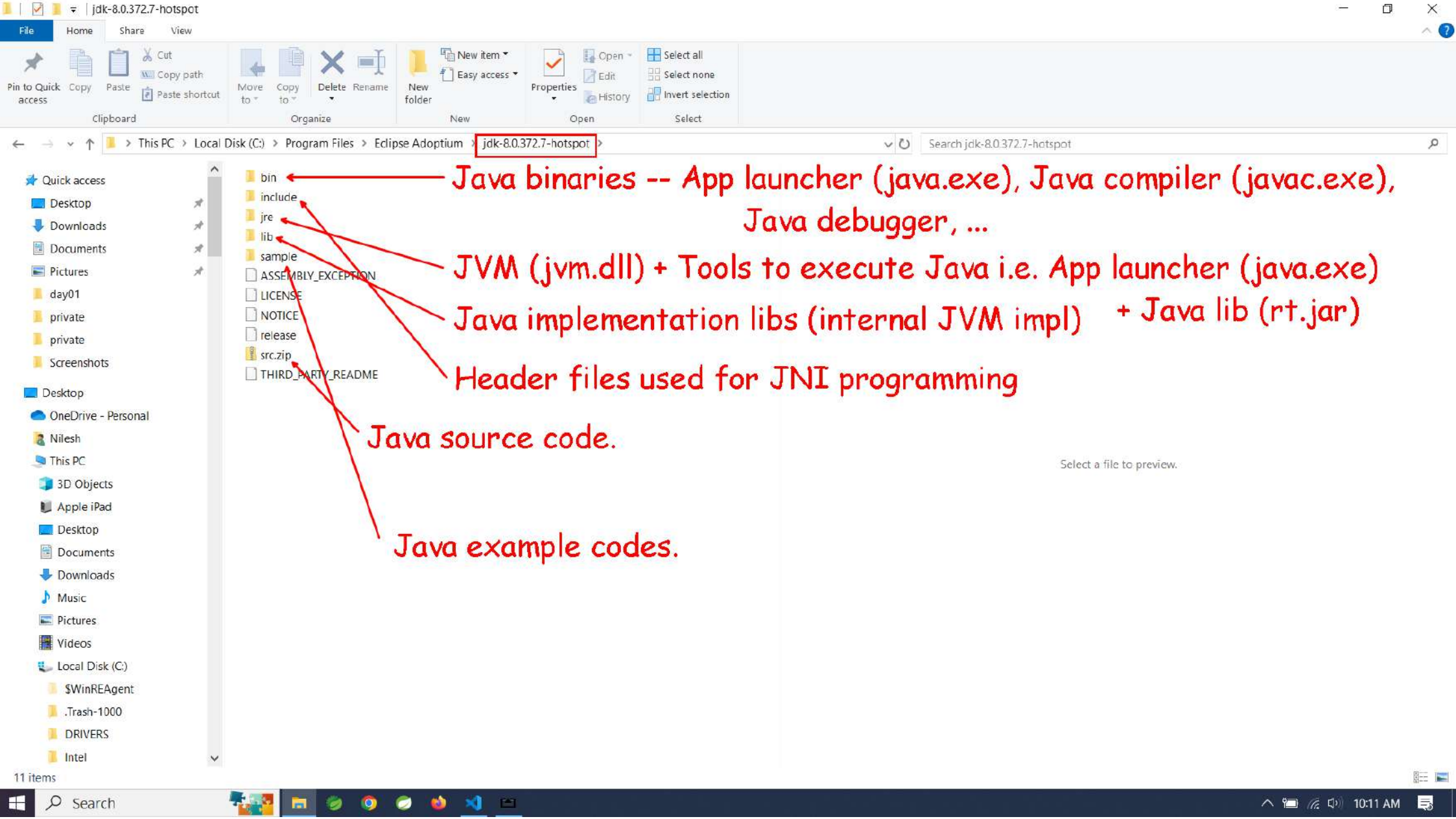
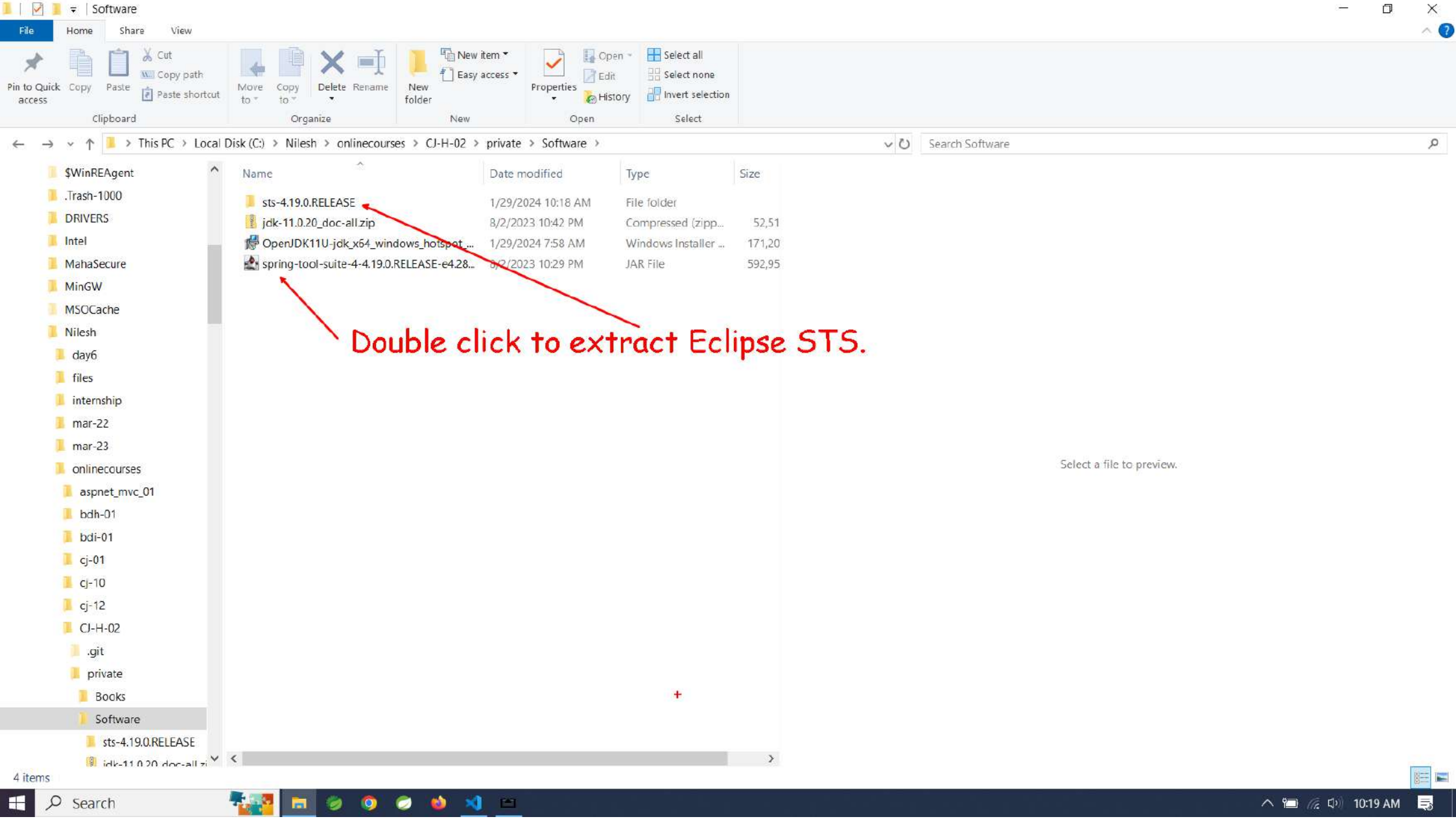
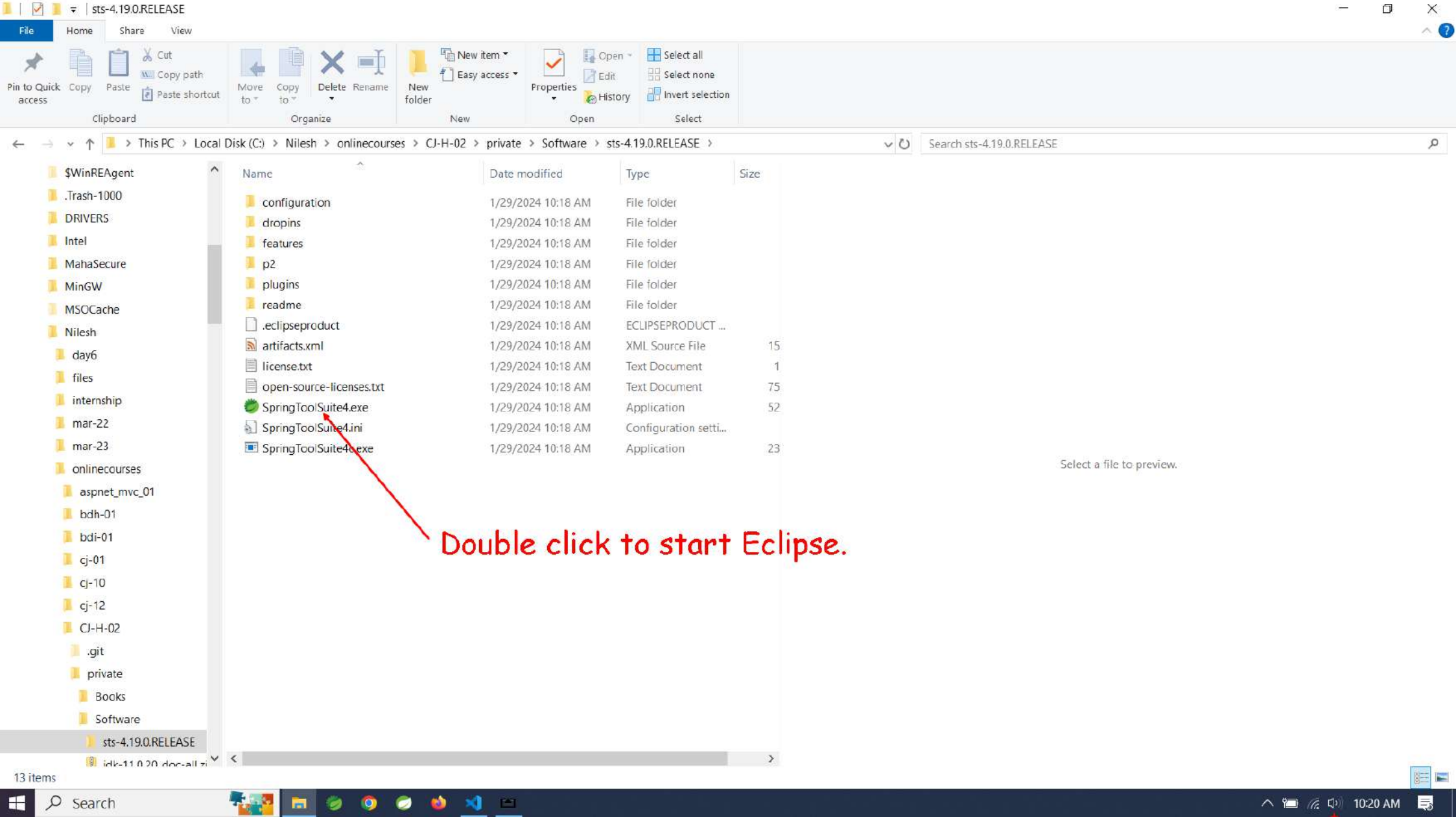
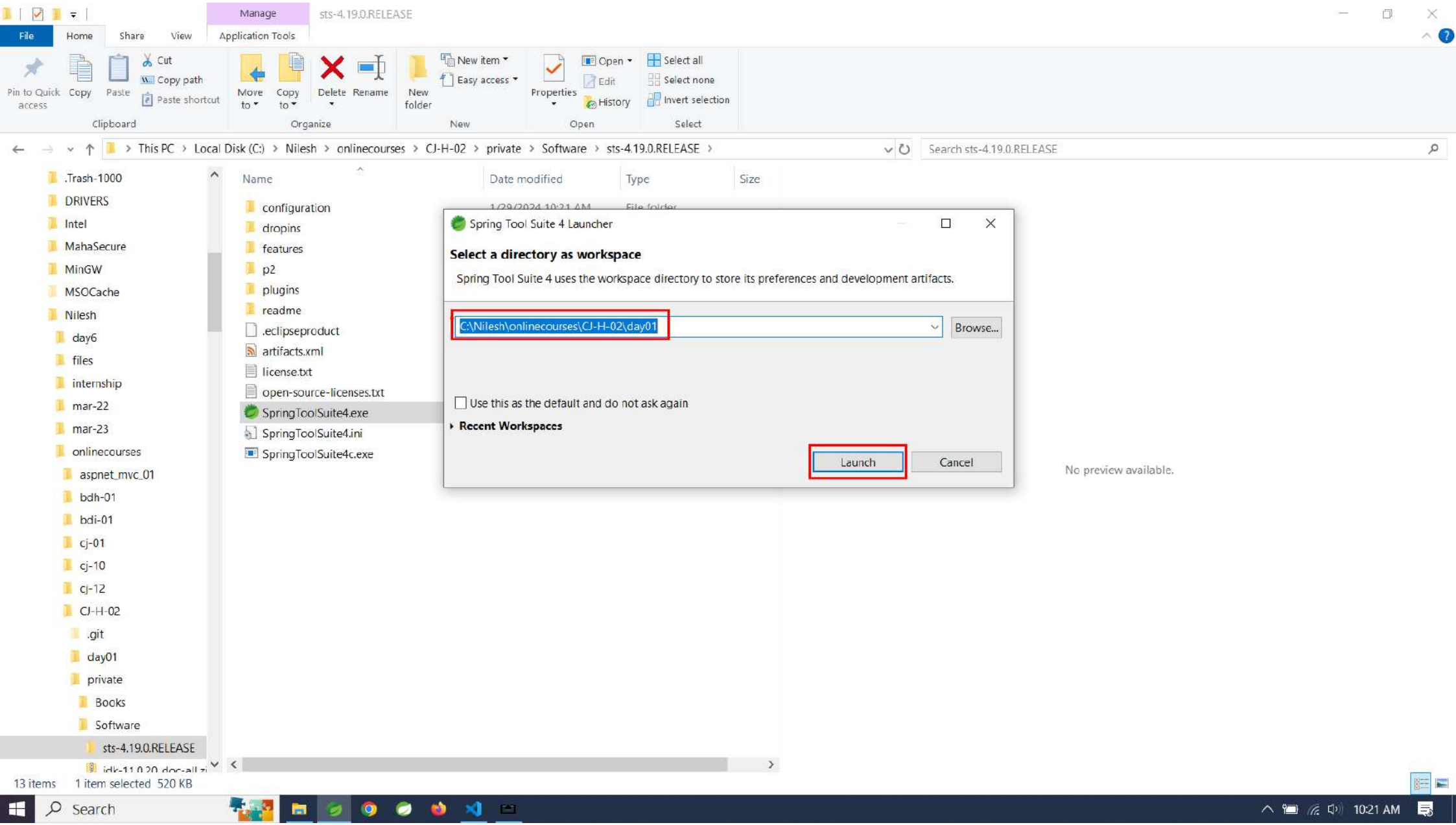

jdk-8.0.372.7-hotspot
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
This PC
Local Disk (C:)
Program Files
Eclipse Adoptium
jdk-8.0.372.7-hotspot
Search jdk-8.0.372.7-hotspot
Quick access
Desktop
Downloads
Documents
Pictures
day01
private
private
Screenshots
Desktop
OneDrive - Personal
Nilesh
This PC
3D Objects
Apple iPad
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
$WinREAgent
.Trash-1000
DRIVERS
Intel
bin
include
jre
lib
sample
ASSEMBLY_EXCEPTION
LICENSE
NOTICE
release
src.zip
THIRD_PARTY_README
Java binaries -- App launcher (java.exe), Java compiler (javac.exe), Java debugger, ...
JVM (jvm.dll) + Tools to execute Java i.e. App launcher (java.exe)
Java implementation libs (internal JVM impl) + Java lib (rt.jar)
Header files used for JNI programming
Java source code.
Java example codes.
Select a file to preview.
11 items
Search
10:11 AM


Software
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
This PC › Local Disk (C:) › Nilesh › onlinecourses › CJ-H-02 › private › Software ›
Search Software
$WinREAgent
.Trash-1000
DRIVERS
Intel
MahaSecure
MinGW
MSOCache
Nilesh
day6
files
internship
mar-22
mar-23
onlinecourses
aspnet_mvc_01
bdh-01
bdi-01
cj-01
cj-10
cj-12
CJ-H-02
.git
private
Books
Software
sts-4.19.0.RELEASE
Name
Date modified
Type
Size
sts-4.19.0.RELEASE
1/29/2024 10:18 AM
File folder
jdk-11.0.20_doc-all.zip
8/2/2023 10:42 PM
Compressed (zipp...
52,51
OpenJDK11U-jdk_x64_windows_hotspot_...
1/29/2024 7:58 AM
Windows Installer ...
171,20
spring-tool-suite-4-4.19.0.RELEASE-e4.28...
8/2/2023 10:29 PM
JAR File
592,95
Double click to extract Eclipse STS.
Select a file to preview.
4 items
Search
10:19 AM


sts-4.19.0.RELEASE
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
This PC › Local Disk (C:) › Nilesh › onlinecourses › CJ-H-02 › private › Software › sts-4.19.0.RELEASE ›
Search sts-4.19.0.RELEASE
$WinREAgent
.Trash-1000
DRIVERS
Intel
MahaSecure
MinGW
MSOCache
Nilesh
day6
files
internship
mar-22
mar-23
onlinecourses
aspnet_mvc_01
bdh-01
bdi-01
cj-01
cj-10
cj-12
CJ-H-02
.git
private
Books
Software
sts-4.19.0.RELEASE
Name
Date modified
Type
Size
configuration 1/29/2024 10:18 AM File folder
dropins 1/29/2024 10:18 AM File folder
features 1/29/2024 10:18 AM File folder
p2 1/29/2024 10:18 AM File folder
plugins 1/29/2024 10:18 AM File folder
readme 1/29/2024 10:18 AM File folder
.eclipseproduct 1/29/2024 10:18 AM ECLIPSEPRODUCT ...
artifacts.xml 1/29/2024 10:18 AM XML Source File 15
license.txt 1/29/2024 10:18 AM Text Document 1
open-source-licenses.txt 1/29/2024 10:18 AM Text Document 75
SpringToolSuite4.exe 1/29/2024 10:18 AM Application 52
SpringToolSuite4.ini 1/29/2024 10:18 AM Configuration setti...
SpringToolSuite4.exe 1/29/2024 10:18 AM Application 23
Select a file to preview.
Double click to start Eclipse.
13 items
Search
10:20 AM


