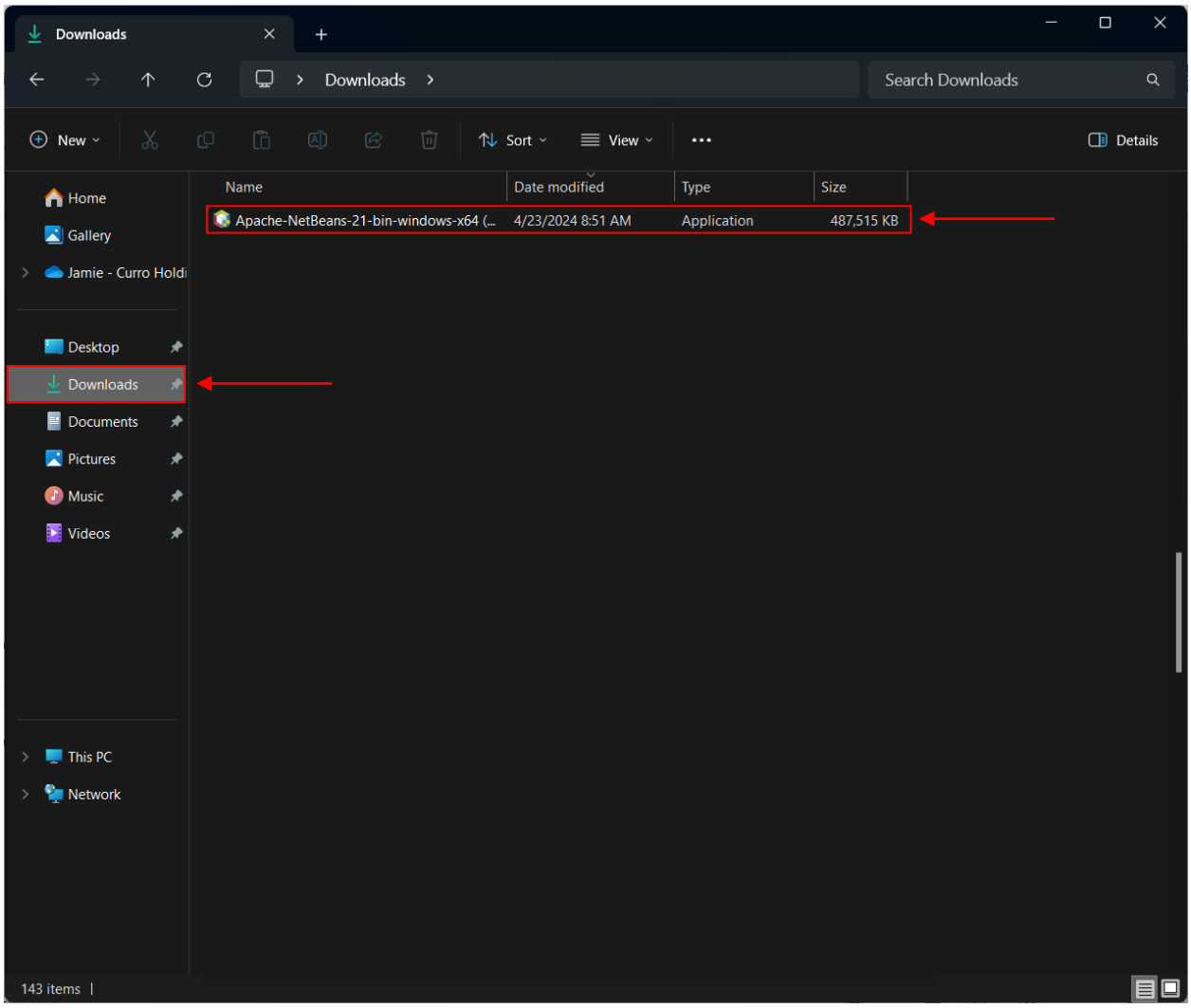
Step 4:

The following page will open. Click on the first link.



Step 5:

The download will be available in the location in which you saved it. This location will most likely be your “Downloads” folder in your files explorer.

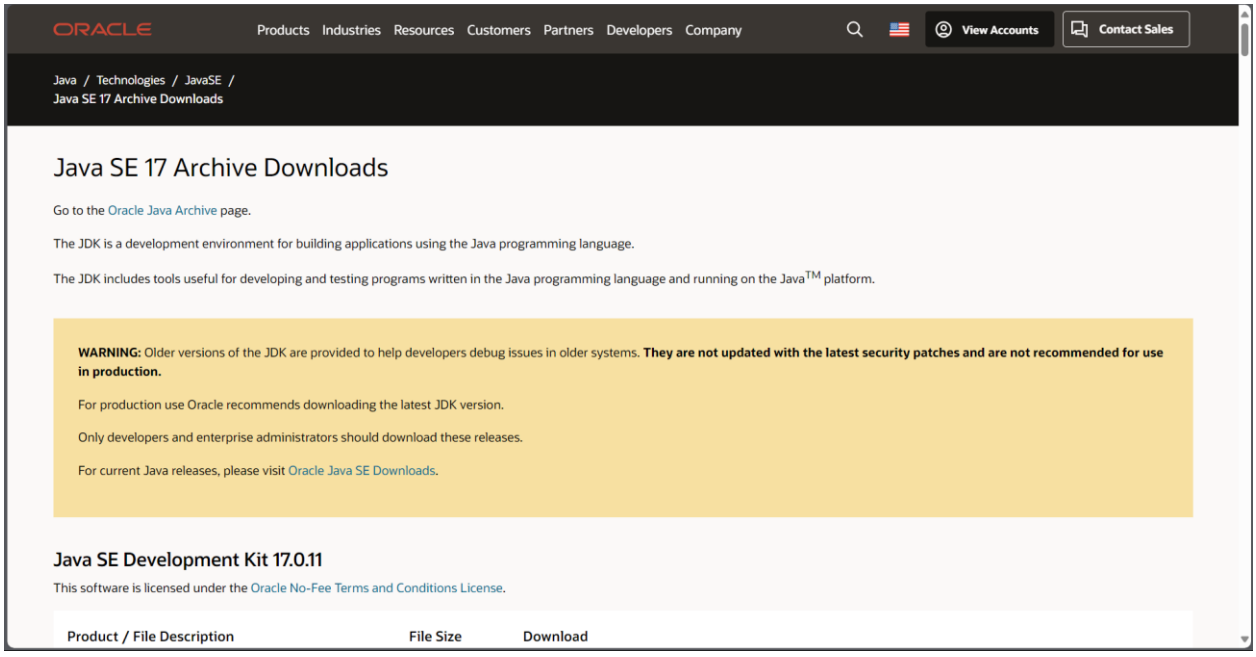


Step 6:

Before opening your Apache Netbeans IDE, it is recommended that you first download the Java extension. The extension can be downloaded from the following link:
https://www.oracle.com/java/technologies/javase/jdk17-archive-downloads.html

