

JAVA FUNDAMENTALS COURSE

EXERCISE

VARIABLES HANDLING

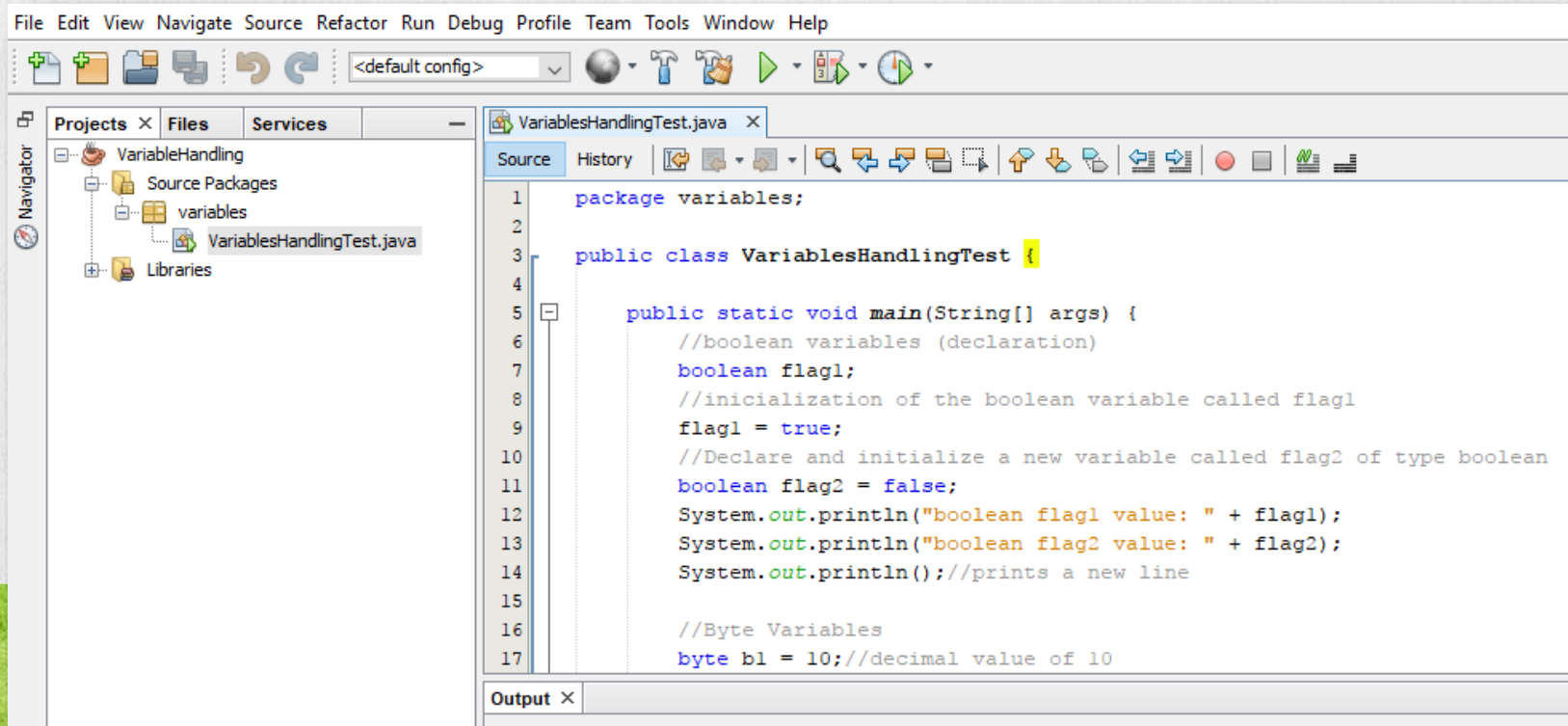


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EXERCISE OBJETIVE

Create a program to practice creating variables in Java. In the end we should observe the following:



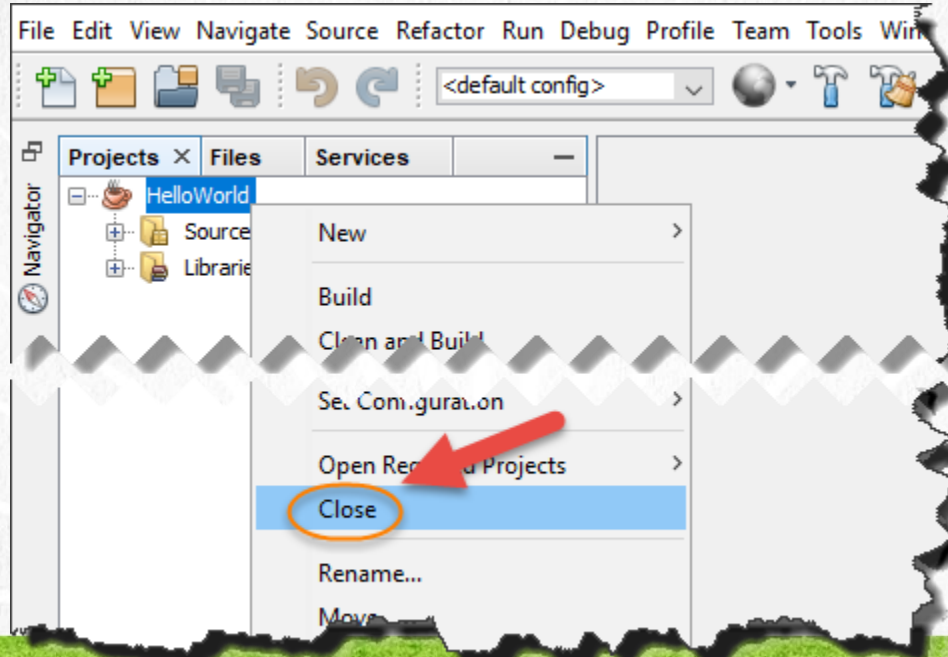
The screenshot shows an IDE window with the following components:

- Menu Bar:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help.
- Toolbar:** Includes icons for file operations (new, open, save, delete), navigation (back, forward), and execution (run, debug).
- Navigator:** Shows a project structure with a package named 'variables' containing the file 'VariablesHandlingTest.java'.
- Source Editor:** Displays the code for 'VariablesHandlingTest.java'.
- Output Console:** Located at the bottom, currently empty.

```
1 package variables;
2
3 public class VariablesHandlingTest {
4
5     public static void main(String[] args) {
6         //boolean variables (declaration)
7         boolean flag1;
8         //inicialization of the boolean variable called flag1
9         flag1 = true;
10        //Declare and initialize a new variable called flag2 of type boolean
11        boolean flag2 = false;
12        System.out.println("boolean flag1 value: " + flag1);
13        System.out.println("boolean flag2 value: " + flag2);
14        System.out.println();//prints a new line
15
16        //Byte Variables
17        byte b1 = 10;//decimal value of 10
```

CLOSE ANY OTHER PROJECT

We close any project that is open:

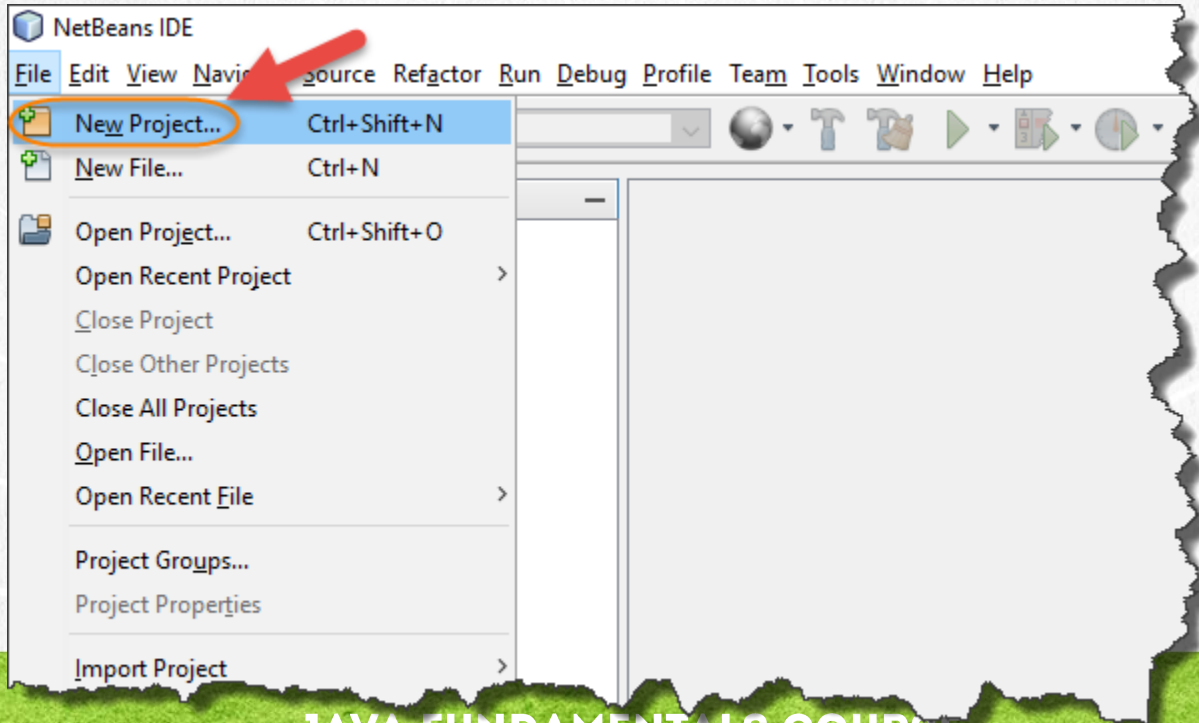


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1. CREATE A NEW PROJECT

We create a new project VariableHandling:

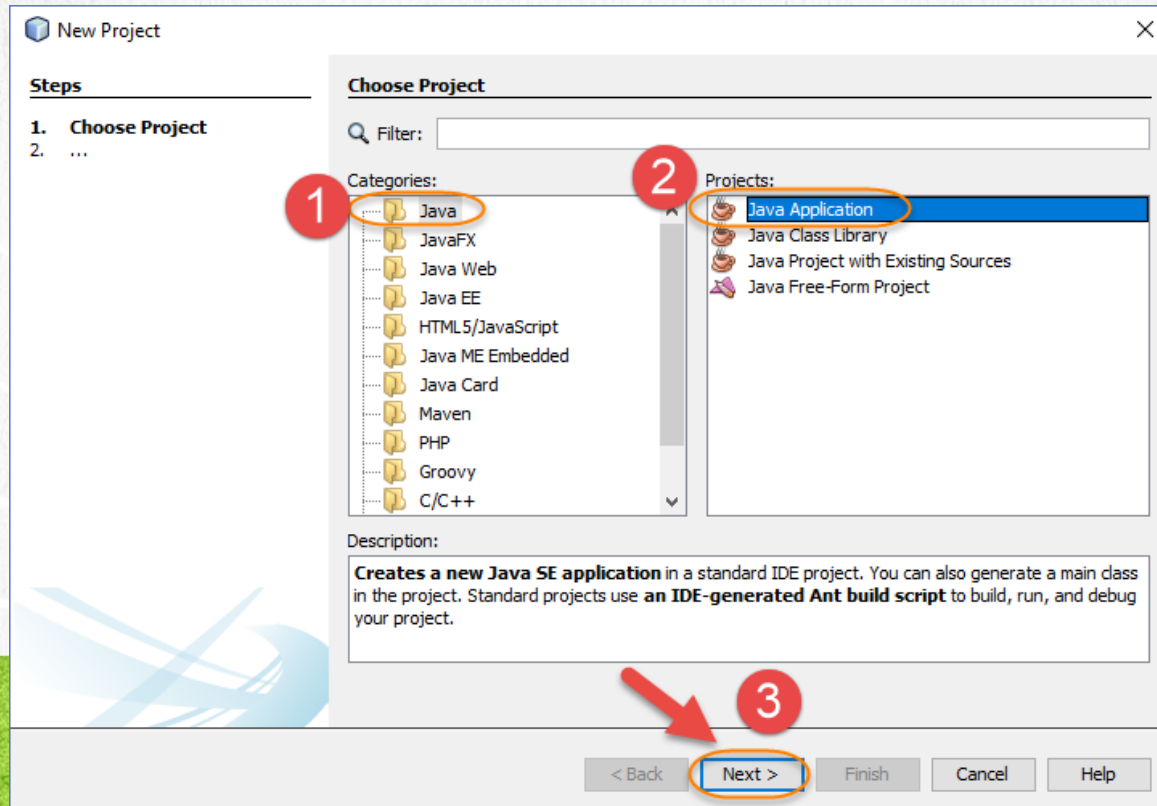


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1. CREATE A NEW PROJECT

We select the Java category and a Java Application:



1. CREATE A NEW PROJECT (CONT)

We assign a name and a path for our new project as show below:

New Java Application

Steps

1. Choose Project
2. **Name and Location**

Name and Location

Project Name: VariableHandling

Project Location: C:\Courses\JavaFundamentals\Lesson02 **Browse...**

Project Folder: C:\Courses\JavaFundamentals\Lesson02\VariableHandling

☐ Use Dedicated Folder for Storing Libraries

Libraries Folder: **Browse...**

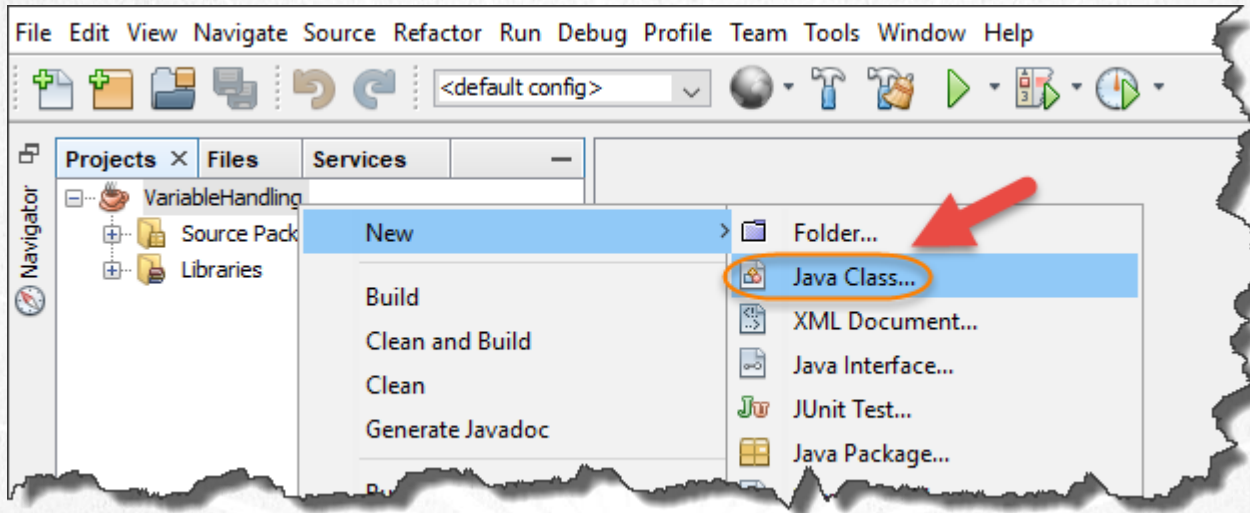
Different users and projects can share the same compilation libraries (see Help for details).

☐ Create Main Class variablehandling.VariableHandling

Finish

2. CREATE A JAVA CLASS

We will create a new Java class:



2. CREATE A JAVA CLASS (CONT)

We assign the name `VariablesHandlingTest` to our new class, and assign to a new package named `variables`. Remember that a package is like a folder. We will cover the topic of packages later in the course. Click on finish:

New Java Class

Steps

1. Choose File Type
2. **Name and Location**

Name and Location

Class Name: `VariablesHandlingTest`

Project: `VariableHandling`

Location: `Source Packages`

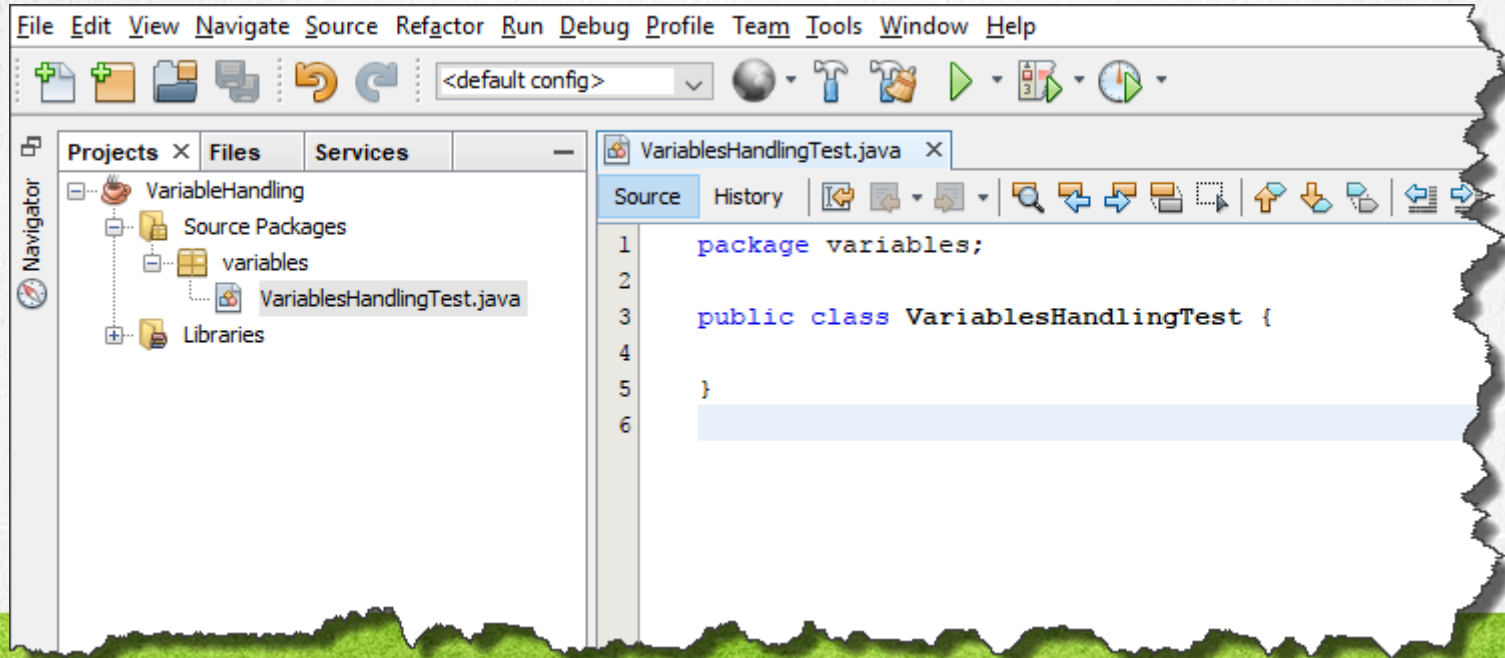
Package: `variables`

Created File: `C:\Courses\JavaFundamentals\Lesson02\VariableHandling\src\variables\VariablesHandlingTest.java`

< Back Next > **Finish** Cancel Help

2. CREATE A JAVA CLASS (CONT)

This is the result of the created class. We are going to modify this class with the following code:



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3. MODIFY THE CODE

[File VariablesHandlingTest.java:](#)

[Click to download](#)

```
package variables;

public class VariablesHandlingTest {

    public static void main(String[] args) {
        //boolean variables (declaration)
        boolean flag1;
        //inicialization of the boolean variable called flag1
        flag1 = true;
        //Declare and initialize a new variable called flag2 of type boolean
        boolean flag2 = false;
        System.out.println("boolean flag1 value: " + flag1);
        System.out.println("boolean flag2 value: " + flag2);
        System.out.println();//prints a new line

        //Byte Variables
        byte b1 = 10;//decimal value of 10
        //Literal en hexadecimal starts with 0x
        byte b2 = 0xa;//0xa is hexadecimal, equals to 10 in decimal
        System.out.println("byte1 value:" + b1);
        System.out.println("byte2 value:" + b2);
        System.out.println("//prints a new line too
```