Manage
sts-4.19.0.RELEASE
File
Home
Share
View
Application Tools
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
This PC › Local Disk (C:) › Nilesh › onlinecourses › CJ-H-02 › private › Software › sts-4.19.0.RELEASE ›
Search sts-4.19.0.RELEASE
.Trash-1000
DRIVERS
Intel
MahaSecure
MinGW
MSOCache
Nilesh
day6
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mar-22
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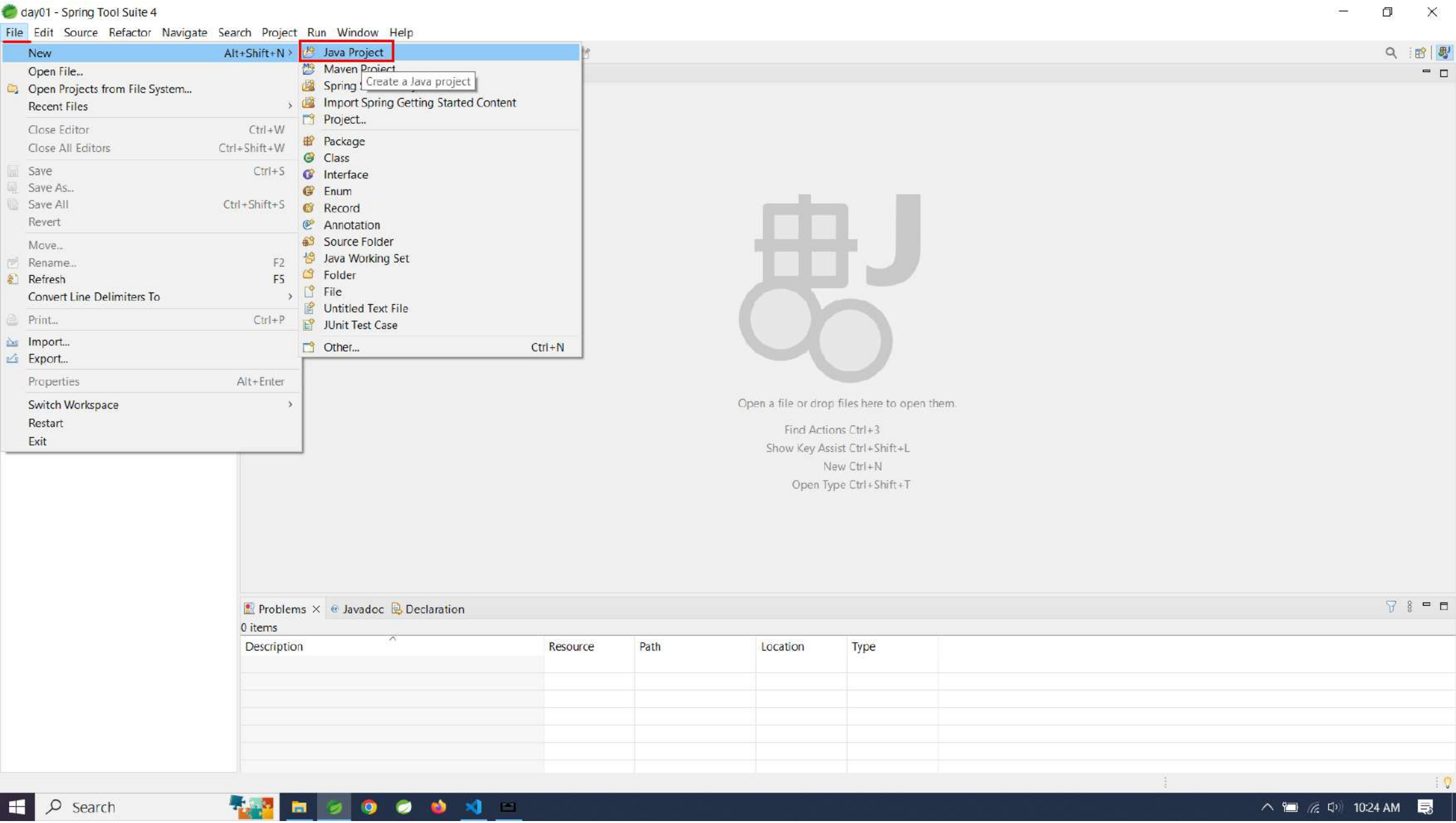
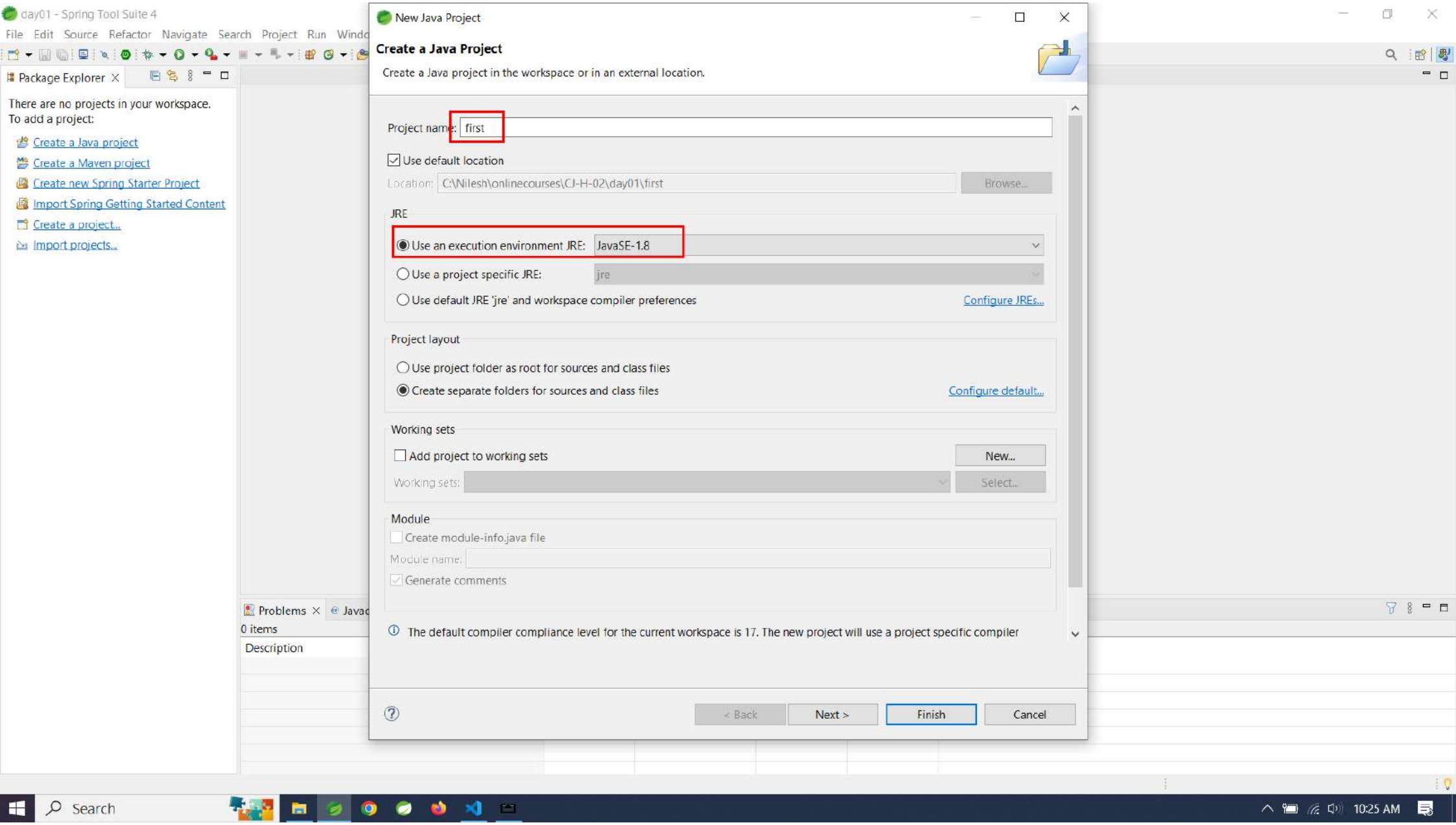
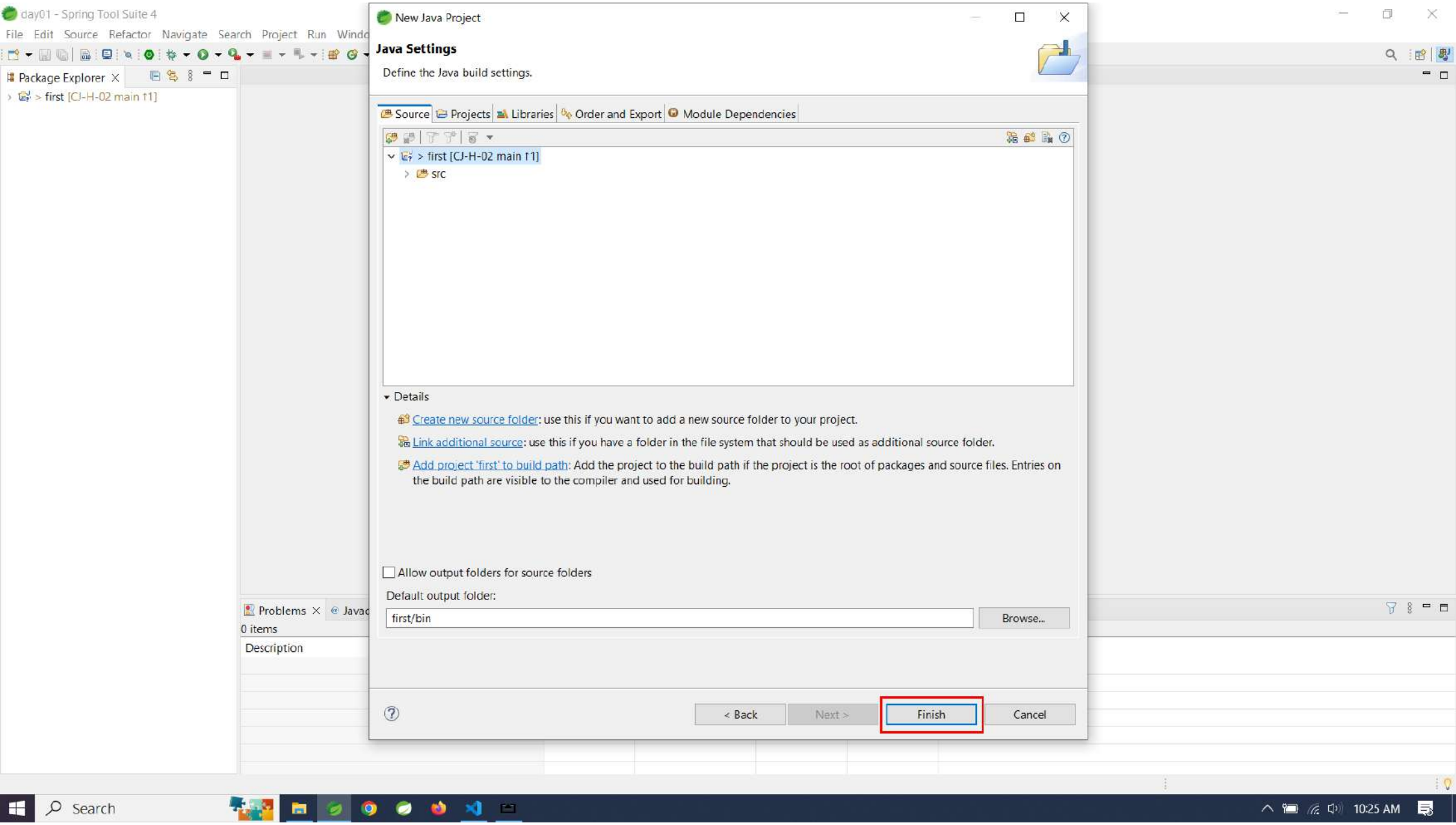
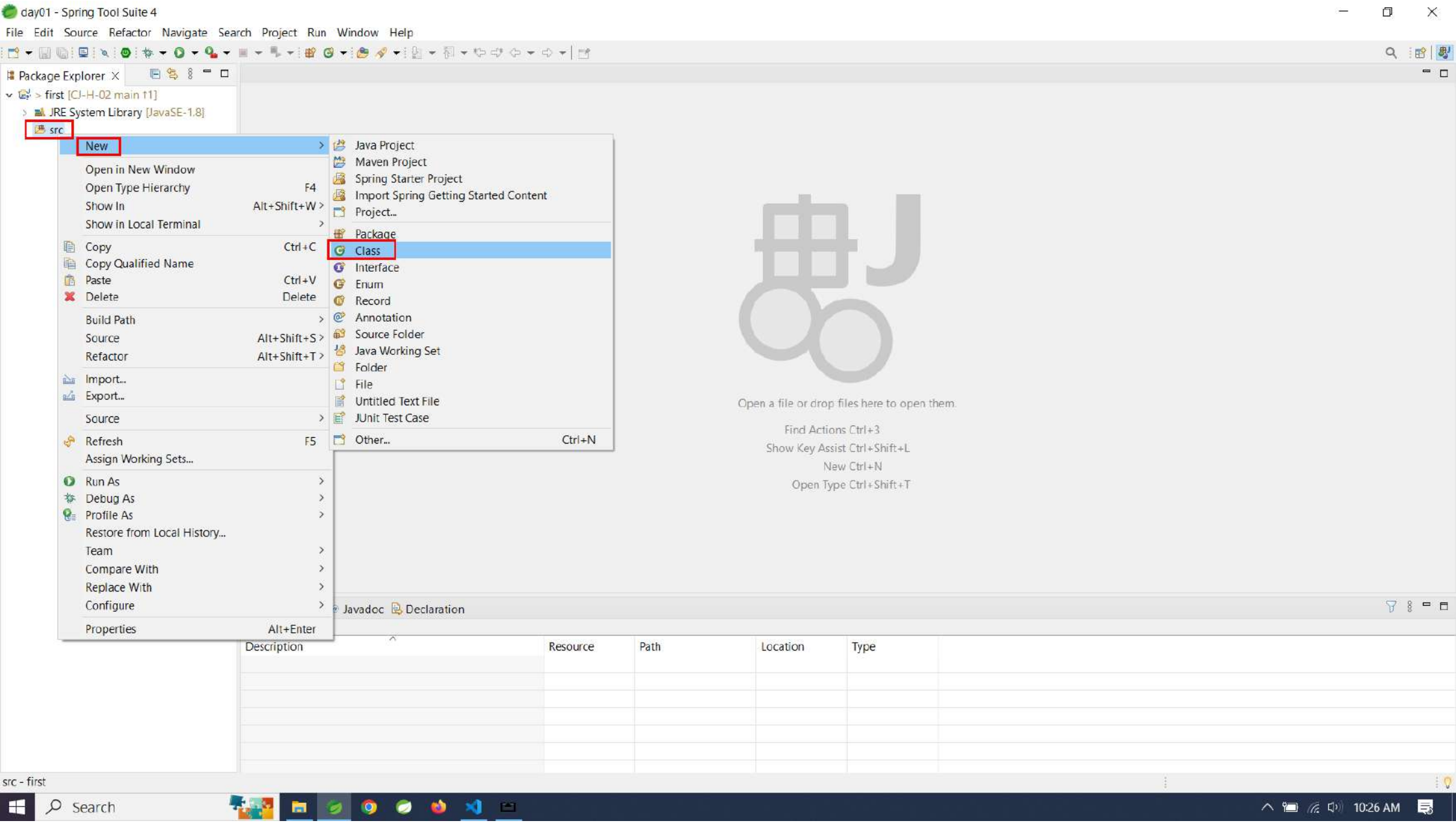
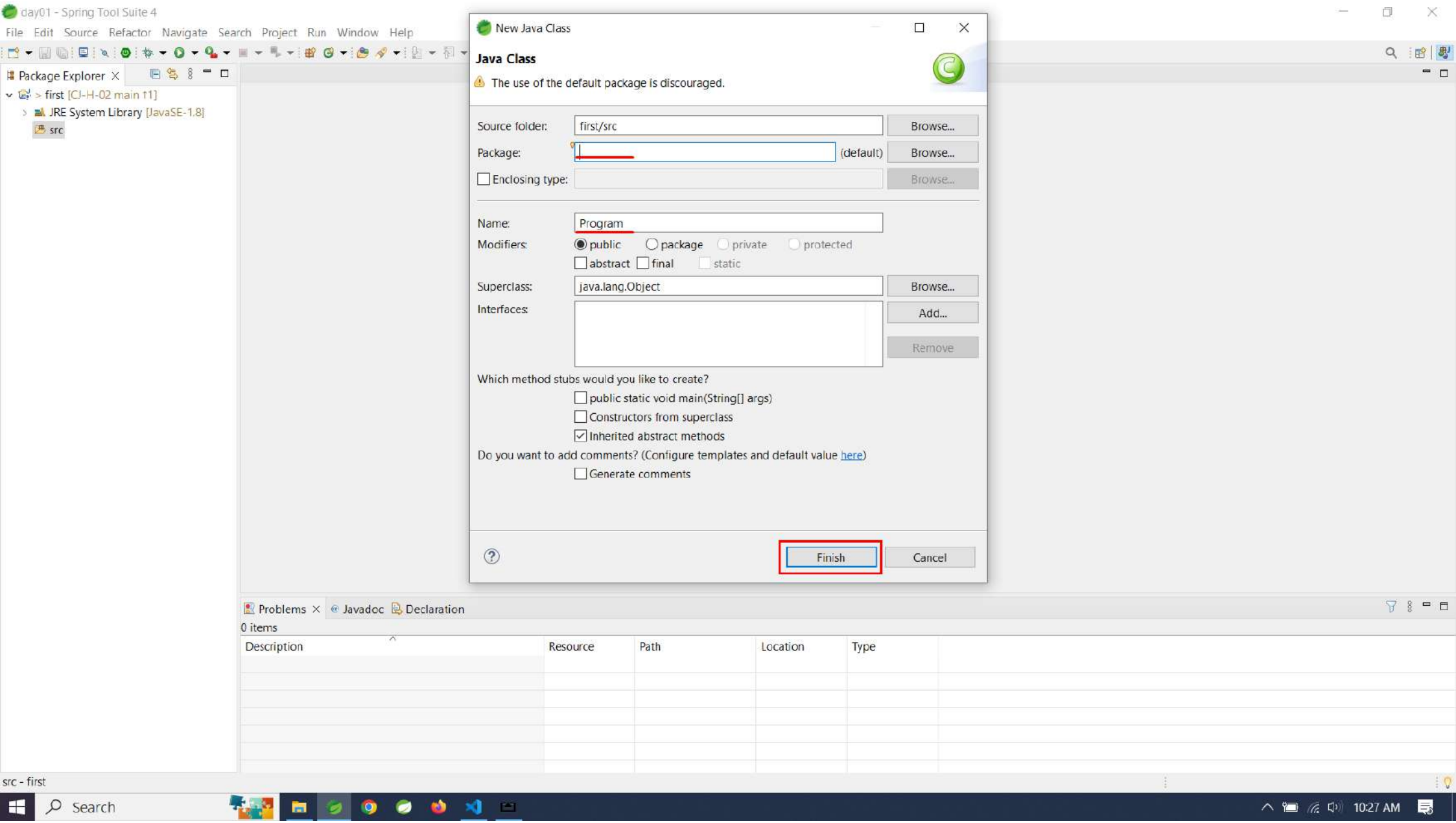
onlinecourses
aspnet_mvc_01
bdh-01
bdi-01
cj-01
cj-10
cj-12
CJ-H-02
.git
day01
private
Books
Software
sts-4.19.0.RELEASE
Name
Date modified
Type
Size
configuration
dropins
features
p2
plugins
readme
.eclipseproduct
artifacts.xml
license.txt
open-source-licenses.txt
SpringToolSuite4.exe
SpringToolSuite4.ini
SpringToolSuite4c.exe
Spring Tool Suite 4 Launcher
Select a directory as workspace
Spring Tool Suite 4 uses the workspace directory to store its preferences and development artifacts.
C:\Nilesh\onlinecourses\CJ-H-02\day01
Browse...
Use this as the default and do not ask again
Recent Workspaces
Launch
Cancel
No preview available.
13 items
1 item selected 520 KB
Search
10:21 AM