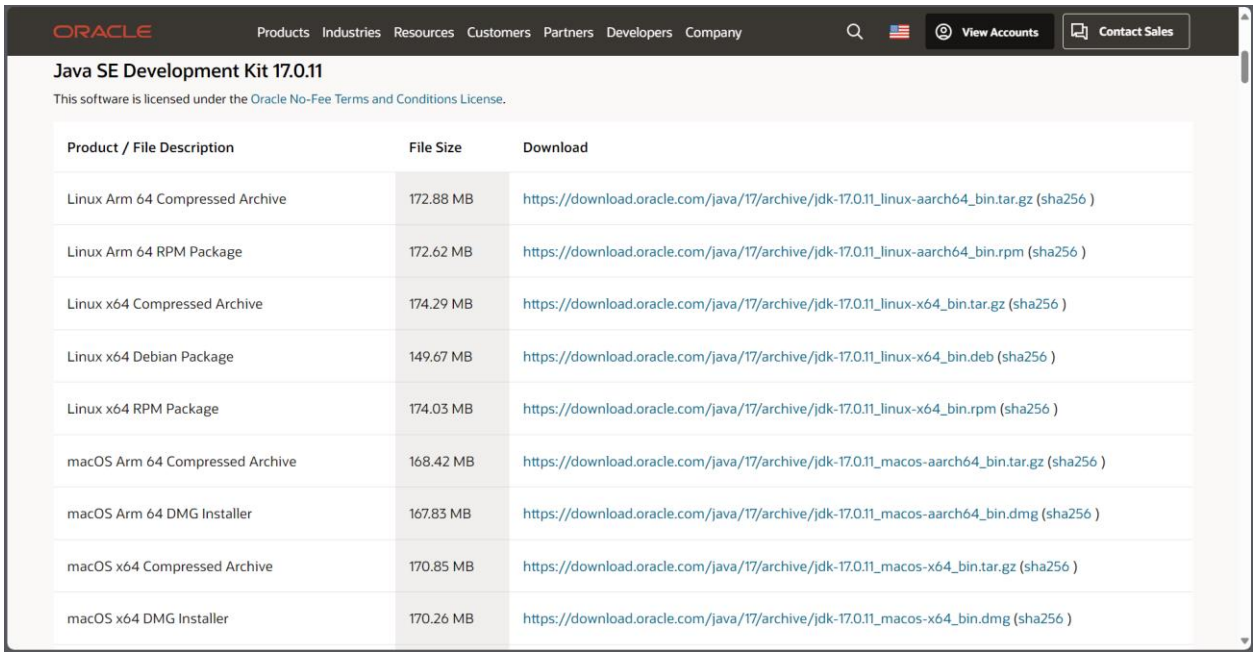
Step 7:

The following page will display:



Step 8:

Use your mouse or mousepad to scroll down. There will be a list of downloadable links to install the JDK.



Please note the JDK release version. As of the 17th of July 2024, Java SE Development Kit 17.0.11 is the latest version.

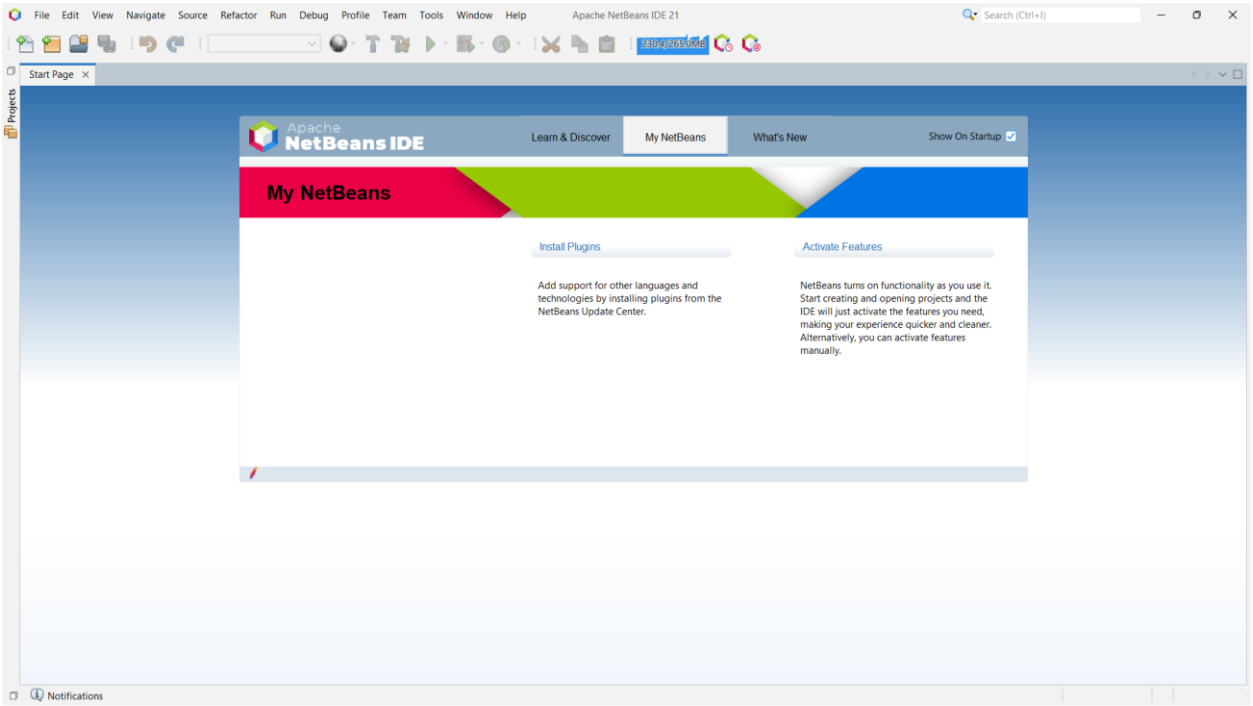
Step 9:

Scroll down until you find the Windows download. For your convenience, click to download the second link. This is so that you download the JDK directly, without having to unzip a compressed file.

User Manual:

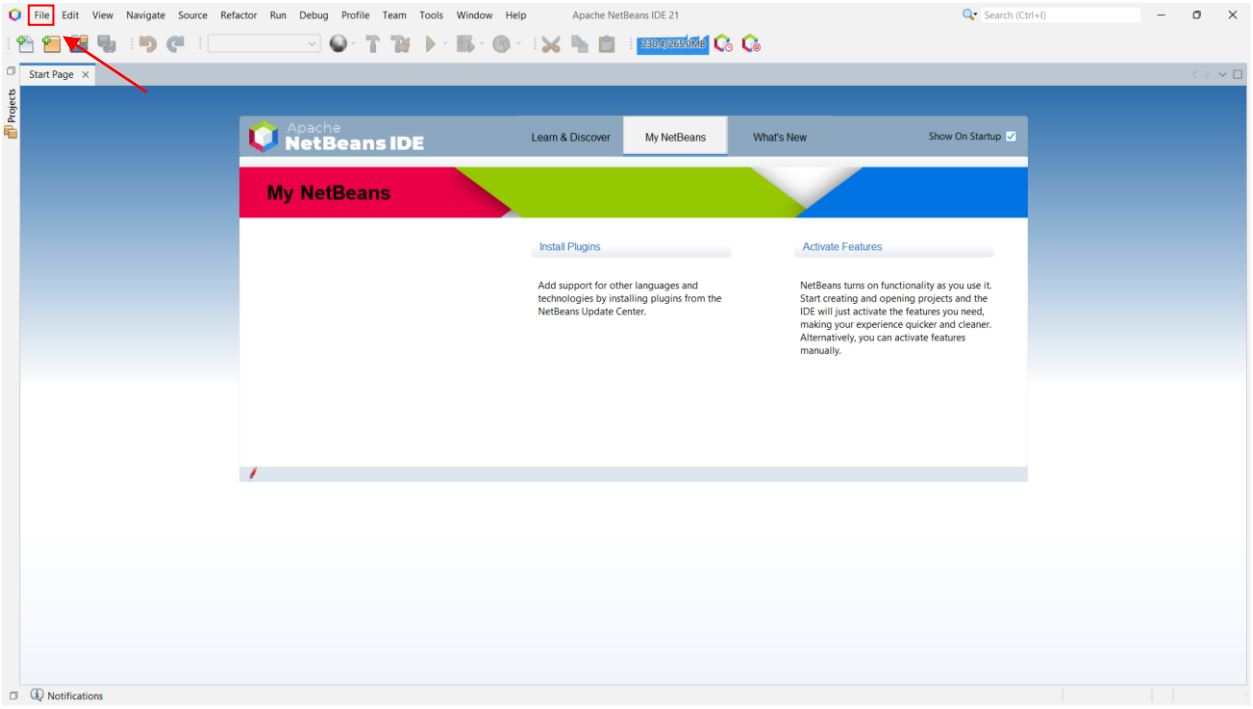
Step 1:

Now that you have successfully installed the Apache NetBeans IDE and JDK, the payroll calculator program can be put to use. The first step is to open the NetBeans applications.