3. MODIFY THE CODE

[File VariablesHandlingTest.java:](#)

[Click to download](#)

```
//Short Variables
short s1 = 2;
System.out.println("short value:" + s1);
System.out.println(""); //prints a new line

//char Variable, declaration and inicializacion in one line of code
//The first declaration is in UNICODE
//http://www.icursos.net/referencias/TablaUnicode.html
char ch1 = 65, ch2 = 'A';
System.out.println("char1 value:" + ch1); //prints A (unicode value of 65)
System.out.println("char2 value:" + ch2); //prints A
System.out.println("");

//int Variables
int decimal = 100;
int octal = 0144; //An octal value starts with 0
int hexa = 0x64; //An hexadecimal value starts with 0x or 0X
System.out.println("int decimal value:" + decimal); //prints 100
System.out.println("int octal value:" + octal); //prints 100 too
System.out.println("int hexadecimal value:" + hexa); //prints 100 too
System.out.println();
```


3. MODIFY THE CODE

[File VariablesHandlingTest.java:](#)

[Click to download](#)

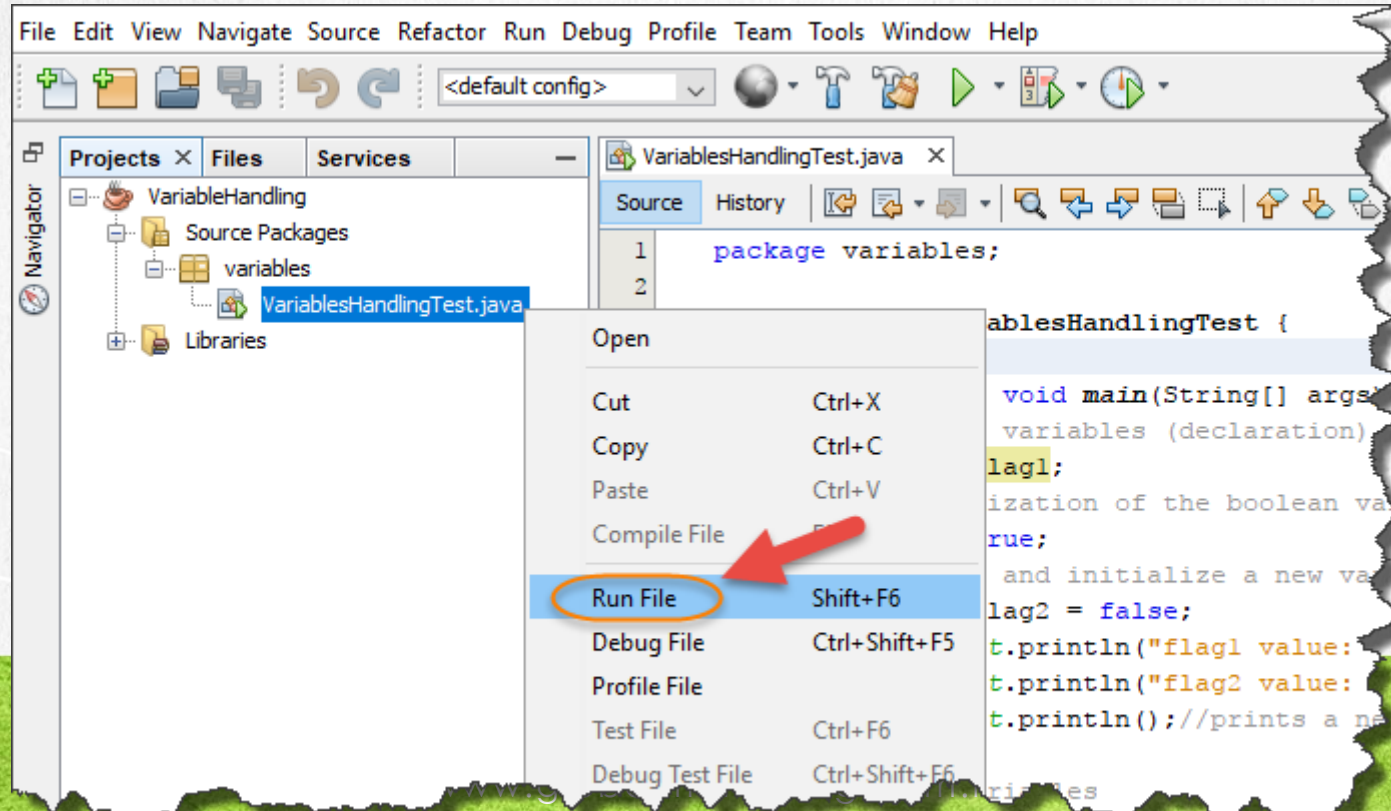
```
//long variables
long long1 = 10; //by default a literal is of type int
long long2 = 20L; //with the suffix l or L the literal is converted to long
System.out.println("long1 value:" + long1);
System.out.println("long2 value:" + long2);
System.out.println();

//Variables float
float f1 = 15; //by default a float literal is of type double
float f2 = 22.3F; //with the suffix f or F the literal is converted to float
System.out.println("float1 value:" + f1);
System.out.println("float2 value:" + f2);
System.out.println();

//double Variables
double d1 = 11.0; //by default a float literal is of type double
double d2 = 30.15D; //with the suffix D, converts a literal to double
System.out.println("double1 value:" + d1);
System.out.println("double2 value:" + d2);
System.out.println();
}
}
```