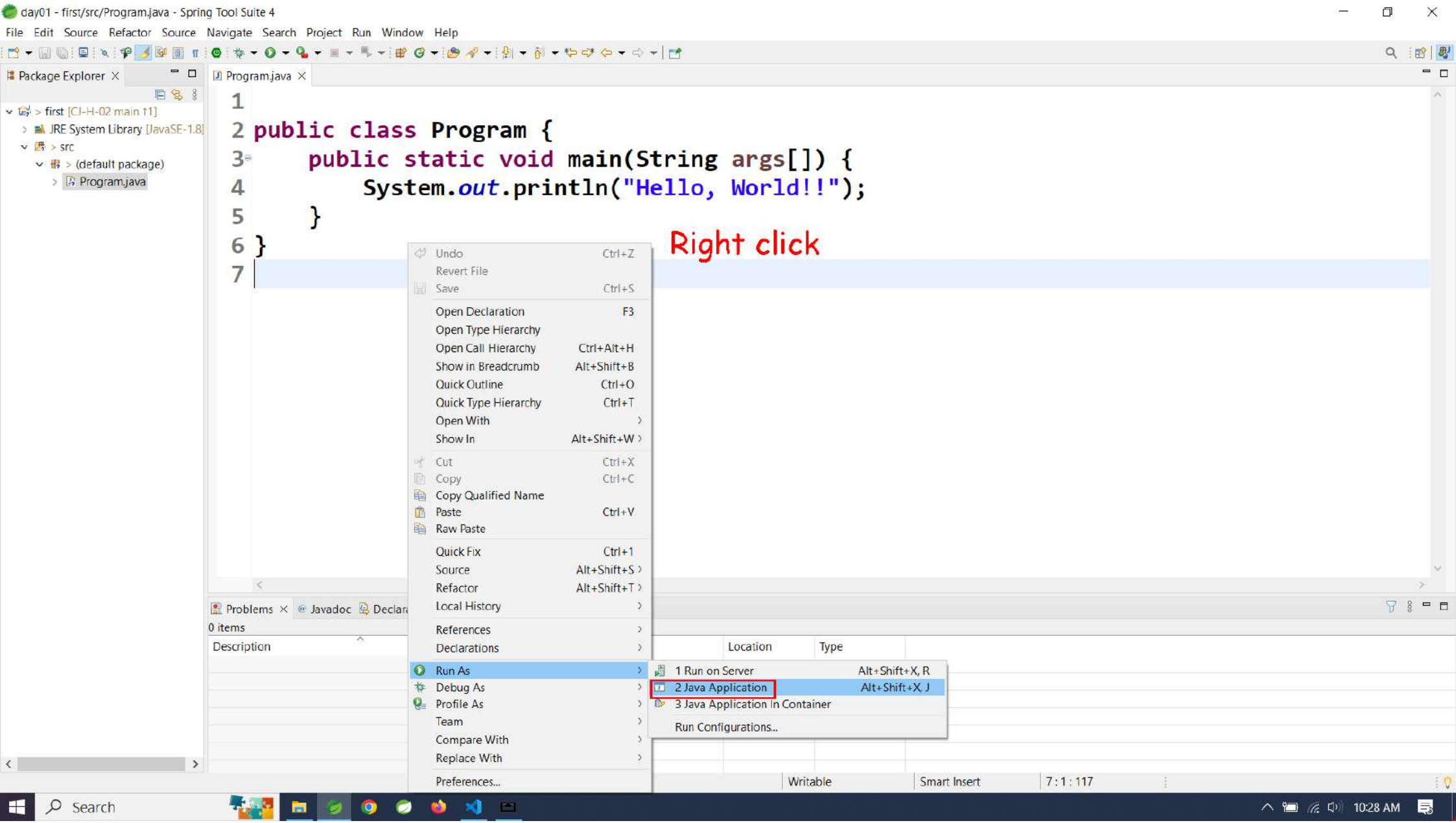

day01 - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Window Help
New Alt+Shift+N
Open File...
Open Projects from File System...
Recent Files
Close Editor Ctrl+W
Close All Editors Ctrl+Shift+W
Save Ctrl+S
Save As...
Save All Ctrl+Shift+S
Revert
Move...
Rename... F2
Refresh F5
Convert Line Delimiters To
Print... Ctrl+P
Import...
Export...
Properties Alt+Enter
Switch Workspace
Restart
Exit
Java Project
Maven Project
Create a Java project
Import Spring Getting Started Content
Project...
Package
Class
Interface
Enum
Record
Annotation
Source Folder
Java Working Set
Folder
File
Untitled Text File
JUnit Test Case
Other... Ctrl+N
Open a file or drop files here to open them.
Find Actions Ctrl+3
Show Key Assist Ctrl+Shift+L
New Ctrl+N
Open Type Ctrl+Shift+T
Problems
Javadoc
Declaration
0 items
Description
Resource
Path
Location
Type
Search
10:24 AM

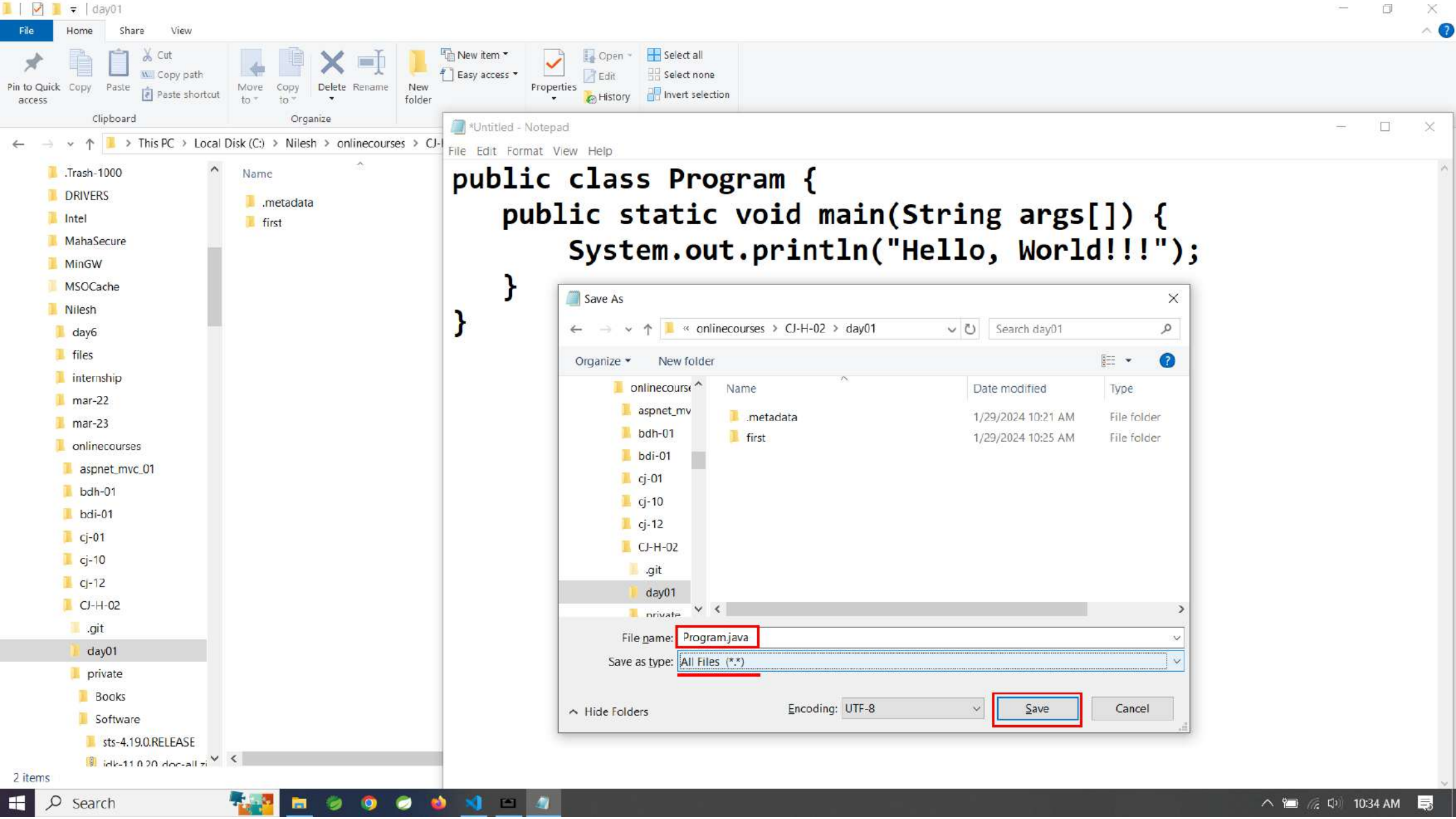

day01 - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Windo
Package Explorer
There are no projects in your workspace.
To add a project:
Create a Java project
Create a Maven project
Create new Spring Starter Project
Import Spring Getting Started Content
Create a project...
Import projects...
Problems
0 items
Description
New Java Project
Create a Java Project
Create a Java project in the workspace or in an external location.
Project name: first
Use default location
Location: C:\Nilesh\onlinecourses\CJ-H-02\day01\first
Browse...
JRE
Use an execution environment JRE: JavaSE-1.8
Use a project specific JRE: jre
Use default JRE 'jre' and workspace compiler preferences
Configure JREs...
Project layout
Use project folder as root for sources and class files
Create separate folders for sources and class files
Configure default...
Working sets
Add project to working sets
New...
Working sets:
Select...
Module
Create module-info.java file
Module name:
Generate comments
The default compiler compliance level for the current workspace is 17. The new project will use a project specific compiler
< Back
Next >
Finish
Cancel
Search
10:25 AM

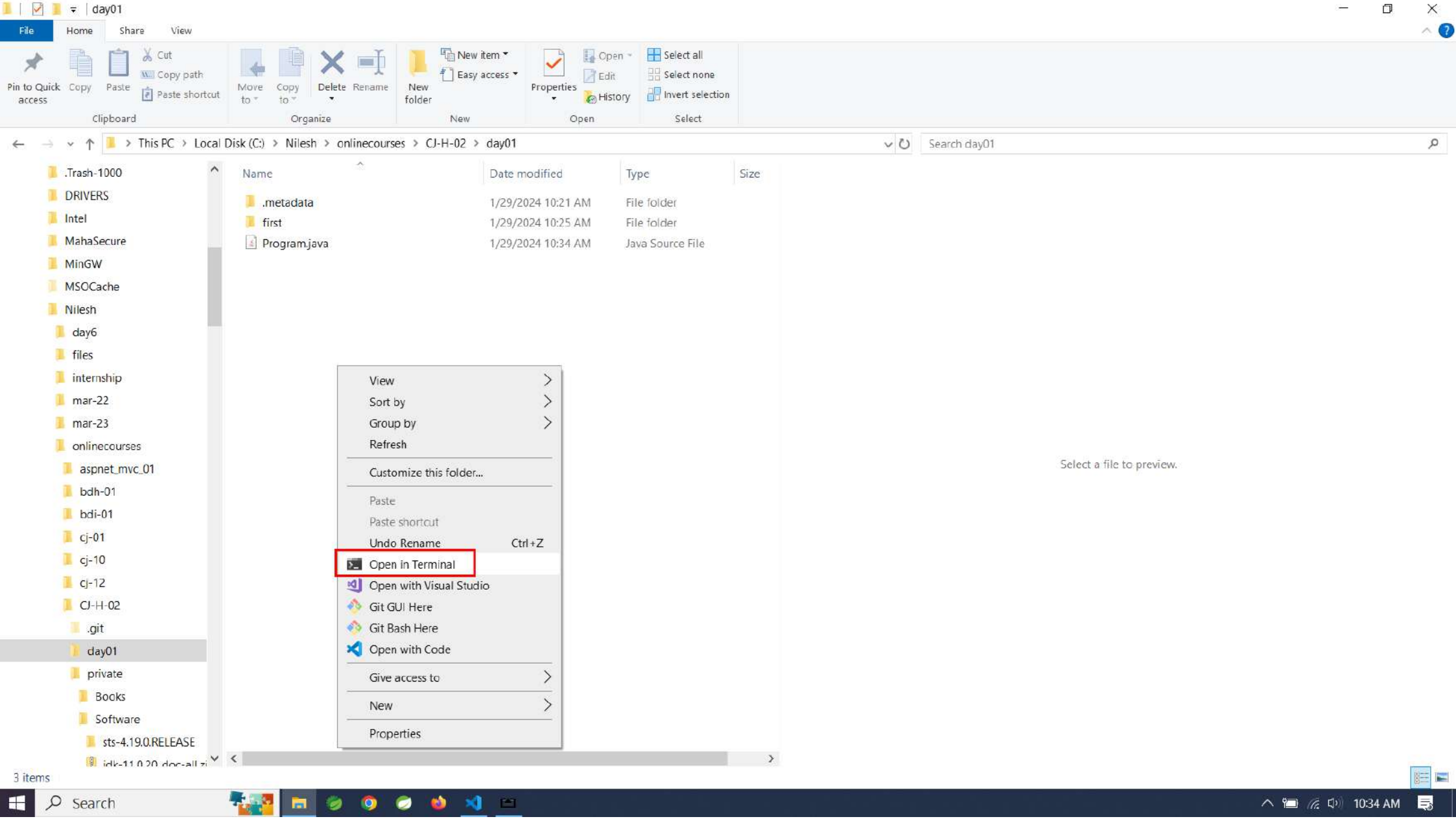

day01 - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Windo
Package Explorer
> first [CJ-H-02 main t1]
Problems
Javac
0 items
Description
New Java Project
Java Settings
Define the Java build settings.
Source
Projects
Libraries
Order and Export
Module Dependencies
> first [CJ-H-02 main t1]
src
Details
Create new source folder: use this if you want to add a new source folder to your project.
Link additional source: use this if you have a folder in the file system that should be used as additional source folder.
Add project 'first' to build path: Add the project to the build path if the project is the root of packages and source files. Entries on the build path are visible to the compiler and used for building.
Allow output folders for source folders
Default output folder:
first/bin
Browse...
< Back
Next >
Finish
Cancel
Search
10:25 AM