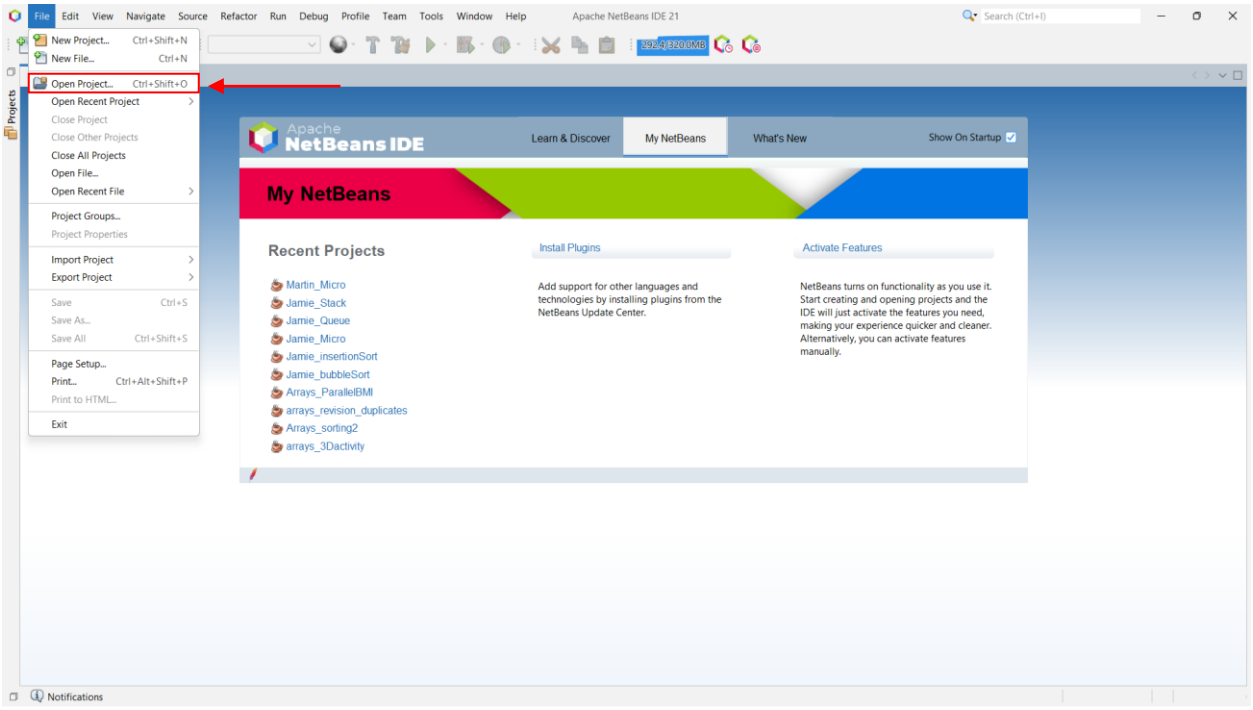
Step 2:

Hover your cursor to the top left of the screen. There is a small button labelled “File”. Click on this button.



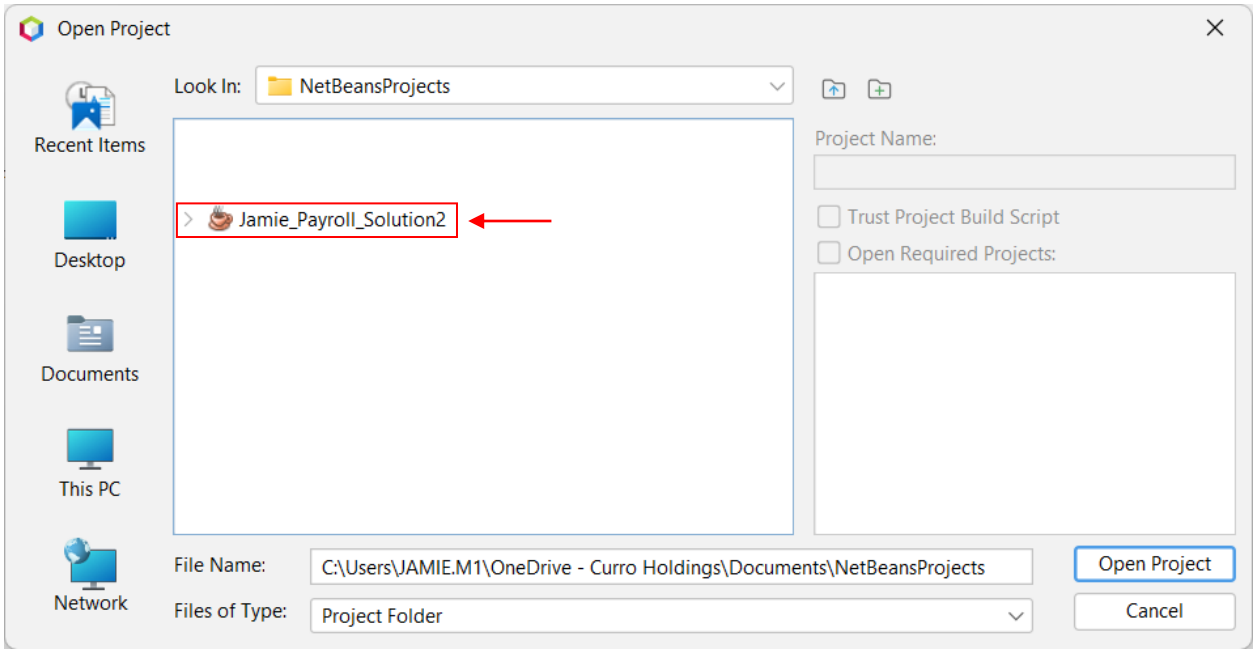
Step 3:

A drop-down will display. Click on the “Open Project” button.