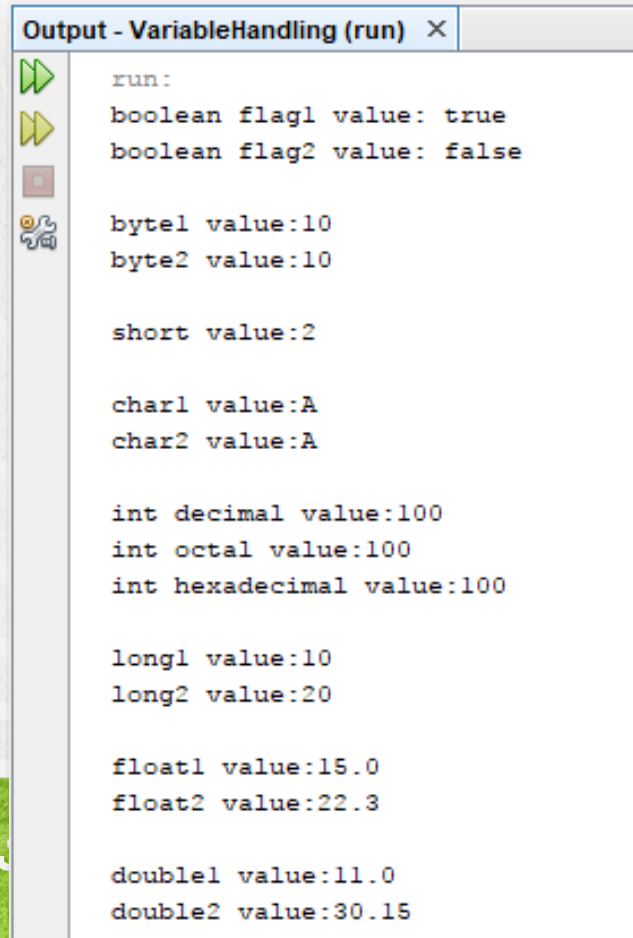
4. EXECUTE THE PROJECT

We execute our project. We give right click -> Run:



4. EXECUTE THE PROJECT (CONT)

The result is:



```
run:
boolean flag1 value: true
boolean flag2 value: false

byte1 value:10
byte2 value:10

short value:2

char1 value:A
char2 value:A

int decimal value:100
int octal value:100
int hexadecimal value:100

long1 value:10
long2 value:20

float1 value:15.0
float2 value:22.3

double1 value:11.0
double2 value:30.15
```


EXTRA TASKS OF THE EXERCISE

- Try creating more variables and verify the result.



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CONCLUSION OF THE EXERCISE

- With this exercise we have put into practice the creation of variables, which are the basis for storing information temporarily of our program.
- For more information on the topic of variables in Java, as well as their data types, see:
- <http://docs.oracle.com/javase/tutorial/java/nutsandbolts/variables.html>
- <http://docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html>

ONLINE COURSE

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