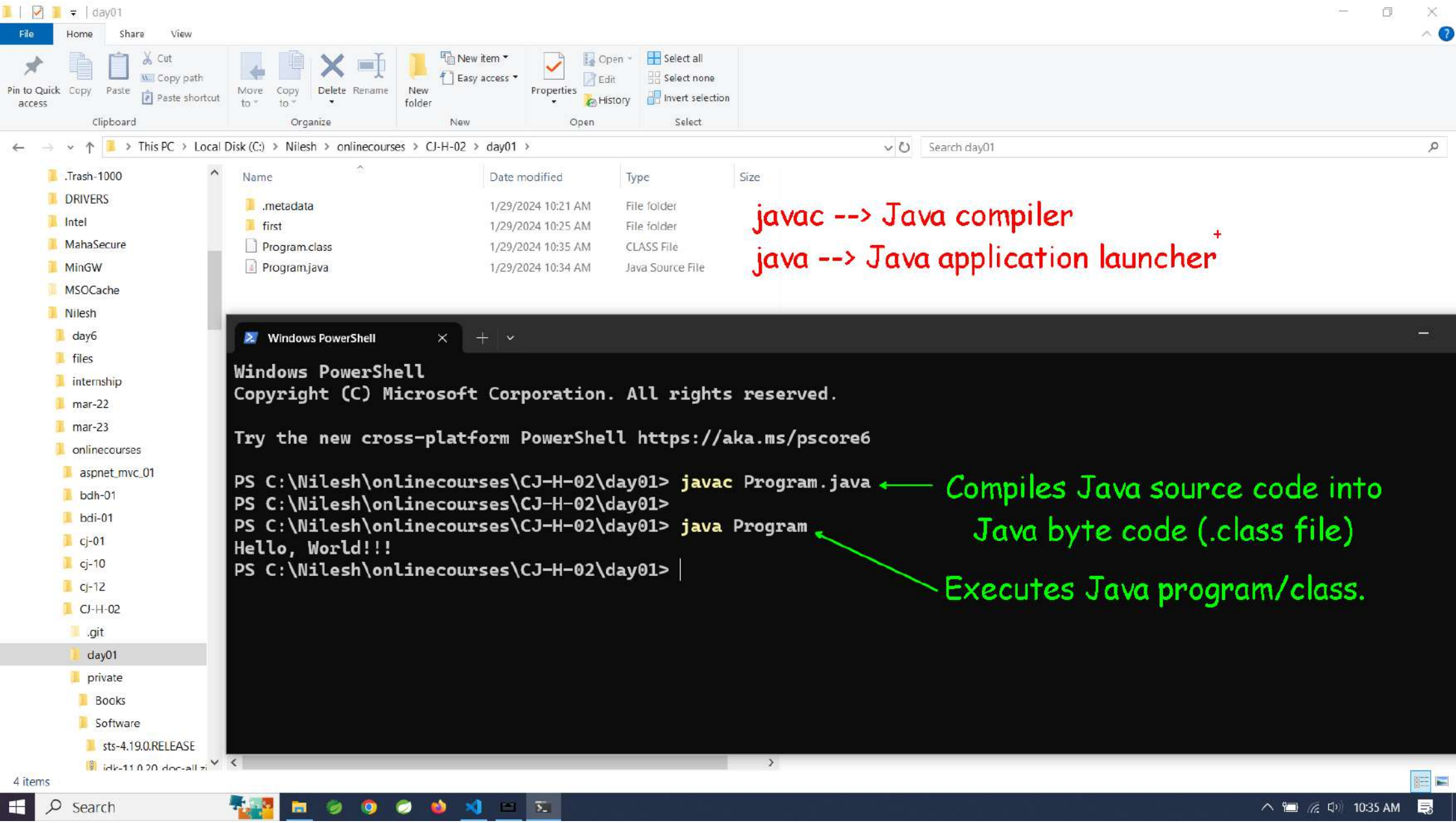

day01 - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
first [CJ-H-02 main t1]
JRE System Library [JavaSE-1.8]
src
New
Open in New Window
Open Type Hierarchy F4
Show In Alt+Shift+W
Show in Local Terminal
Copy Ctrl+C
Copy Qualified Name
Paste Ctrl+V
Delete Delete
Build Path
Source Alt+Shift+S
Refactor Alt+Shift+T
Import...
Export...
Source
Refresh F5
Assign Working Sets...
Run As
Debug As
Profile As
Restore from Local History...
Team
Compare With
Replace With
Configure
Properties Alt+Enter
Java Project
Maven Project
Spring Starter Project
Import Spring Getting Started Content
Project...
Package
Class
Interface
Enum
Record
Annotation
Source Folder
Java Working Set
Folder
File
Untitled Text File
JUnit Test Case
Other... Ctrl+N
Open a file or drop files here to open them.
Find Actions Ctrl+3
Show Key Assist Ctrl+Shift+L
New Ctrl+N
Open Type Ctrl+Shift+T
Javadoc Declaration
Description Resource Path Location Type
src - first
Search
10:26 AM

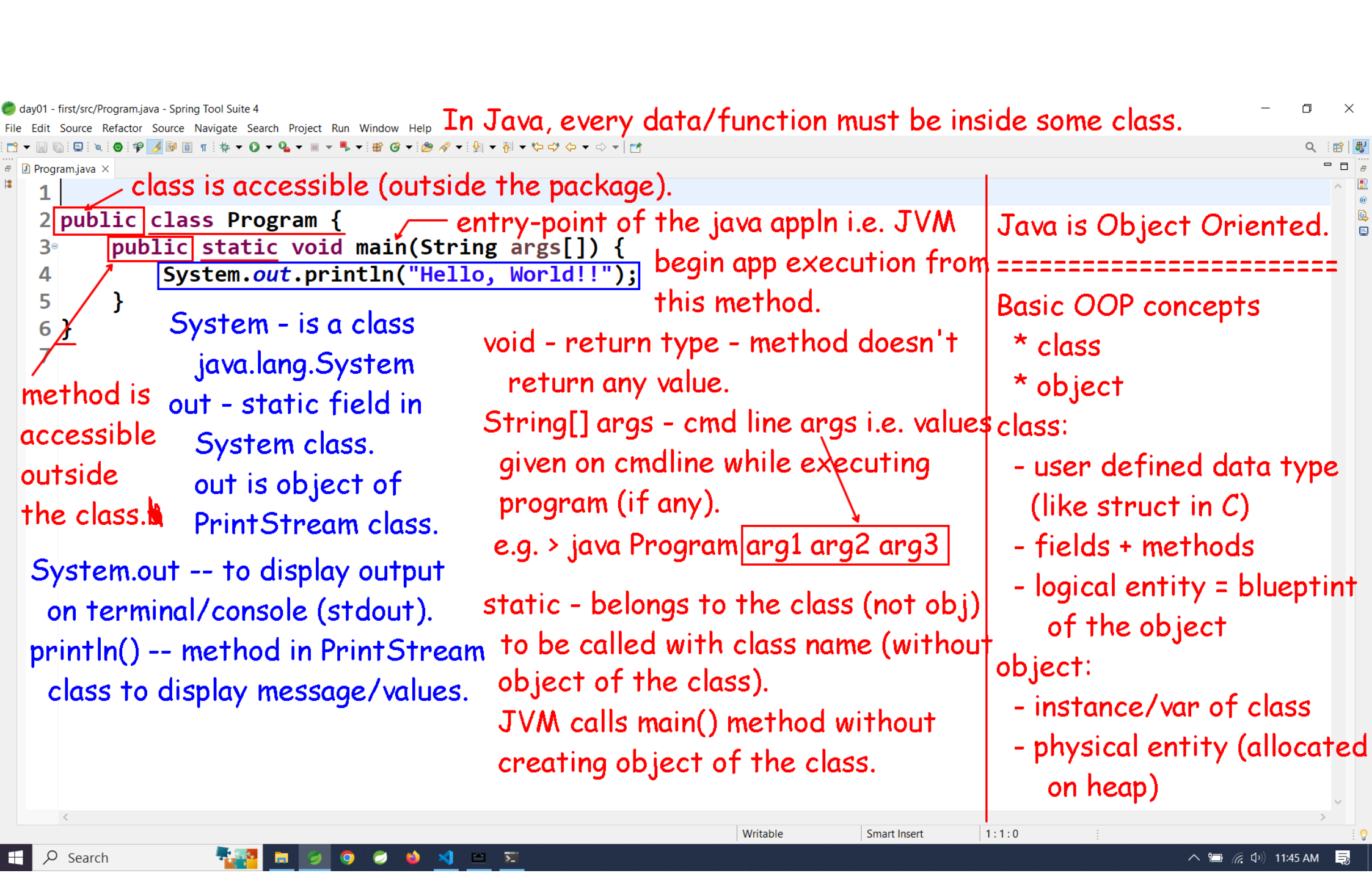

day01 - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
first [CJ-H-02 main t1]
JRE System Library [JavaSE-1.8]
src
New Java Class
Java Class
The use of the default package is discouraged.
Source folder: first/src
Browse...
Package:
(default)
Enclosing type:
Name: Program
Modifiers: public package private protected
abstract final static
Superclass: java.lang.Object
Interfaces:
Add...
Remove
Which method stubs would you like to create?
public static void main(String[] args)
Constructors from superclass
Inherited abstract methods
Do you want to add comments? (Configure templates and default value here)
Generate comments
Finish
Cancel
Problems
Javadoc
Declaration
0 items
Description
Resource
Path
Location
Type
src - first
Search
10:27 AM

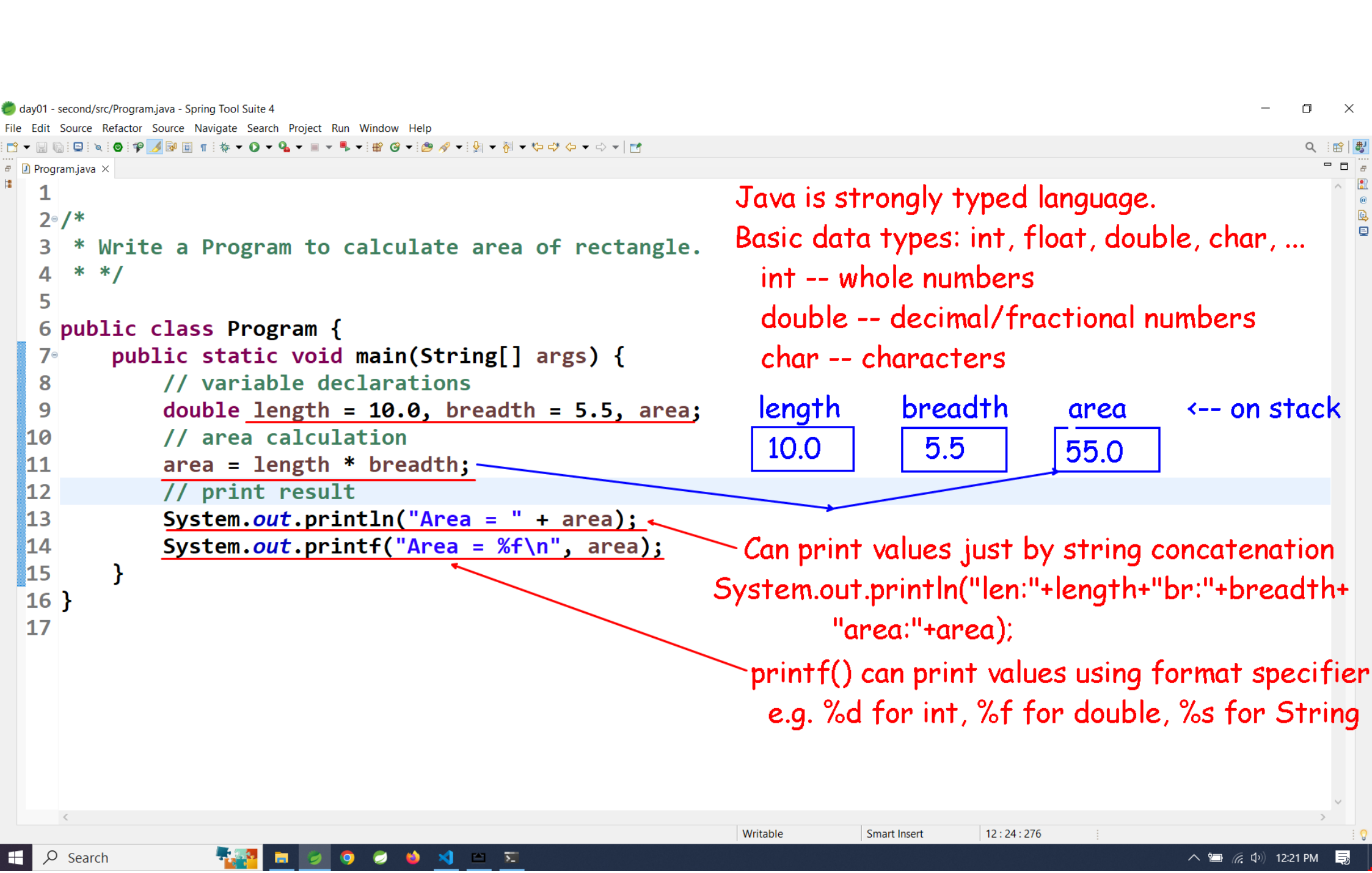

day01 - first/src/Program.java - Spring Tool Suite 4
File Edit Source Refactor Source Navigate Search Project Run Window Help
Package Explorer
first [CJ-H-02 main t1]
JRE System Library [JavaSE-1.8]
src
(default package)
Program.java
Program.java
1
2 public class Program {
3 public static void main(String args[]) {
4 System.out.println("Hello, World!!");
5 }
6 }
7
Right click
Undo Ctrl+Z
Revert File
Save Ctrl+S
Open Declaration F3
Open Type Hierarchy
Open Call Hierarchy Ctrl+Alt+H
Show in Breadcrumb Alt+Shift+B
Quick Outline Ctrl+O
Quick Type Hierarchy Ctrl+T
Open With
Show In Alt+Shift+W
Cut Ctrl+X
Copy Ctrl+C
Copy Qualified Name
Paste Ctrl+V
Raw Paste
Quick Fix Ctrl+1
Source Alt+Shift+S
Refactor Alt+Shift+T
Local History
References
Declarations
Run As
Debug As
Profile As
Team
Compare With
Replace With
Preferences...
1 Run on Server Alt+Shift+X, R
2 Java Application Alt+Shift+X, J
3 Java Application In Container
Run Configurations...
Problems
Javadoc
0 items
Description
Location
Type
Writable
Smart Insert
7 : 1 : 117
Search
10:28 AM

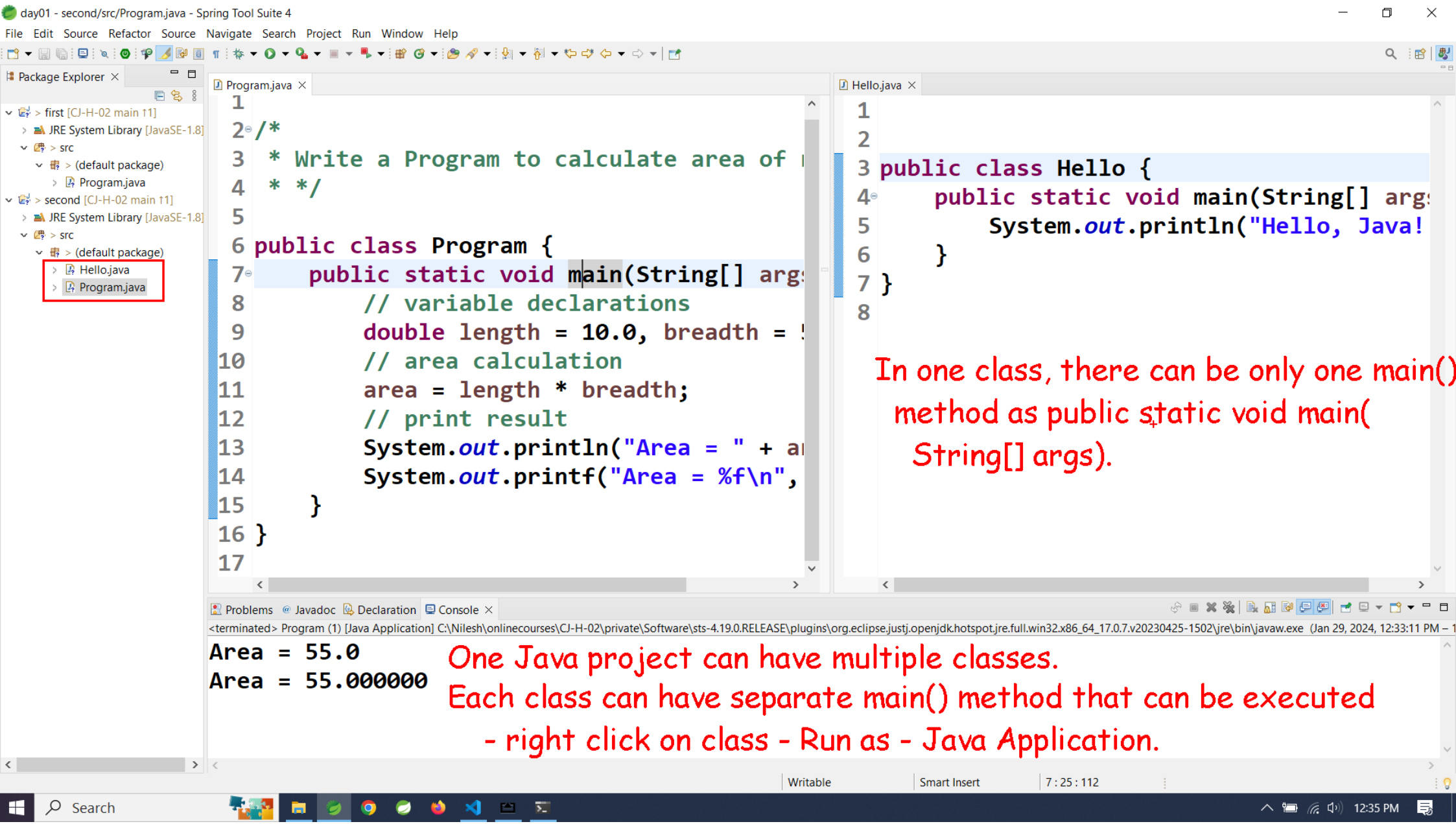

day01
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Move to
Copy to
Delete
Rename
New folder
New item
Easy access
Properties
Open
Edit
History
Select all
Select none
Invert selection
Clipboard
Organize
This PC › Local Disk (C:) › Nilesh › onlinecourses › CJ-
.Trash-1000
DRIVERS
Intel
MahaSecure
MinGW
MSOCache
Nilesh
day6
files
internship
mar-22
mar-23
onlinecourses
aspnet_mvc_01
bdh-01
bdi-01
cj-01
cj-10
cj-12
CJ-H-02
.git
day01
private
Books
Software
sts-4.19.0.RELEASE
Name
.metadata
first
2 items
*Untitled - Notepad
File Edit Format View Help
public class Program {
public static void main(String args[]) {
System.out.println("Hello, World!!!");
}
}
Save As
« onlinecourses › CJ-H-02 › day01
Search day01
Organize
New folder
onlinecourse
aspnet_mv
bdh-01
bdi-01
cj-01
cj-10
cj-12
CJ-H-02
.git
day01
Name
Date modified
Type
.metadata
1/29/2024 10:21 AM
File folder
first
1/29/2024 10:25 AM
File folder
File name: Program.java
Save as type: All Files (*.*)
Hide Folders
Encoding: UTF-8
Save
Cancel
Search
10:34 AM