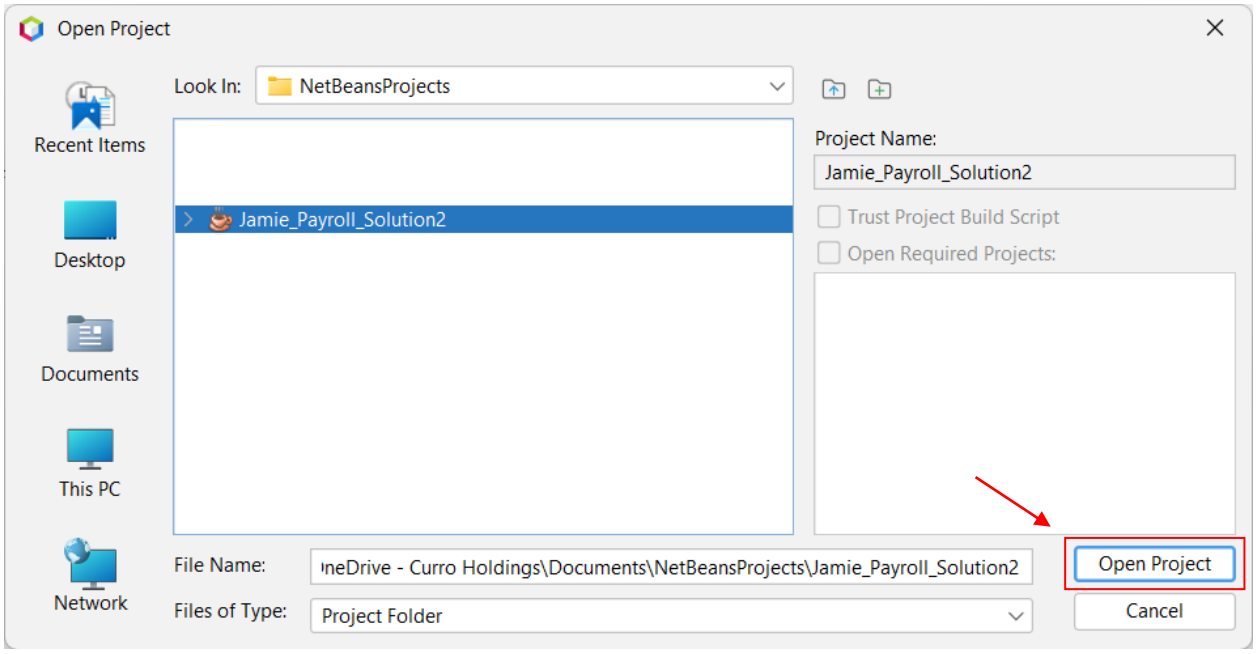
Step 4:

Open the file in the location in which it was saved.



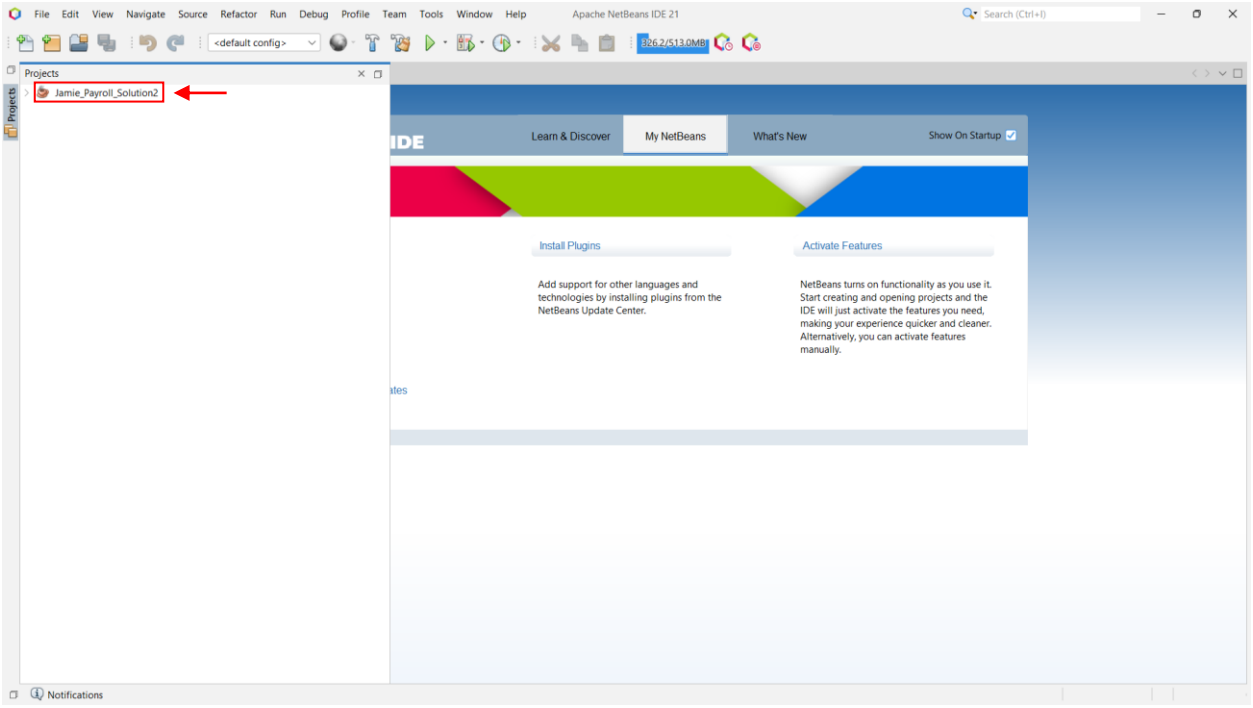
Step 5:

Press the “Open Project” button.



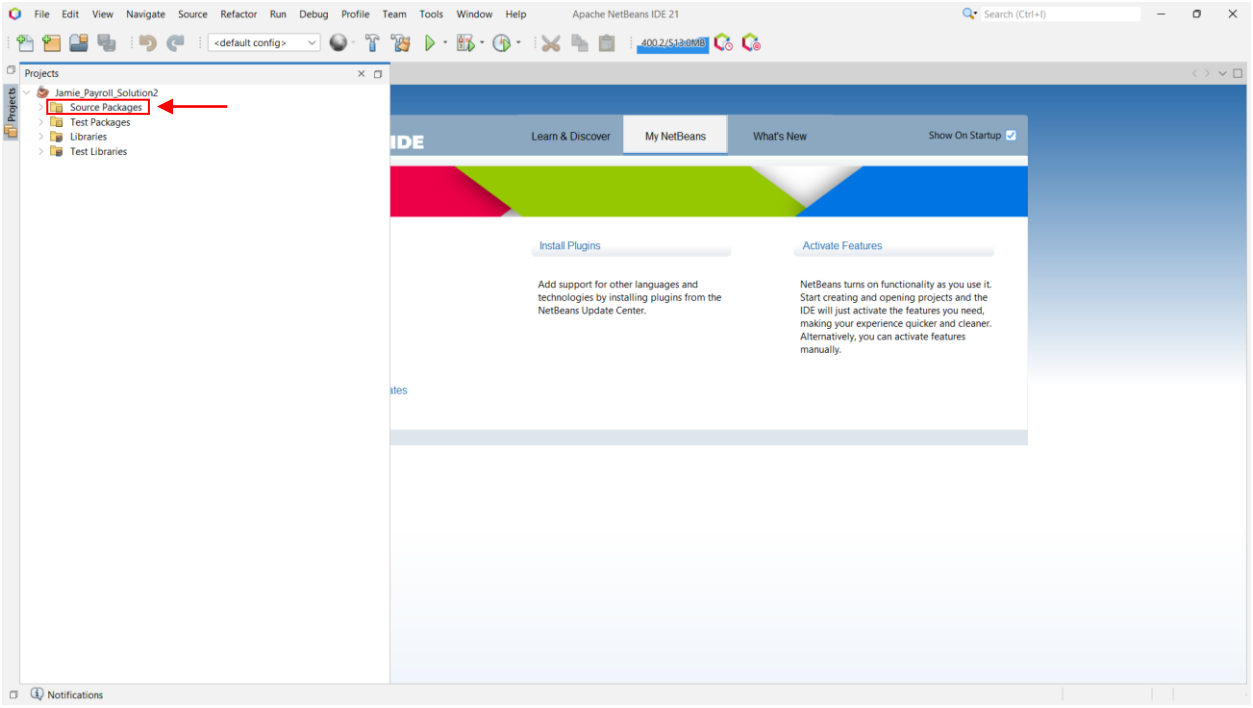
Step 6:

The Projects tab will open with the project hosting the program inside it. Double-click on the folder with the coffee icon beside the name.