day01
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
This PC
Local Disk (C:)
Nilesh
onlinecourses
CJ-H-02
day01
Search day01
.Trash-1000
DRIVERS
Intel
MahaSecure
MinGW
MSOCache
Nilesh
day6
files
internship
mar-22
mar-23
onlinecourses
aspnet_mvc_01
bdh-01
bdi-01
cj-01
cj-10
cj-12
CJ-H-02
.git
day01
private
Books
Software
sts-4.19.0.RELEASE
Name
Date modified
Type
Size
.metadata
1/29/2024 10:21 AM
File folder
first
1/29/2024 10:25 AM
File folder
Program.java
1/29/2024 10:34 AM
Java Source File
View
Sort by
Group by
Refresh
Customize this folder...
Paste
Paste shortcut
Undo Rename
Ctrl+Z
Open in Terminal
Open with Visual Studio
Git GUI Here
Git Bash Here
Open with Code
Give access to
New
Properties
Select a file to preview.
3 items
Search
10:34 AM

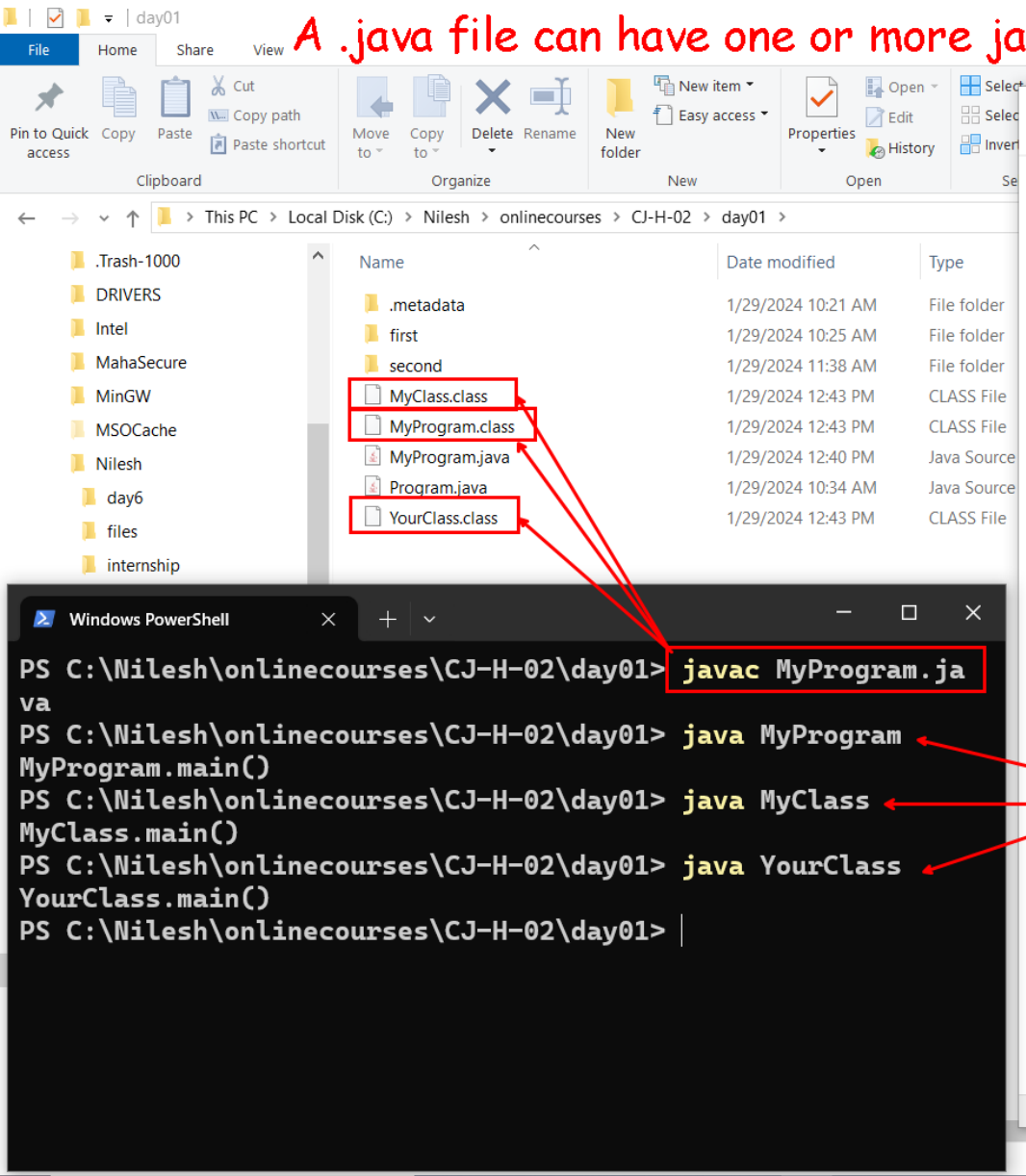

day01
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Move to
Copy to
Delete
Rename
New folder
New item
Easy access
Properties
Open
Edit
History
Select all
Select none
Invert selection
Clipboard
Organize
New
Open
Select
This PC › Local Disk (C:) › Nilesh › onlinecourses › CJ-H-02 › day01 ›
Search day01
.Trash-1000
DRIVERS
Intel
MahaSecure
MinGW
MSOCache
Nilesh
day6
files
internship
mar-22
mar-23
onlinecourses
aspnet_mvc_01
bdh-01
bdi-01
cj-01
cj-10
cj-12
CJ-H-02
.git
day01
private
Books
Software
sts-4.19.0.RELEASE
Name
Date modified
Type
Size
.metadata 1/29/2024 10:21 AM File folder
first 1/29/2024 10:25 AM File folder
Program.class 1/29/2024 10:35 AM CLASS File
Program.java 1/29/2024 10:34 AM Java Source File
javac --> Java compiler
java --> Java application launcher
Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell https://aka.ms/pscore6
PS C:\Nilesh\onlinecourses\CJ-H-02\day01> javac Program.java
PS C:\Nilesh\onlinecourses\CJ-H-02\day01>
PS C:\Nilesh\onlinecourses\CJ-H-02\day01> java Program
Hello, World!!!
PS C:\Nilesh\onlinecourses\CJ-H-02\day01>
Compiles Java source code into Java byte code (.class file)
Executes Java program/class.
4 items
Search
10:35 AM

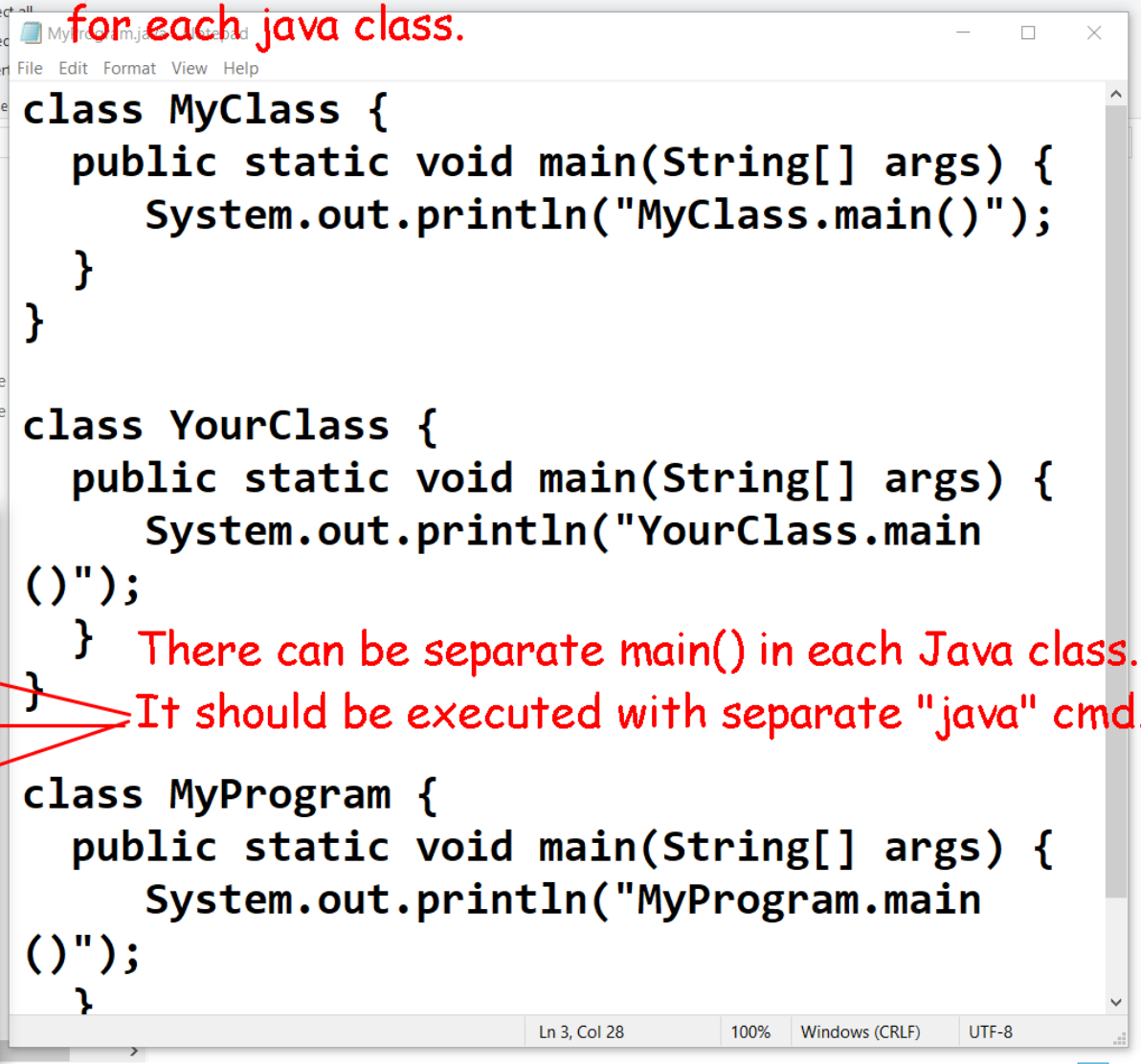

day01 - first/src/Program.java - Spring Tool Suite 4
File Edit Source Refactor Source Navigate Search Project Run Window Help
Program.java
1
2 public class Program {
3 public static void main(String args[]) {
4 System.out.println("Hello, World!!");
5 }
6 }
7
In Java, every data/function must be inside some class.
class is accessible (outside the package).
entry-point of the java appln i.e. JVM begin app execution from this method.
method is accessible outside the class.
System - is a class java.lang.System
out - static field in System class.
out is object of PrintStream class.
System.out -- to display output on terminal/console (stdout).
println() -- method in PrintStream class to display message/values.
void - return type - method doesn't return any value.
String[] args - cmd line args i.e. values given on cmdline while executing program (if any).
e.g. > java Program arg1 arg2 arg3
static - belongs to the class (not obj) to be called with class name (without object of the class).
JVM calls main() method without creating object of the class.
Java is Object Oriented.
Basic OOP concepts
* class
* object
class:
- user defined data type (like struct in C)
- fields + methods
- logical entity = blueptint of the object
object:
- instance/var of class
- physical entity (allocated on heap)
Writable
Smart Insert
1 : 1 : 0
Search
11:45 AM


day01 - second/src/Program.java - Spring Tool Suite 4
File Edit Source Refactor Source Navigate Search Project Run Window Help
Program.java
1
2 /*
3 * Write a Program to calculate area of rectangle.
4 * */
5
6 public class Program {
7 public static void main(String[] args) {
8 // variable declarations
9 double length = 10.0, breadth = 5.5, area;
10 // area calculation
11 area = length * breadth;
12 // print result
13 System.out.println("Area = " + area);
14 System.out.printf("Area = %f\n", area);
15 }
16 }
17
Java is strongly typed language.
Basic data types: int, float, double, char, ...
int -- whole numbers
double -- decimal/fractional numbers
char -- characters
length
breadth
area
<-- on stack
10.0
5.5
55.0
Can print values just by string concatenation
System.out.println("len:"+length+"br:"+breadth+
"area:"+area);
printf() can print values using format specifier
e.g. %d for int, %f for double, %s for String
Writable
Smart Insert
12 : 24 : 276
Search
12:21 PM


day01 - second/src/Program.java - Spring Tool Suite 4
File Edit Source Refactor Source Navigate Search Project Run Window Help
Package Explorer
first [CJ-H-02 main ↑1]
JRE System Library [JavaSE-1.8]
src
(default package)
Program.java
second [CJ-H-02 main ↑1]
JRE System Library [JavaSE-1.8]
src
(default package)
Hello.java
Program.java
Program.java
/*
* Write a Program to calculate area of
* */
public class Program {
public static void main(String[] args
// variable declarations
double length = 10.0, breadth =
// area calculation
area = length * breadth;
// print result
System.out.println("Area = " + a
System.out.printf("Area = %f\n",
}
}
Hello.java
public class Hello {
public static void main(String[] args
System.out.println("Hello, Java!
}
}
In one class, there can be only one main()
method as public static void main(
String[] args).
Problems Javadoc Declaration Console
<terminated> Program (1) [Java Application] C:\Nilesh\onlinecourses\CJ-H-02\private\Software\sts-4.19.0.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (Jan 29, 2024, 12:33:11 PM –
Area = 55.0
Area = 55.000000
One Java project can have multiple classes.
Each class can have separate main() method that can be executed
- right click on class - Run as - Java Application.
Writable
Smart Insert
7 : 25 : 112
Search
12:35 PM

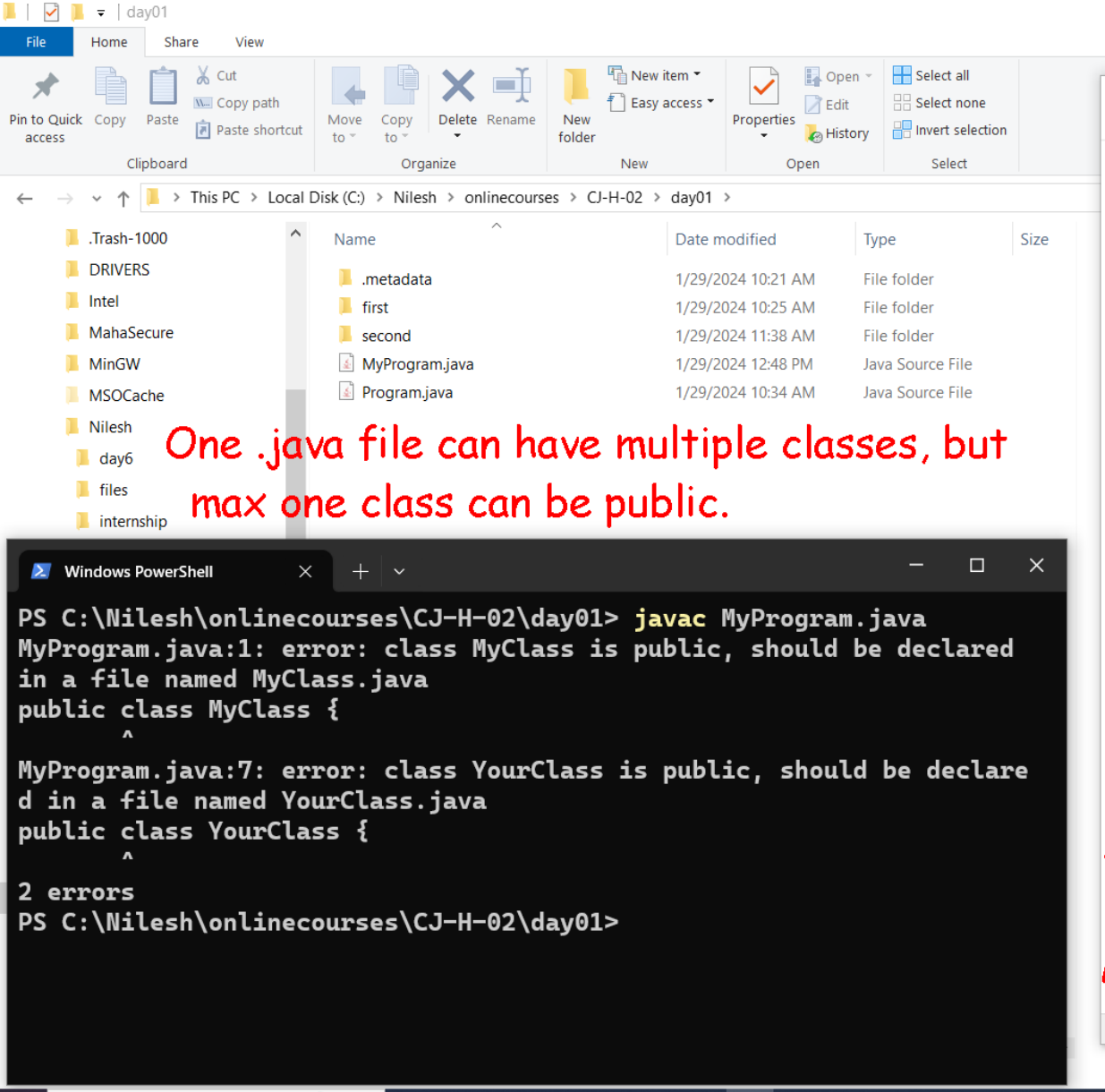
A .java file can have one or more java classes. When compiled one .class is created for each java class.

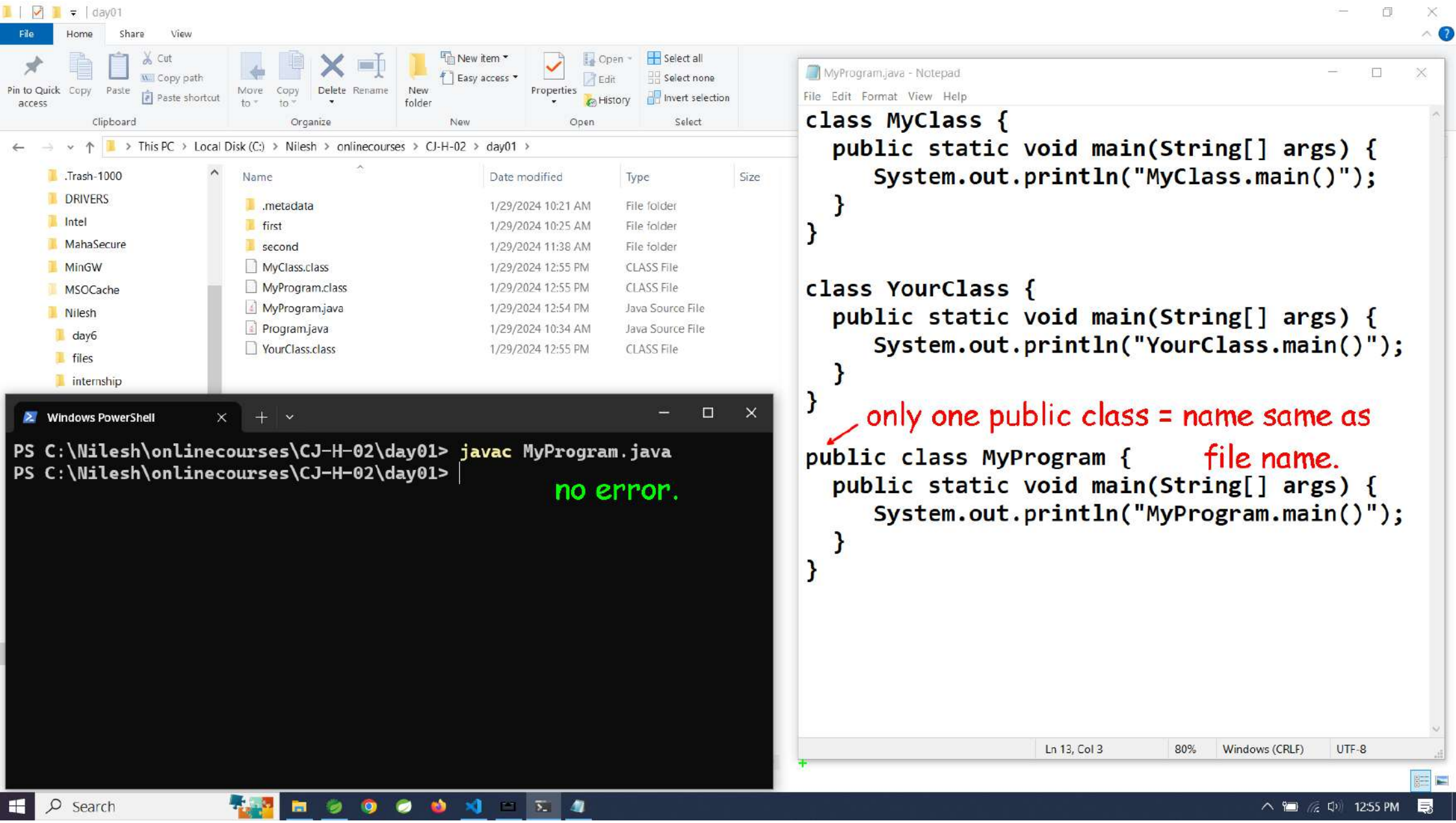


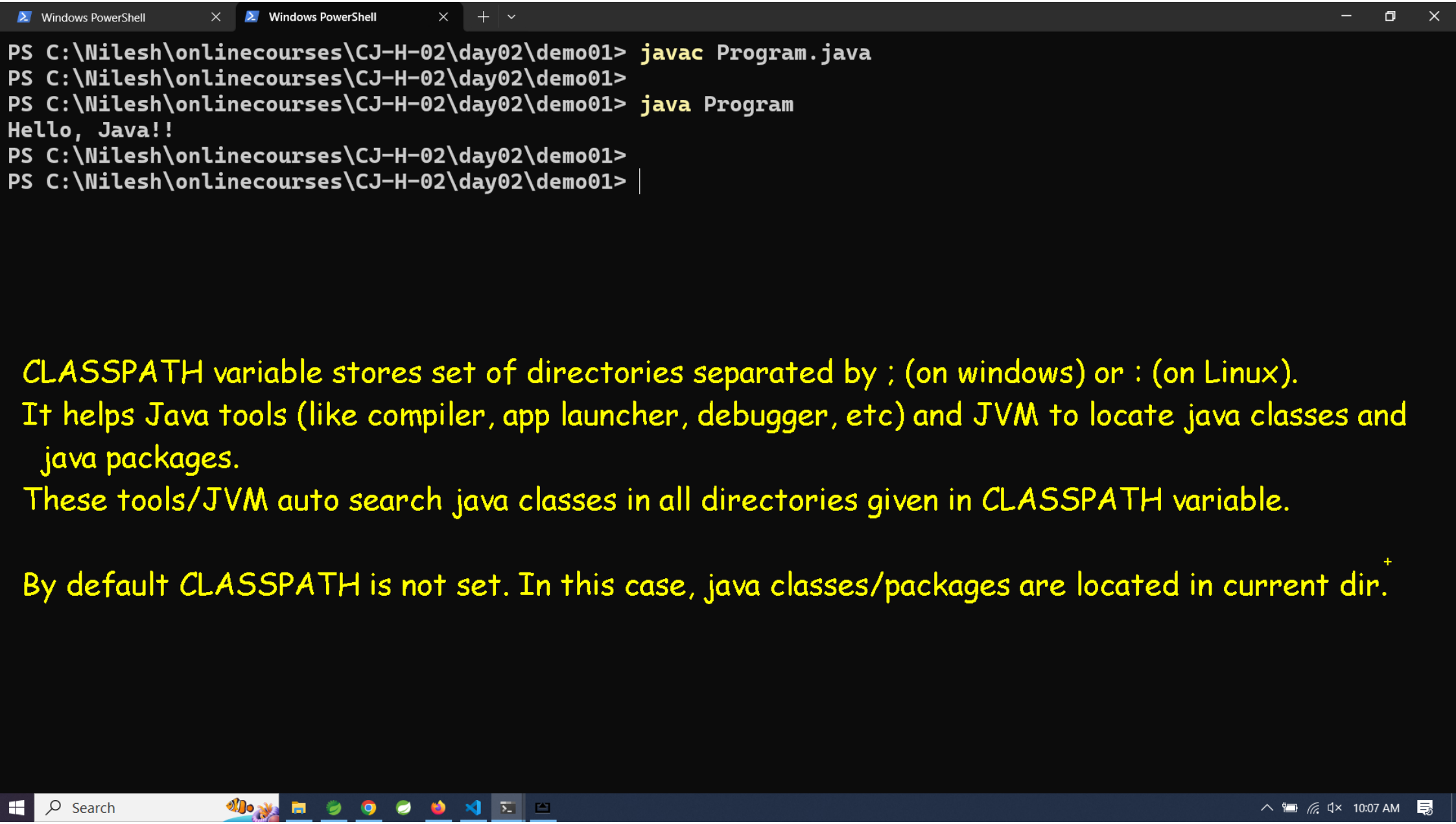


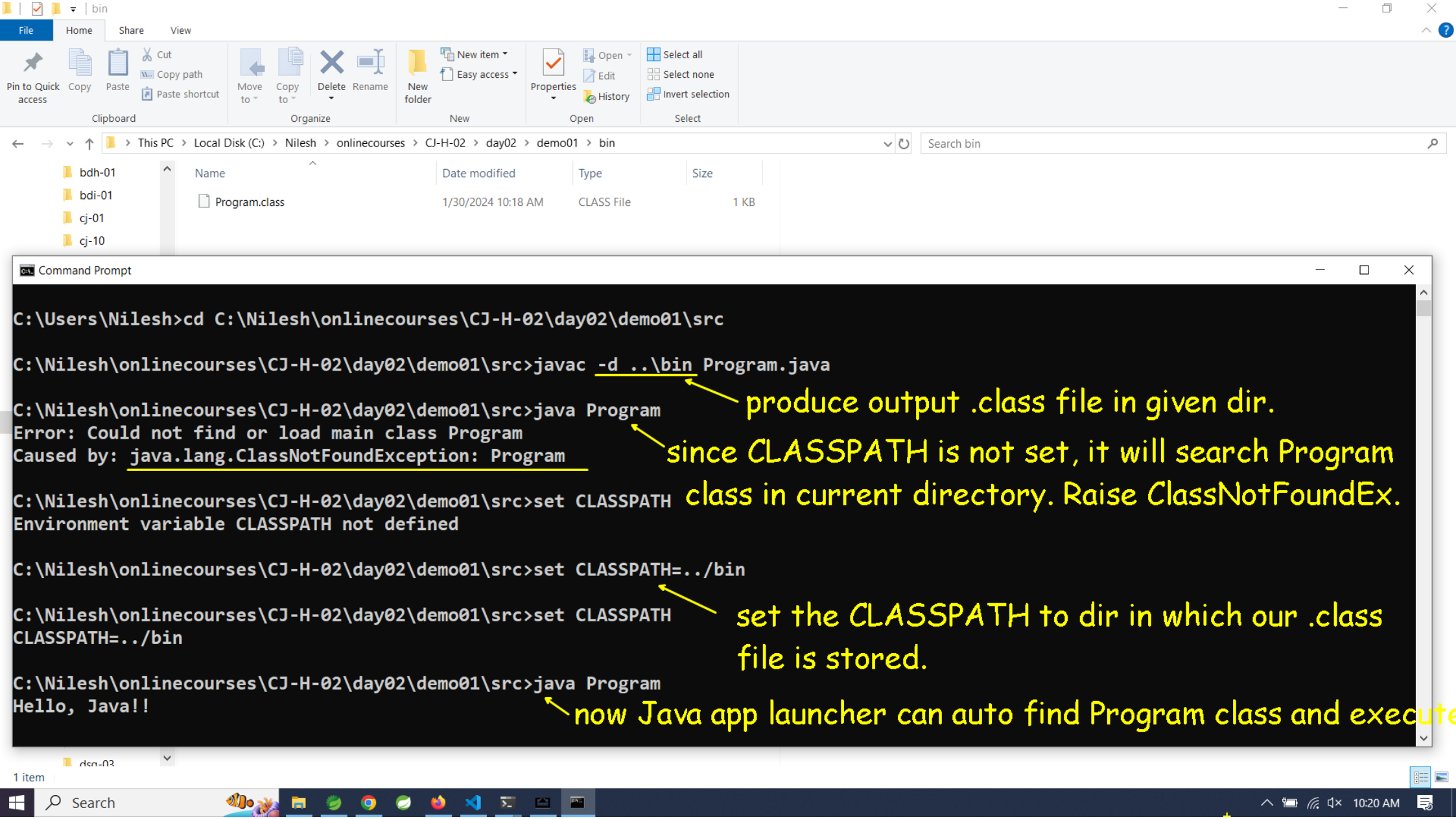
There can be separate main() in each Java class.

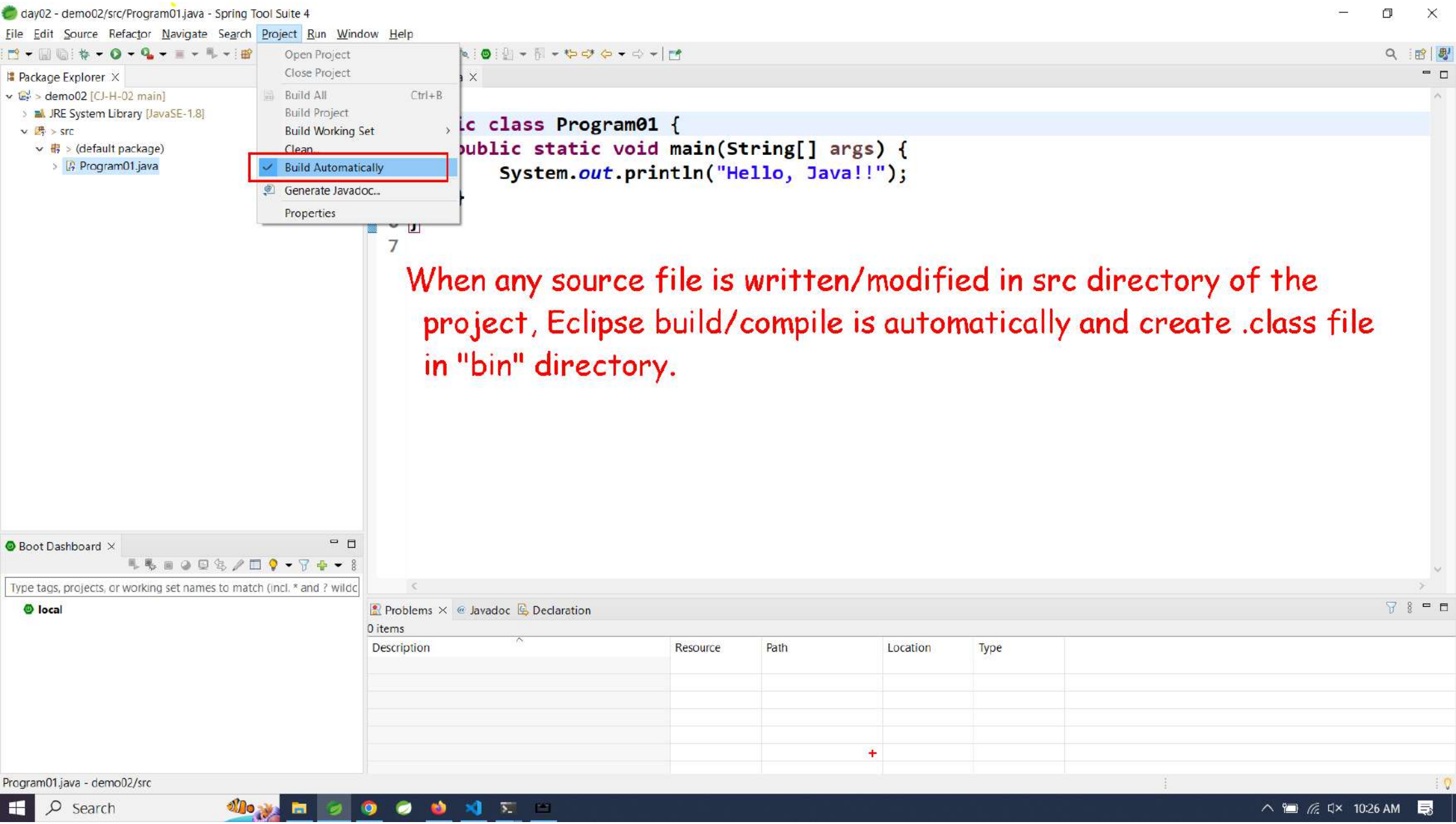
It should be executed with separate "java" cmd.