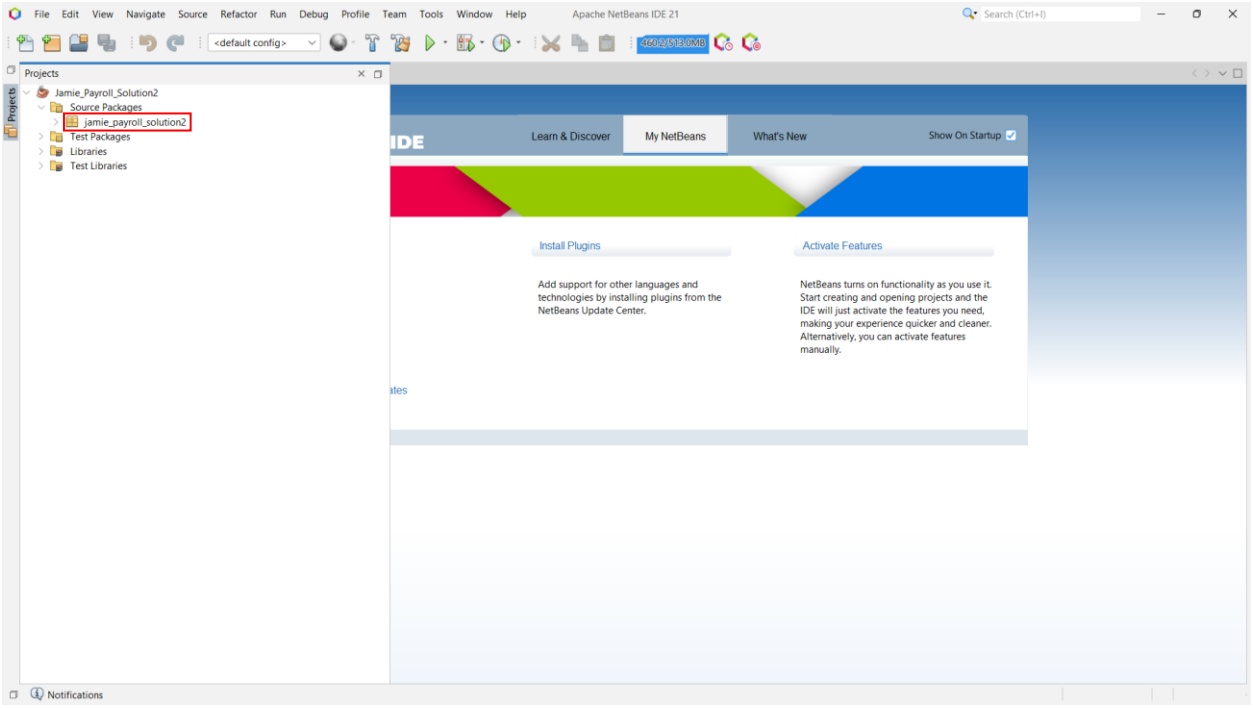
Step 7:

The folder will open with a list of files beneath it. Double-click on the button labelled “Source Packages”.



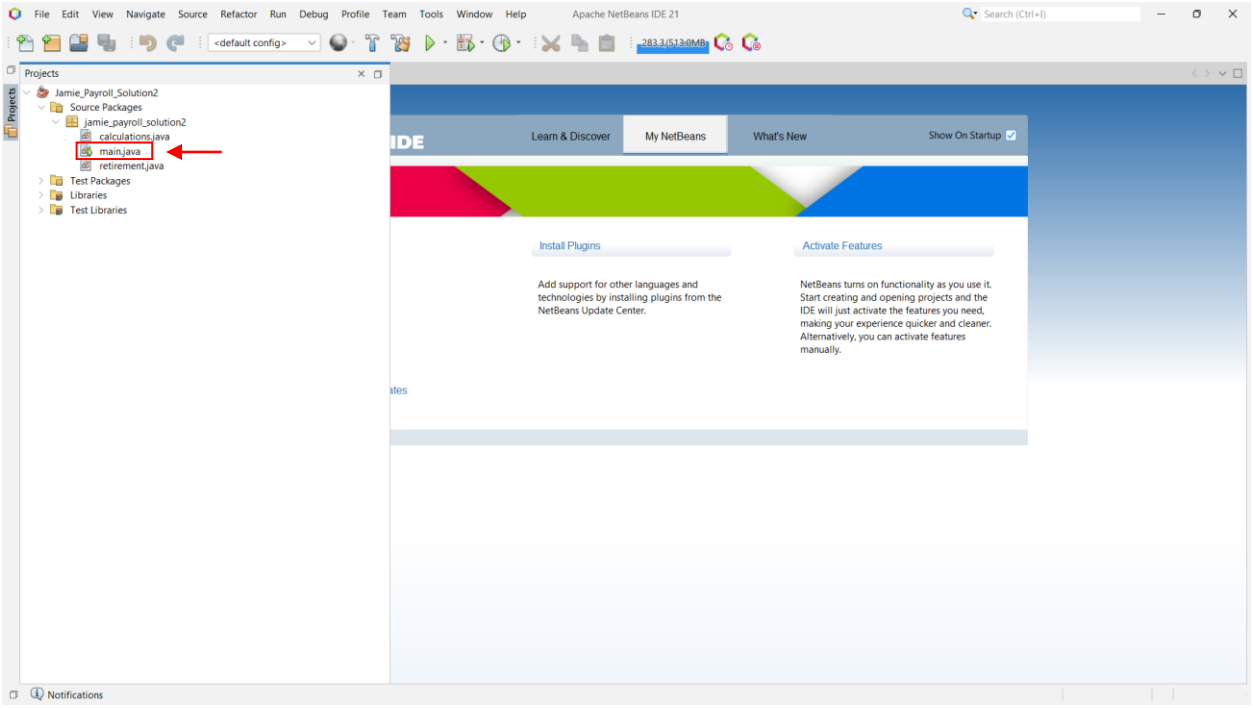
Step 8:

There will be only one source package underneath the file. This is the source package with the program. Double-click on the package to open it.



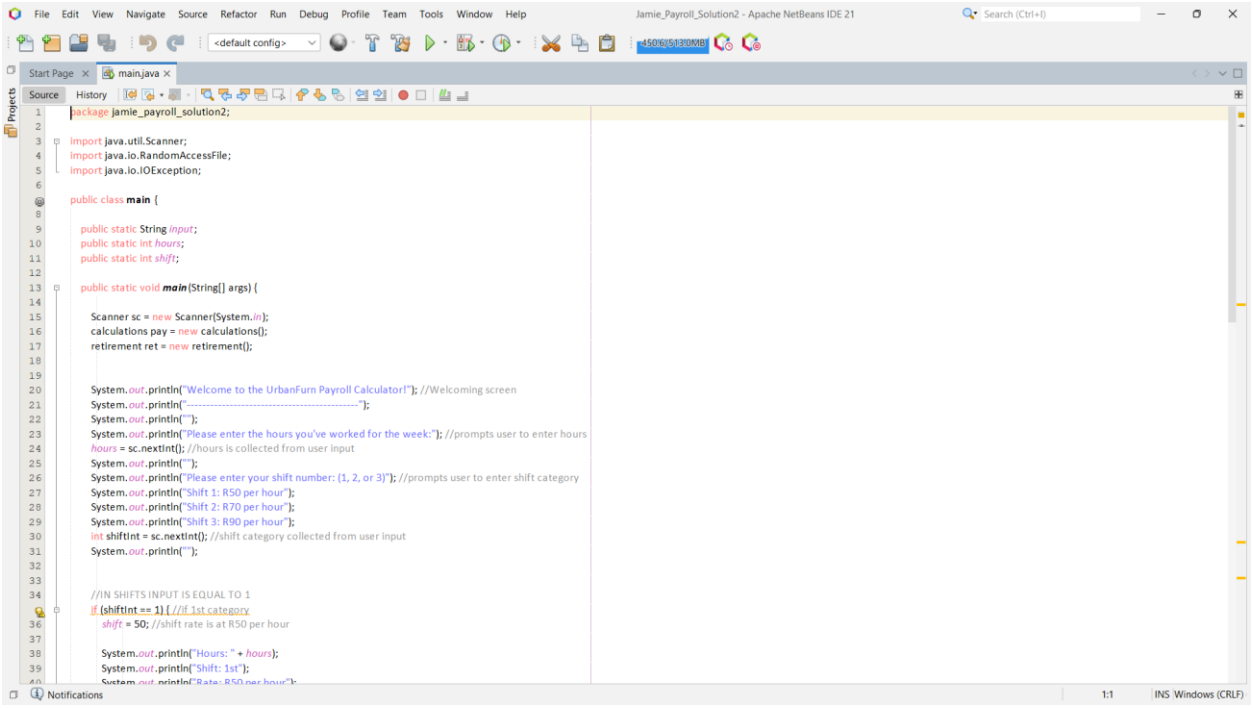
Step 9:

A list of files will open underneath. These files are the classes used to create the program. Simply double-click on the class labelled “main”.



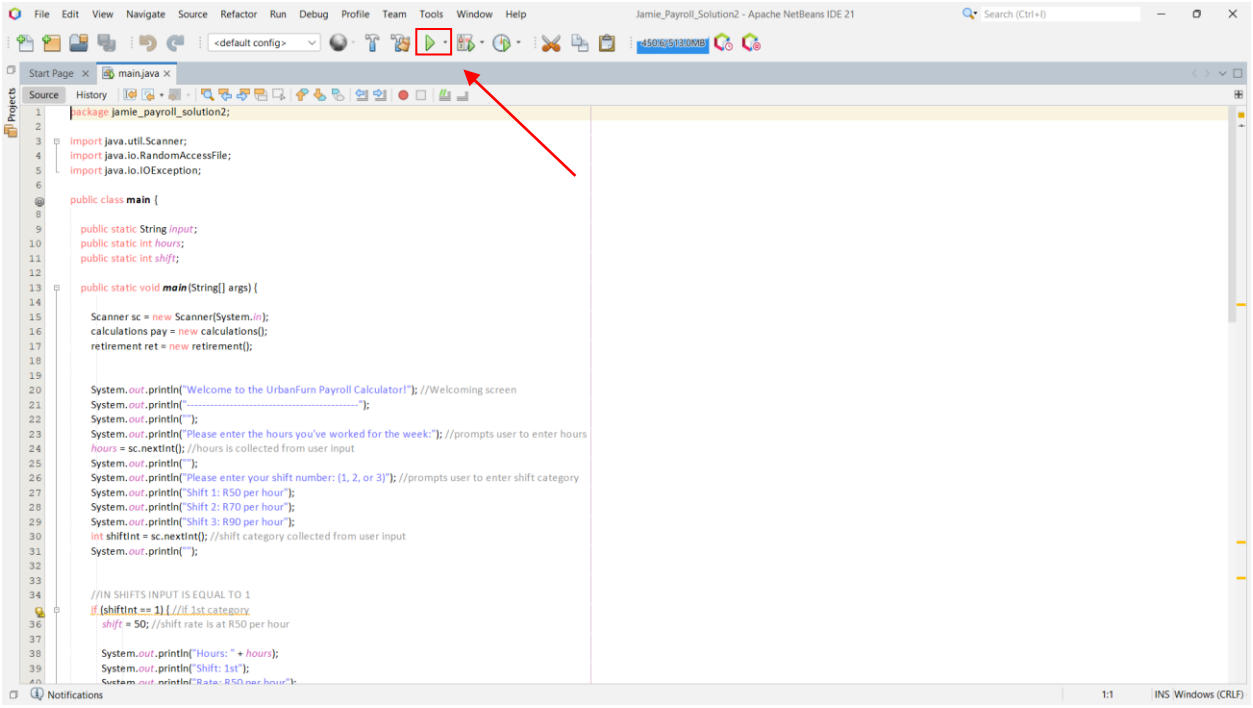
Step 10:

The following page will open. This page contains some portions of code for the program. **Please ensure that nothing on this page is edited.**



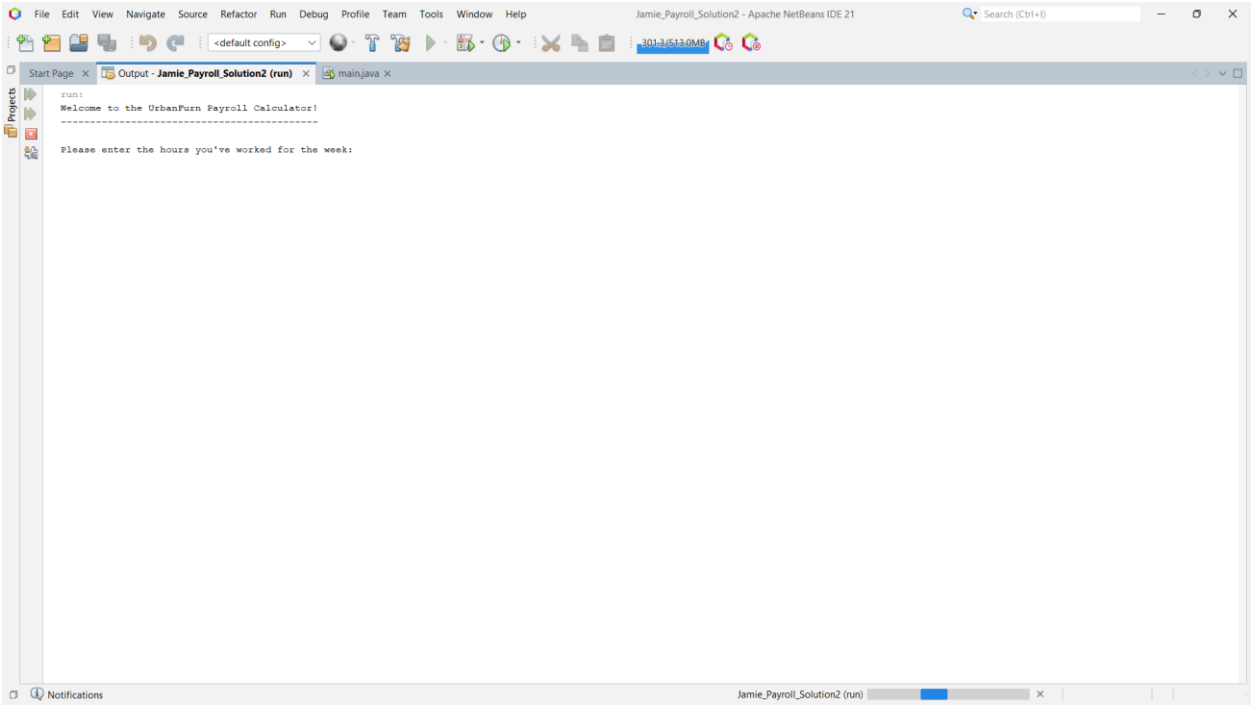
Step 11:

Click on the green button situated on the upper middle portion of the screen to start the program.