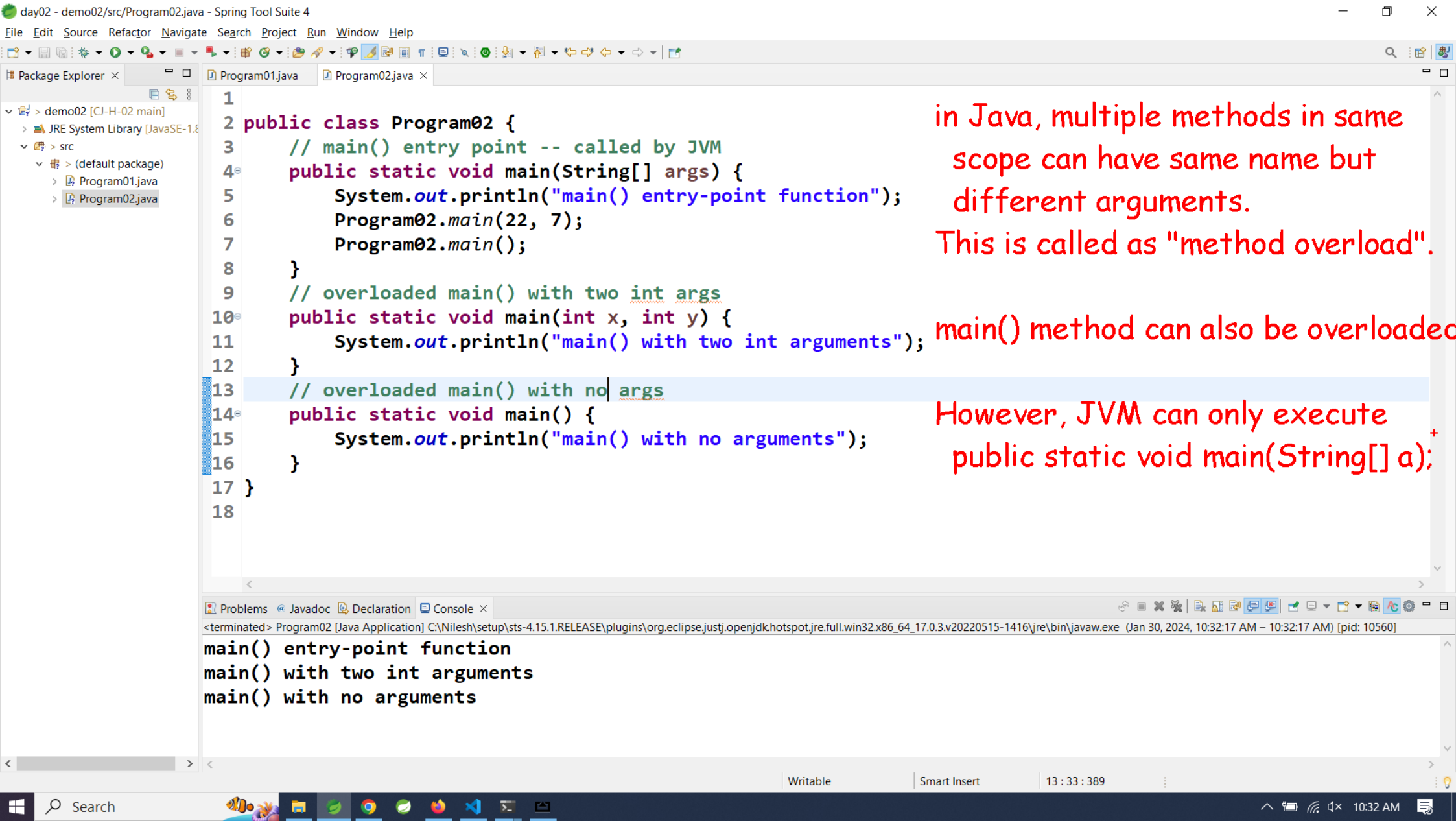

day01
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
This PC › Local Disk (C:) › Nilesh › onlinecourses › CJ-H-02 › day01 ›
.Trash-1000
DRIVERS
Intel
MahaSecure
MinGW
MSOCache
Nilesh
day6
files
internship
Name
Date modified
Type
Size
.metadata 1/29/2024 10:21 AM File folder
first 1/29/2024 10:25 AM File folder
second 1/29/2024 11:38 AM File folder
MyProgram.java 1/29/2024 12:48 PM Java Source File
Program.java 1/29/2024 10:34 AM Java Source File
One .java file can have multiple classes, but max one class can be public.
Windows PowerShell
PS C:\Nilesh\onlinecourses\CJ-H-02\day01> javac MyProgram.java
MyProgram.java:1: error: class MyClass is public, should be declared in a file named MyClass.java
public class MyClass {
^
MyProgram.java:7: error: class YourClass is public, should be declared in a file named YourClass.java
public class YourClass {
^
2 errors
PS C:\Nilesh\onlinecourses\CJ-H-02\day01>
MyProgram.java - Notepad
File Edit Format View Help
error
public class MyClass {
public static void main(String[] args) {
System.out.println("MyClass.main()");
}
}
error
public class YourClass {
public static void main(String[] args) {
System.out.println("YourClass.main()");
}
}
okay
public class MyProgram {
public static void main(String[] args) {
System.out.println("MyProgram.main()");
}
}
Also, name of public class must be same as name of .java file.
Multiple public classes should be written in multiple .java files.
Ln 1, Col 8
80%
Windows (CRLF)
UTF-8
Search
12:50 PM

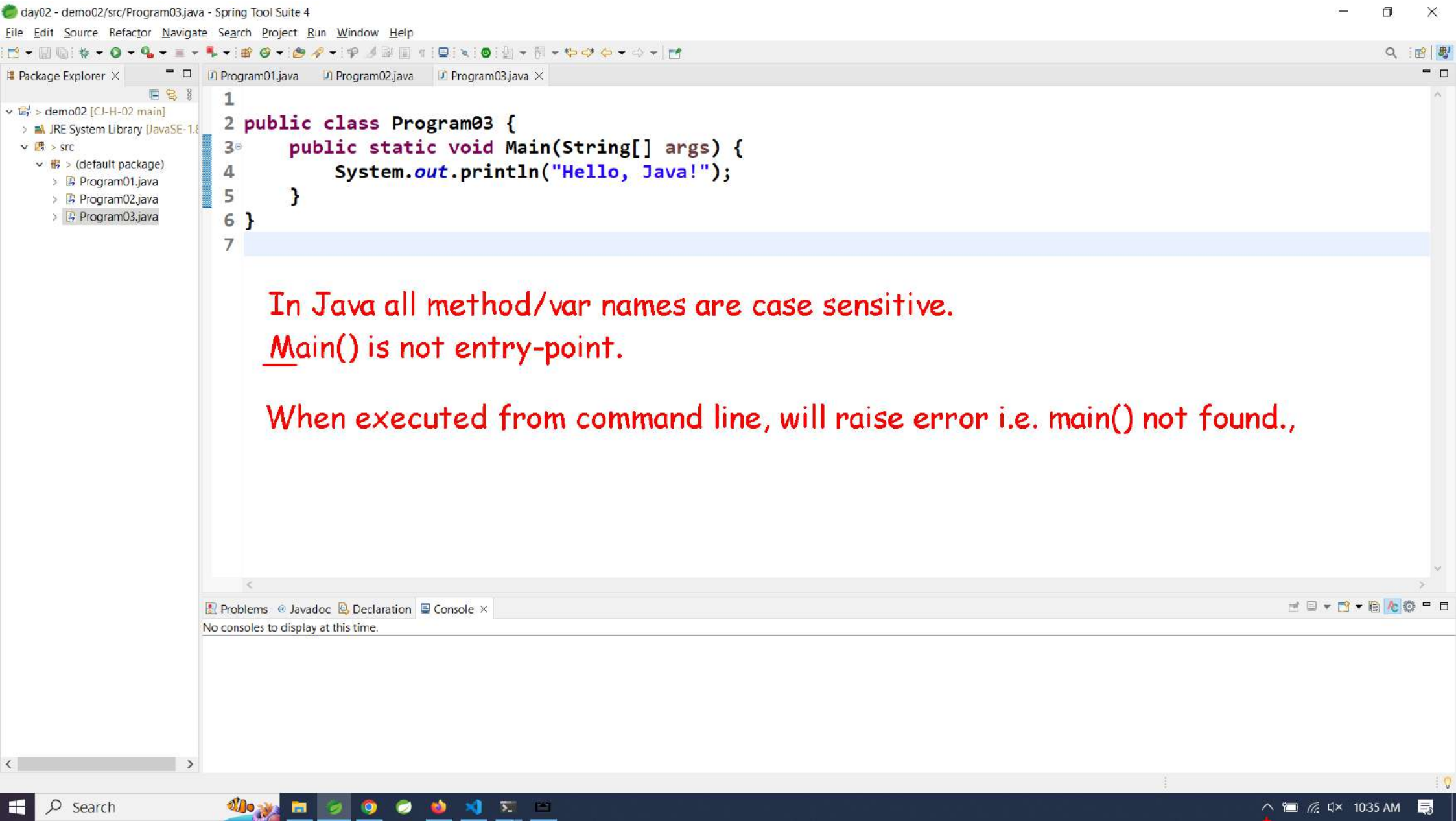

day01
File Home Share View
Pin to Quick access Copy Paste Cut Copy path Paste shortcut
Clipboard
Move to Copy to Delete Rename
Organize
New folder New item Easy access
New
Properties Open Edit History
Open
Select all Select none Invert selection
Select
This PC › Local Disk (C:) › Nilesh › onlinecourses › CJ-H-02 › day01 ›
.Trash-1000
DRIVERS
Intel
MahaSecure
MinGW
MSOCache
Nilesh
day6
files
internship
Name Date modified Type Size
.metadata 1/29/2024 10:21 AM File folder
first 1/29/2024 10:25 AM File folder
second 1/29/2024 11:38 AM File folder
MyClass.class 1/29/2024 12:55 PM CLASS File
MyProgram.class 1/29/2024 12:55 PM CLASS File
MyProgram.java 1/29/2024 12:54 PM Java Source File
Program.java 1/29/2024 10:34 AM Java Source File
YourClass.class 1/29/2024 12:55 PM CLASS File
Windows PowerShell
PS C:\Nilesh\onlinecourses\CJ-H-02\day01> javac MyProgram.java
PS C:\Nilesh\onlinecourses\CJ-H-02\day01>
no error.
MyProgram.java - Notepad
File Edit Format View Help
class MyClass {
public static void main(String[] args) {
System.out.println("MyClass.main()");
}
}
class YourClass {
public static void main(String[] args) {
System.out.println("YourClass.main()");
}
}
only one public class = name same as
public class MyProgram {
file name.
public static void main(String[] args) {
System.out.println("MyProgram.main()");
}
}
Ln 13, Col 3 80% Windows (CRLF) UTF-8
Search
12:55 PM

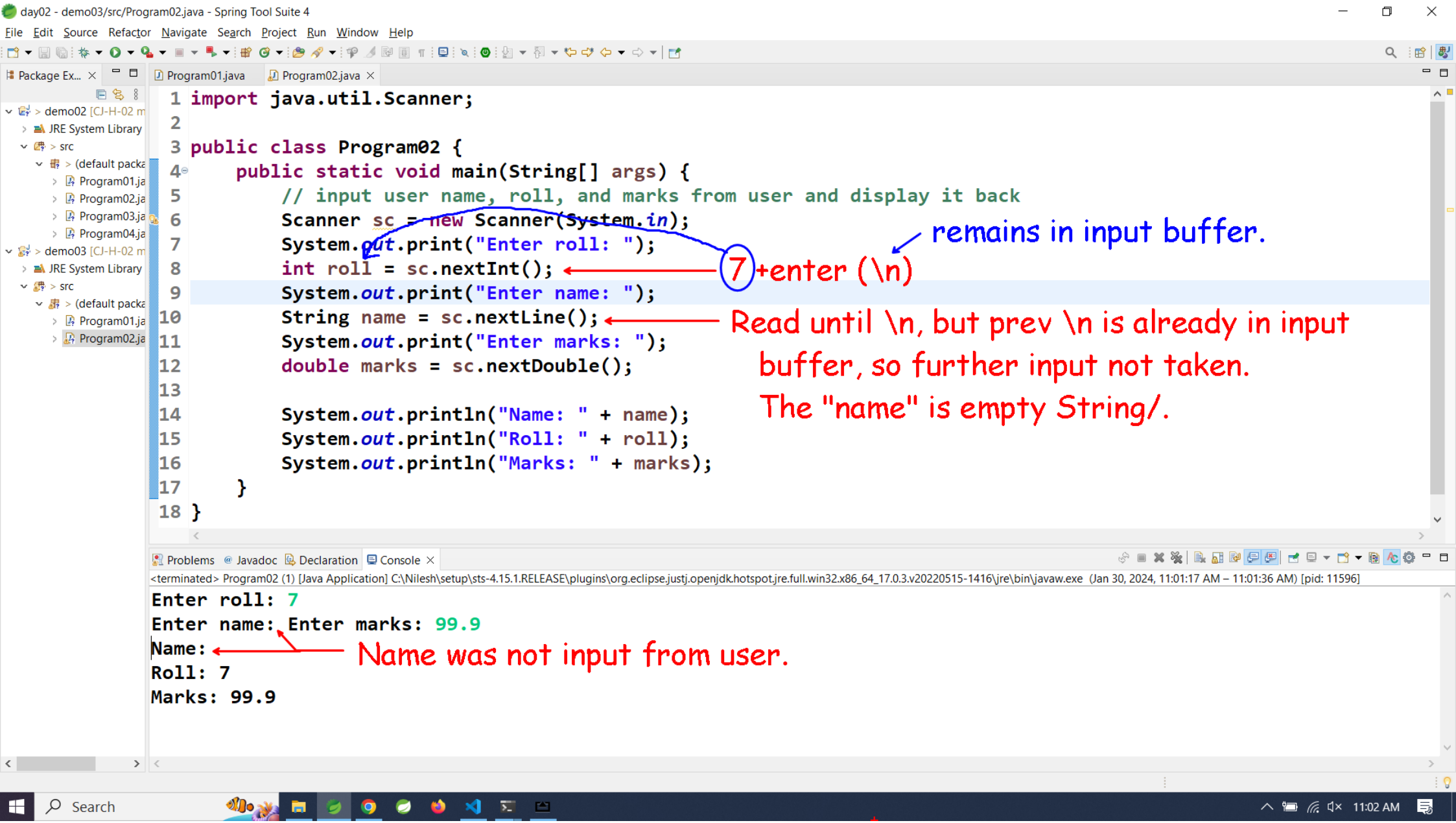

Windows PowerShell
Windows PowerShell
PS C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01> javac Program.java
PS C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01>
PS C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01> java Program
Hello, Java!!
PS C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01>
PS C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01>
CLASSPATH variable stores set of directories separated by ; (on windows) or : (on Linux).
It helps Java tools (like compiler, app launcher, debugger, etc) and JVM to locate java classes and java packages.
These tools/JVM auto search java classes in all directories given in CLASSPATH variable.
By default CLASSPATH is not set. In this case, java classes/packages are located in current dir.
Search
10:07 AM


bin
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
This PC › Local Disk (C:) › Nilesh › onlinecourses › CJ-H-02 › day02 › demo01 › bin
Search bin
bdh-01
bdi-01
cj-01
cj-10
Name
Date modified
Type
Size
Program.class
1/30/2024 10:18 AM
CLASS File
1 KB
Command Prompt
C:\Users\Nilesh>cd C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01\src
C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01\src>javac -d ..\bin Program.java
produce output .class file in given dir.
C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01\src>java Program
Error: Could not find or load main class Program
Caused by: java.lang.ClassNotFoundException: Program
since CLASSPATH is not set, it will search Program class in current directory. Raise ClassNotFoundEx.
C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01\src>set CLASSPATH
Environment variable CLASSPATH not defined
C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01\src>set CLASSPATH=../bin
C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01\src>set CLASSPATH
CLASSPATH=../bin
set the CLASSPATH to dir in which our .class file is stored.
C:\Nilesh\onlinecourses\CJ-H-02\day02\demo01\src>java Program
Hello, Java!!
now Java app launcher can auto find Program class and execute
1 item
Search
10:20 AM


day02 - demo02/src/Program01.java - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Window Help
Open Project
Close Project
Build All Ctrl+B
Build Project
Build Working Set
Clean...
Build Automatically
Generate Javadoc...
Properties
Package Explorer
demo02 [CJ-H-02 main]
JRE System Library [JavaSE-1.8]
src
(default package)
Program01.java
ic class Program01 {
ublic static void main(String[] args) {
System.out.println("Hello, Java!!");
7
When any source file is written/modified in src directory of the project, Eclipse build/compile is automatically and create .class file in "bin" directory.
Boot Dashboard
Type tags, projects, or working set names to match (incl. * and ? wildc
local
Problems
Javadoc
Declaration
0 items
Description
Resource
Path
Location
Type
Program01.java - demo02/src
Search
10:26 AM


day02 - demo02/src/Program02.java - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
demo02 [CJ-H-02 main]
JRE System Library [JavaSE-1.8
src
(default package)
Program01.java
Program02.java
Program01.java
Program02.java
1
2 public class Program02 {
3 // main() entry point -- called by JVM
4 public static void main(String[] args) {
5 System.out.println("main() entry-point function");
6 Program02.main(22, 7);
7 Program02.main();
8 }
9 // overloaded main() with two int args
10 public static void main(int x, int y) {
11 System.out.println("main() with two int arguments");
12 }
13 // overloaded main() with no args
14 public static void main() {
15 System.out.println("main() with no arguments");
16 }
17 }
18
in Java, multiple methods in same scope can have same name but different arguments.
This is called as "method overload".
main() method can also be overloaded
However, JVM can only execute public static void main(String[] a);
Problems Javadoc Declaration Console
<terminated> Program02 [Java Application] C:\Nilesh\setup\sts-4.15.1.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.3.v20220515-1416\jre\bin\javaw.exe (Jan 30, 2024, 10:32:17 AM – 10:32:17 AM) [pid: 10560]
main() entry-point function
main() with two int arguments
main() with no arguments
Writable
Smart Insert
13 : 33 : 389
Search
10:32 AM


day02 - demo02/src/Program03.java - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
demo02 [CJ-H-02 main]
JRE System Library [JavaSE-1.8
src
(default package)
Program01.java
Program02.java
Program03.java
Program01.java
Program02.java
Program03.java
1
2 public class Program03 {
3 public static void Main(String[] args) {
4 System.out.println("Hello, Java!");
5 }
6 }
7
In Java all method/var names are case sensitive.
Main() is not entry-point.
When executed from command line, will raise error i.e. main() not found.,
Problems
Javadoc
Declaration
Console
No consoles to display at this time.
Search
10:35 AM


day02 - demo03/src/Program02.java - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Window Help
Package Ex...
Program01.java
Program02.java
1 import java.util.Scanner;
2
3 public class Program02 {
4 public static void main(String[] args) {
5 // input user name, roll, and marks from user and display it back
6 Scanner sc = new Scanner(System.in);
7 System.out.print("Enter roll: ");
8 int roll = sc.nextInt();
9 System.out.print("Enter name: ");
10 String name = sc.nextLine();
11 System.out.print("Enter marks: ");
12 double marks = sc.nextDouble();
13
14 System.out.println("Name: " + name);
15 System.out.println("Roll: " + roll);
16 System.out.println("Marks: " + marks);
17 }
18 }
7 +enter (\n)
remains in input buffer.
Read until \n, but prev \n is already in input buffer, so further input not taken.
The "name" is empty String/.
Problems Javadoc Declaration Console
<terminated> Program02 (1) [Java Application] C:\Nilesh\setup\sts-4.15.1.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.3.v20220515-1416\jre\bin\javaw.exe (Jan 30, 2024, 11:01:17 AM – 11:01:36 AM) [pid: 11596]
Enter roll: 7
Enter name: Enter marks: 99.9
Name:
Roll: 7
Marks: 99.9
Name was not input from user.
Search
11:02 AM

day02 - demo03/src/Program02.java - Spring Tool Suite 4

File Edit Source Refactor Navigate Search Project Run Window Help

Package Ex... | Program01.java | Program02.java

```
1  import java.util.Scanner;
2
3  public class Program02 {
4      public static void main(String[] args) {
5          // input user name, roll, and marks from user and display it back
6          Scanner sc = new Scanner(System.in);
7          System.out.print("Enter roll: ");
8          int roll = sc.nextInt();
9          System.out.print("Enter name: ");
10         //String name = sc.nextLine();
11         String name = sc.next();
12         System.out.print("Enter marks: ");
13         double marks = sc.nextDouble();
14
15         System.out.println("Name: " + name);
16         System.out.println("Roll: " + roll);
17         System.out.println("Marks: " + marks);
18     }
```