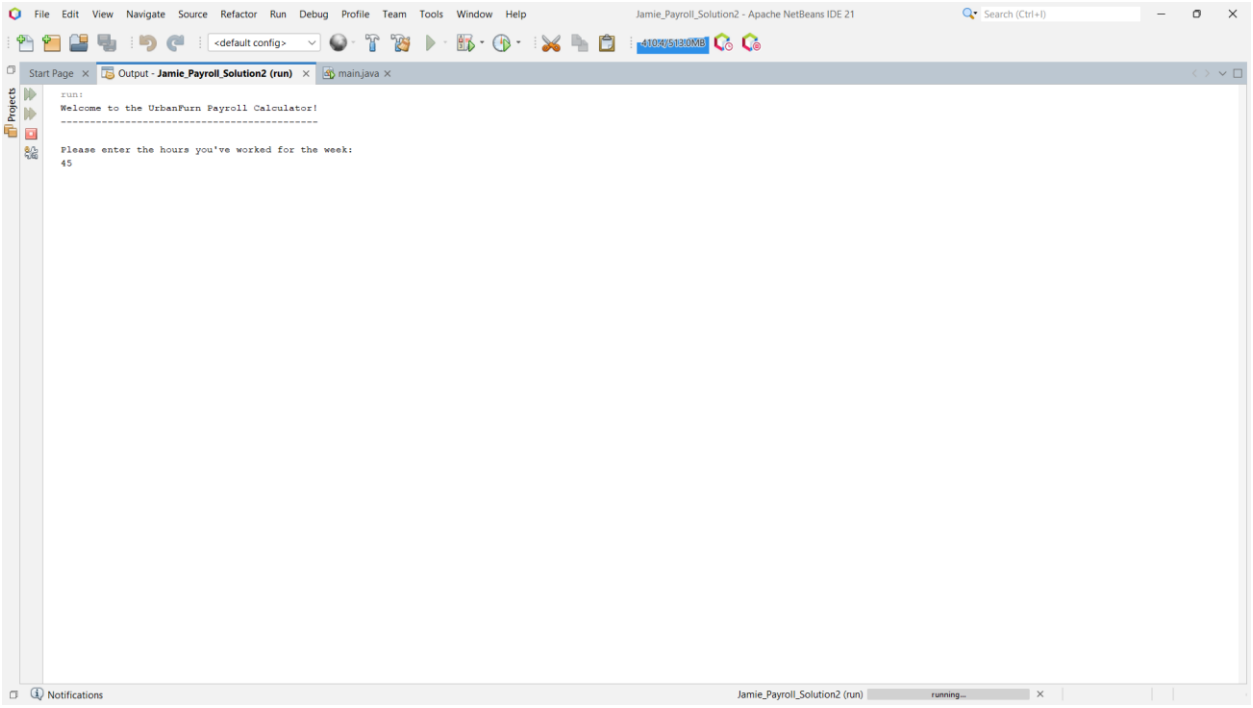
Step 12:

The following console will appear. This is where employees should input the necessary information to calculate their payrolls.



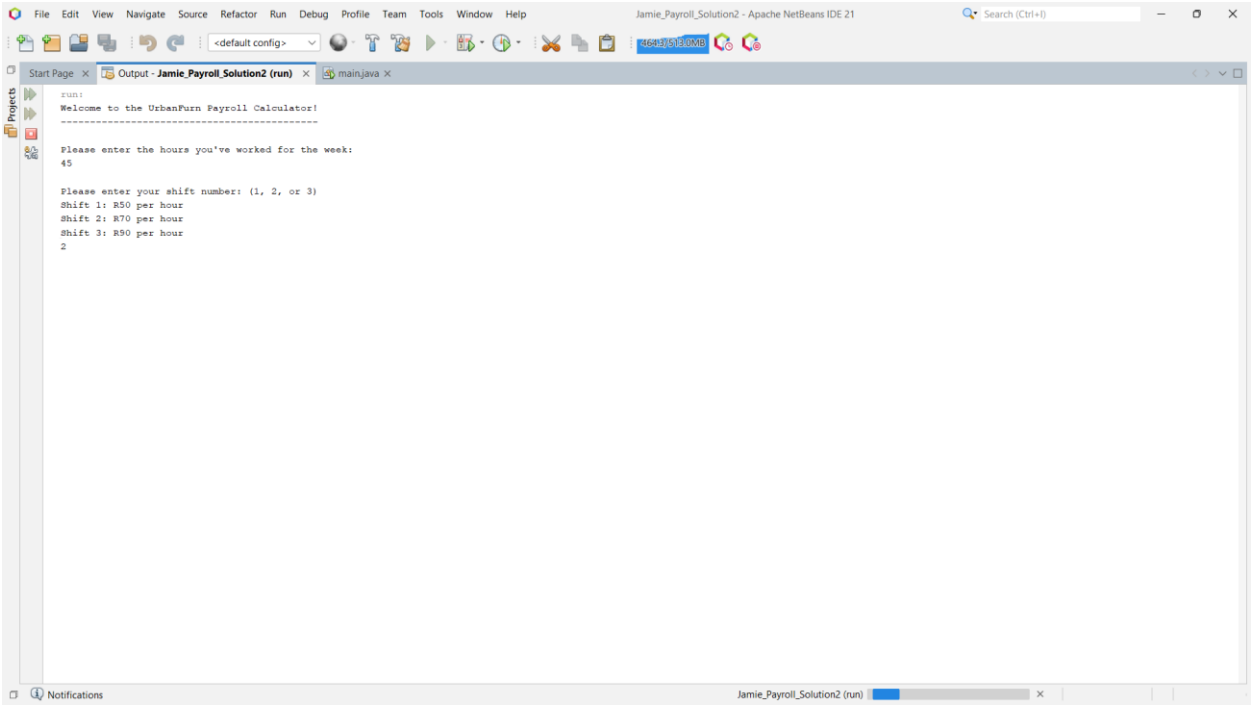
Step 13:

Input the number of hours worked for the week. An example value of 45 hours is inputted into the console.



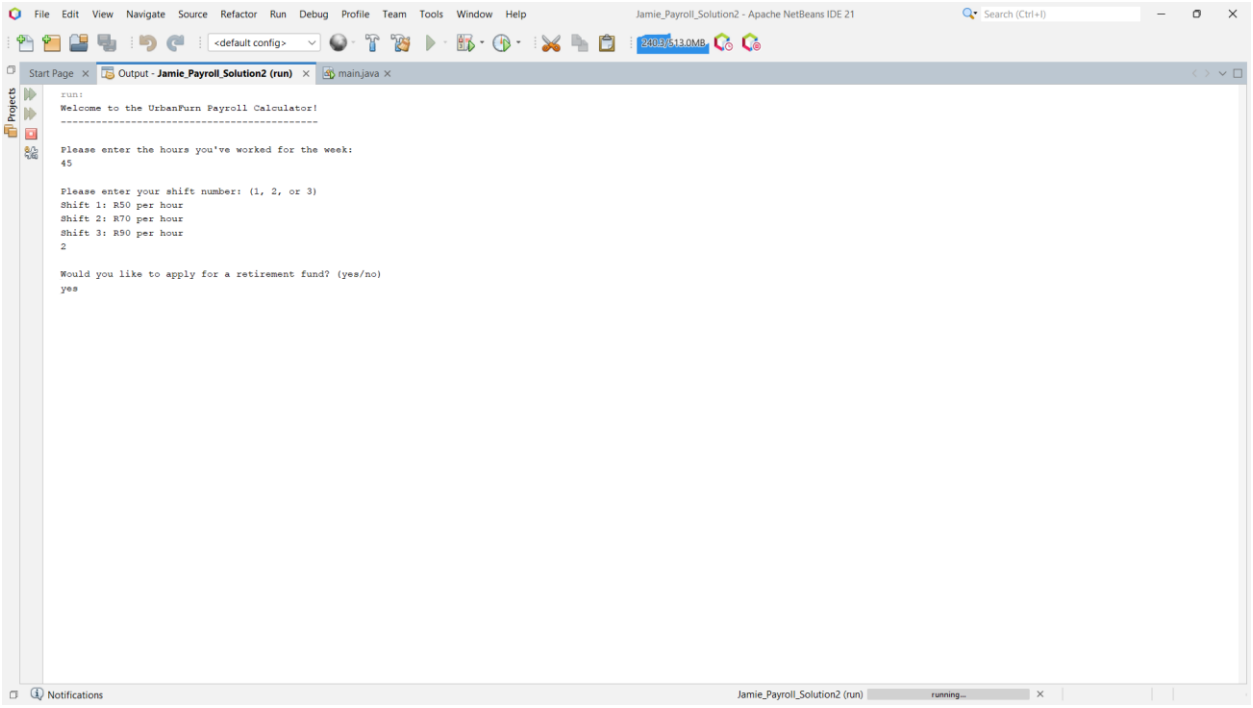
Step 14:

Input the shift number. **Enter only the corresponding shift number into the console** – it will automatically assign the shift rate. An example value of 2 was entered into the console, amounting to R70 per hour.



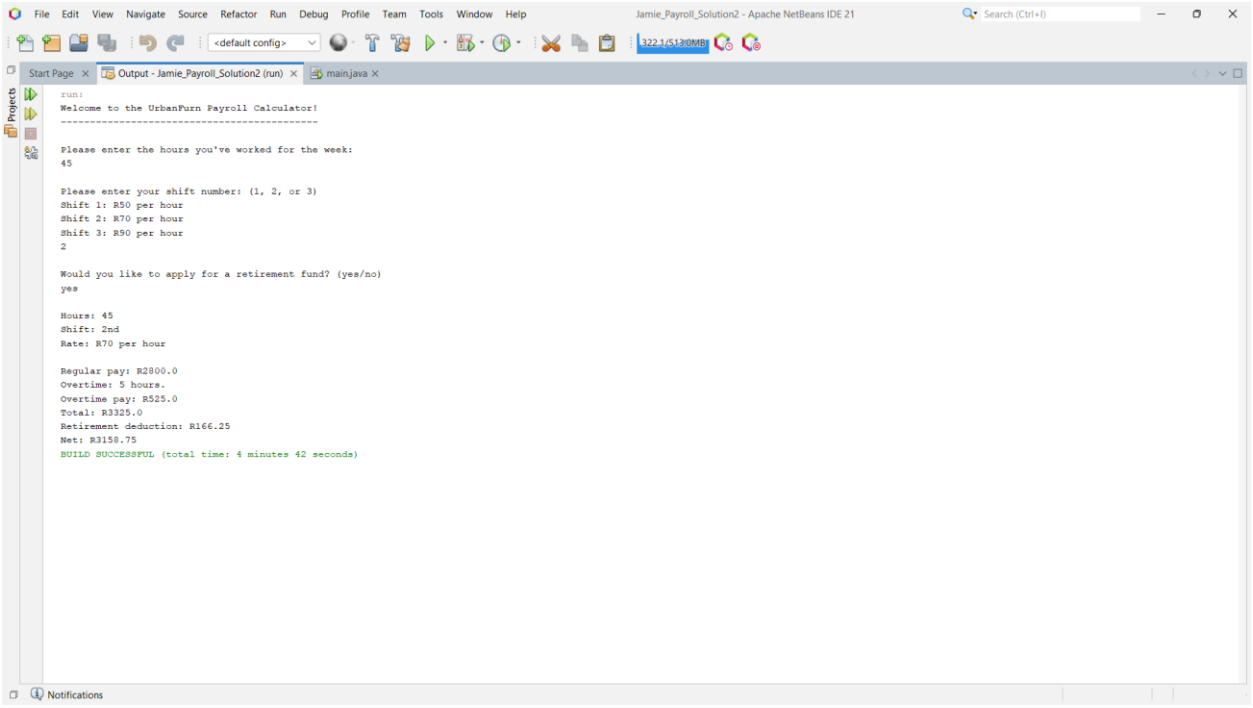
Step 15:

You will then be offered a retirement plan. This prompt only appears if you select the second or third shift. For the purpose of this user manual, the offer is accepted.



Step 16:

Once the user has selected the enter-button, a breakdown of the user's payroll will display accordingly. This includes the hours, the shift's pay rate, the regular salary, the overtime salary, and any retirement deductions, should there be any. Lastly, the net income will display.



c) Installation Plan

Timelines

The creation of the program has taken four days to complete. The first day was allocated to the coding of the program, and three days were allocated to the documentation. The program has completed its development process and will be taken to UrbanFurn for integration into their systems.

Installation of the necessary resources will be done on the third day.

To install the program into the company's system, there will be a physical meetup with the company. I will then transfer the program from the device on which it was created, onto the devices and systems of the company. This will occur on the fourth day of development.

Resources

There aren't many resources that are required for this program. UrbanFurn is, however, to ensure that they have at least one working computer. This computer should preferably be a Windows 11 device with the necessary specifications.

The processor (Computer Processing Unit) should have at least an Intel Core i5 or higher, a recommended memory of 8GB of RAM, and a solid-state drive for faster performance in terms of storage. The recommended capacity is 256GB.

The graphics card should have an integrated CPU and the device should have a display of approximately 13-14 inches, which is sufficient for easy usage. The resolution of the device can be about 1920 x 1080, which is full HD. This is not required but it would be beneficial.

The battery life of the machine should have at least 8 hours for all day usage, and once again, it is recommended that the operating system be Windows 11.

In terms of its connectivity, there should be the sufficient standard ports as well as Wi-Fi 6 and Bluetooth 5.0 for internet purposes.

There will be an installation of Apache NetBeans onto their systems, as well as the JDK to run Java.

Contingency Measures

Contingency measures have also been created to minimize any losses and damages caused by any unforeseen negative events.

One aspect that the company should be wary of is the accidental installation of viruses should there be any malicious content within resources that need to be

downloaded from the internet. This program will not be affected, but the company's systems may be.

To combat this, an accurate installation guide will be given to the company to ensure that they download content from the correct sites and from reputable sources.