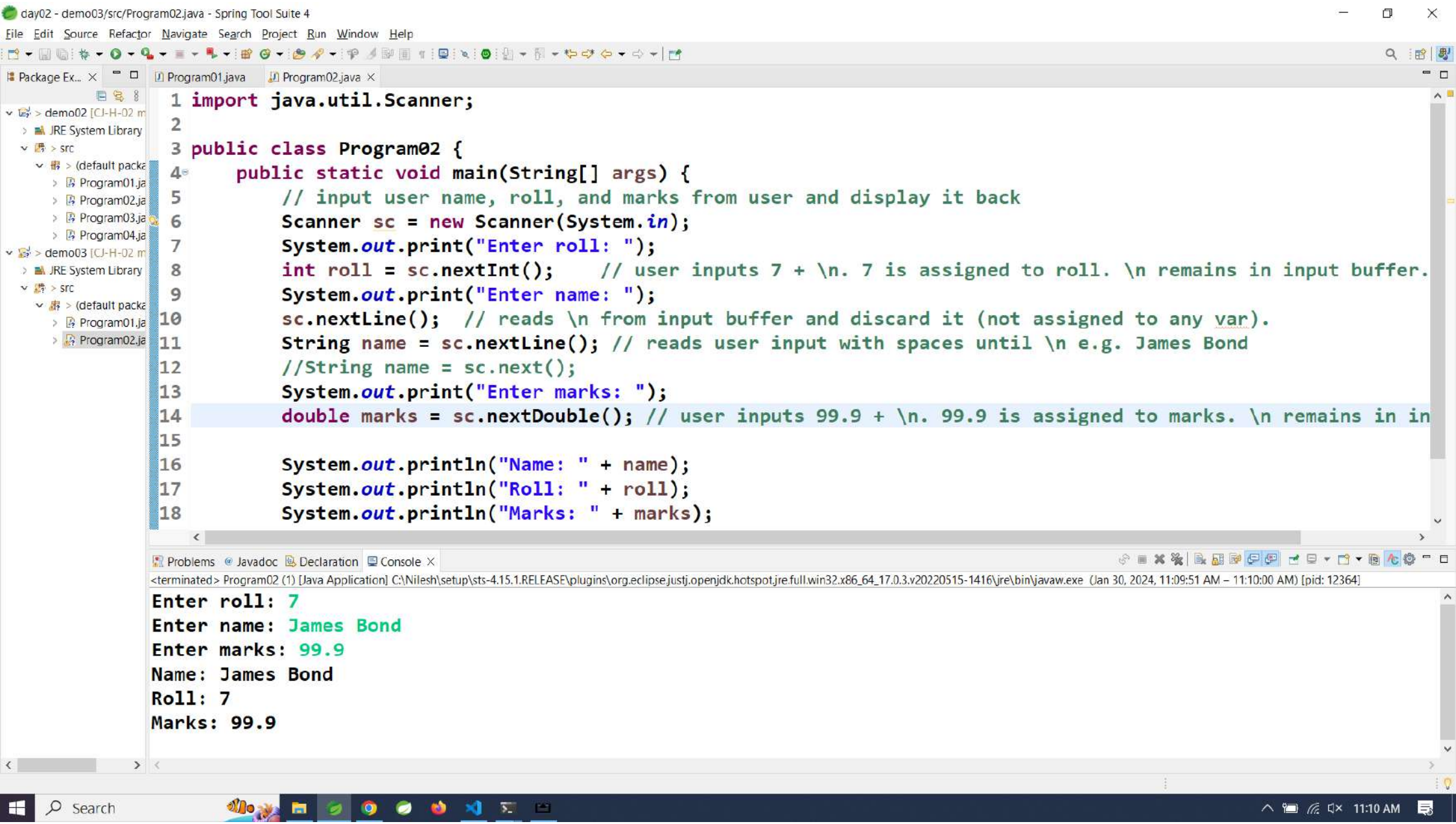
Doesn't skip due to \n,
But doesn't input multi-word string
(separated by space).

Problems | Javadoc | Declaration | Console

<terminated> Program02 (1) [Java Application] C:\Nilesh\setup\sts-4.15.1.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.3.v20220515-1416\jre\bin\javaw.exe (Jan 30, 2024, 11:06:19 AM – 11:06:44 AM) [pid: 13772]

```
Enter roll: 7
Enter name: JamesBond
Enter marks: 99.9
Name: JamesBond
Roll: 7
Marks: 99.9
```

Search 11:06 AM


day02 - demo03/src/Program02.java - Spring Tool Suite 4
File Edit Source Refactor Navigate Search Project Run Window Help
Package Ex...
Program01.java
Program02.java
demo02 [CJ-H-02 m
JRE System Library
src
(default packa
Program01.ja
Program02.ja
Program03.ja
Program04.ja
demo03 [CJ-H-02 m
JRE System Library
src
(default packa
Program01.ja
Program02.ja
1 import java.util.Scanner;
2
3 public class Program02 {
4 public static void main(String[] args) {
5 // input user name, roll, and marks from user and display it back
6 Scanner sc = new Scanner(System.in);
7 System.out.print("Enter roll: ");
8 int roll = sc.nextInt(); // user inputs 7 + \n. 7 is assigned to roll. \n remains in input buffer.
9 System.out.print("Enter name: ");
10 sc.nextLine(); // reads \n from input buffer and discard it (not assigned to any var).
11 String name = sc.nextLine(); // reads user input with spaces until \n e.g. James Bond
12 //String name = sc.next();
13 System.out.print("Enter marks: ");
14 double marks = sc.nextDouble(); // user inputs 99.9 + \n. 99.9 is assigned to marks. \n remains in in
15
16 System.out.println("Name: " + name);
17 System.out.println("Roll: " + roll);
18 System.out.println("Marks: " + marks);
Problems Javadoc Declaration Console
<terminated> Program02 (1) [Java Application] C:\Nilesh\setup\sts-4.15.1.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.3.v20220515-1416\jre\bin\javaw.exe (Jan 30, 2024, 11:09:51 AM – 11:10:00 AM) [pid: 12364]
Enter roll: 7
Enter name: James Bond
Enter marks: 99.9
Name: James Bond
Roll: 7
Marks: 99.9
Search
11:10 AM

File Edit Selection View Go Run Terminal Help

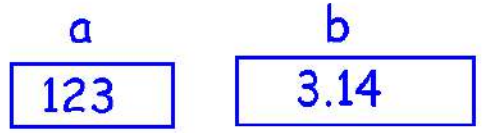
private

day01.md | day02.md | classwork.md U | day03.md

day02.md > # Core Java > ## Language Fundamentals > ### Data types

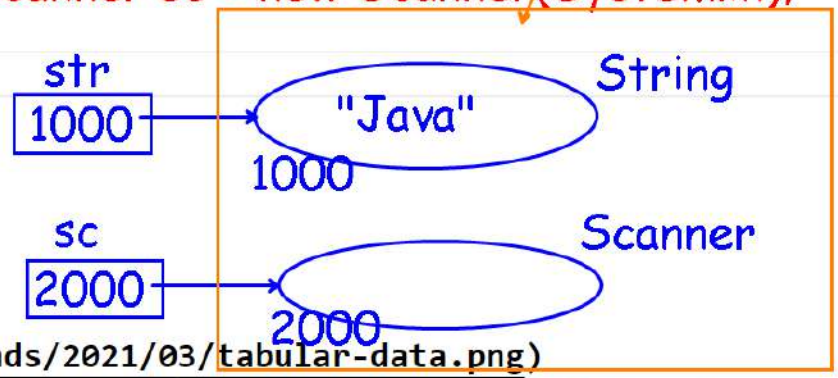
```
* Java is strictly type checked language.
* In java, data types are classified as:
    * Primitive types or Value types
    * Non-primitive types or Reference types
    ```
    Data types
        |- Primitive types (Value types)
        | |- Boolean: boolean
        | |- Character: char
        | |- Integral: byte, short, int, long
        | |- Floating-point: float, double
        |
        |- Non-Primitive types (Reference types)
                |- class e.g. String, Scanner
                |- interface
                |- enum
                |- Array
    ```
* ![Data Types](https://tutorialshut.com/wp-content/uploads/2021/03/tabular-data.png)
* Widening: We can convert state of object of narrower type into wider type. it is called as "widening".
    ```Java
    int num1 = 10;
```

int a = 123;
double b = 3.14;



Actual objects always in Heap.

String str = "Java";
Scanner sc = new Scanner(System.in);

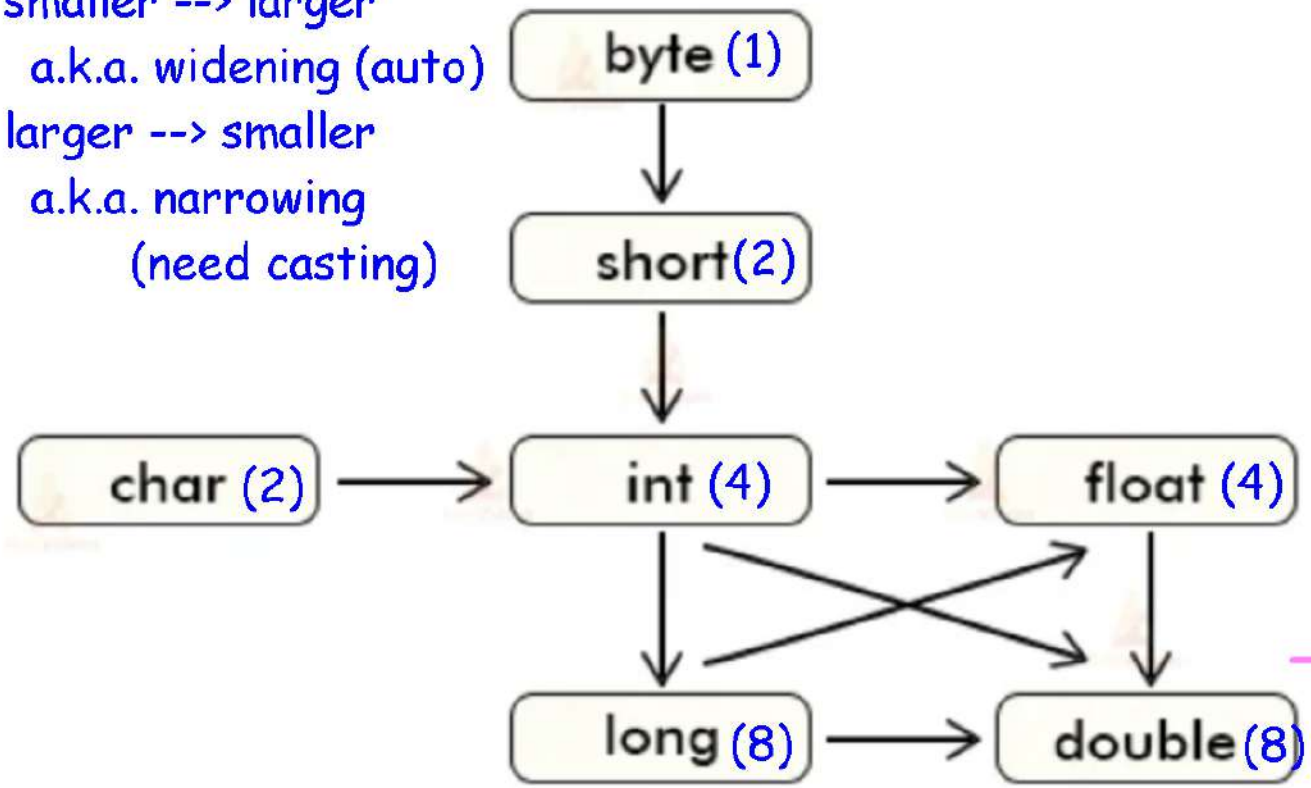


main* ⊗0 ⚠0 0 Ln 293, Col 49 Spaces: 4 UTF-8 CRLF Markdown

Search 11:40 AM
```

- Rule 1: Arithmetic operation involving byte, short automatically promoted to int.
- Rule 2: Arithmetic operation involving int and long promoted to long.
- Rule 3: Arithmetic operation involving float and long promoted to float.
- Rule 4: Arithmetic operation involving double and any other type promoted to double.

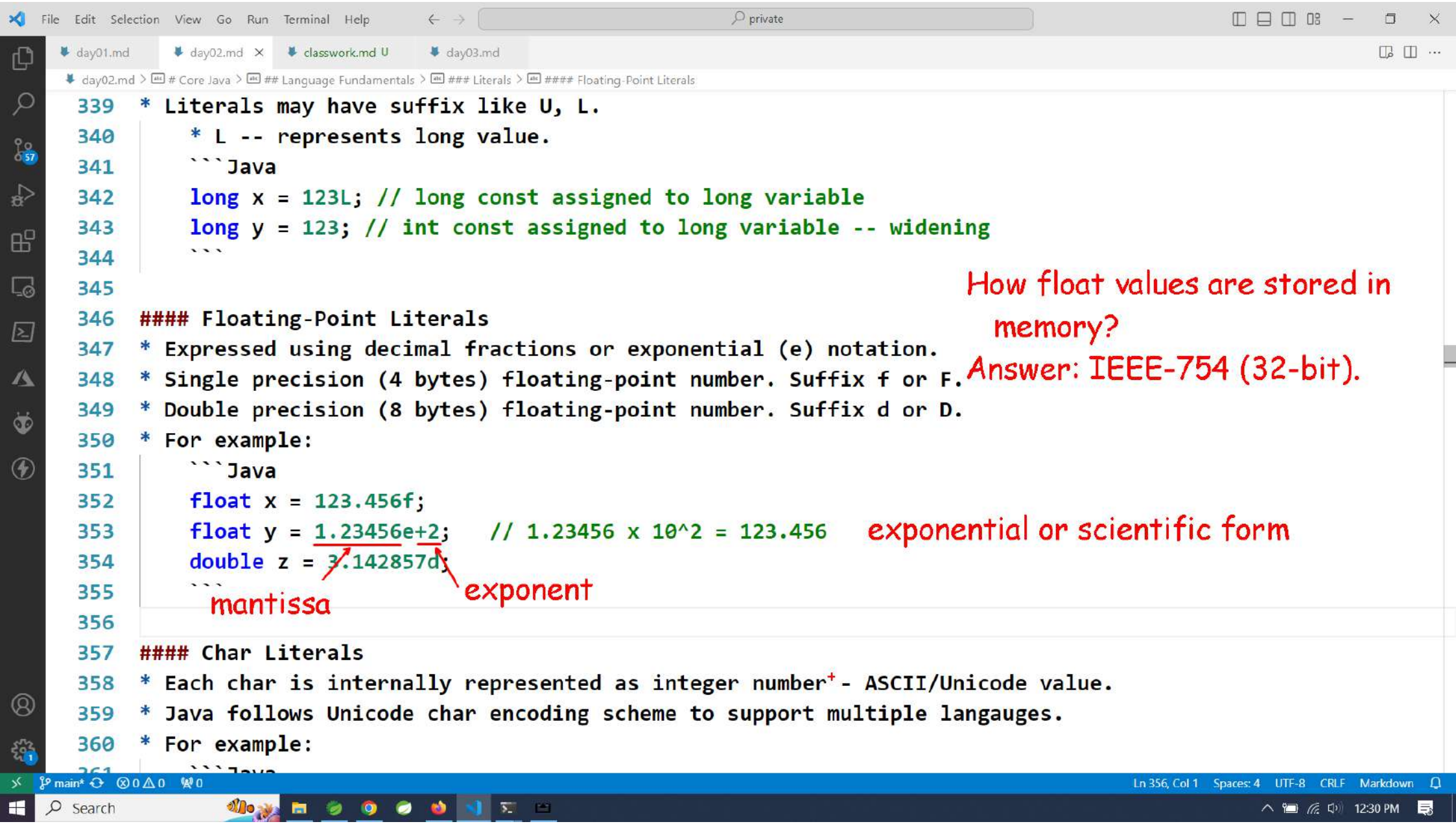
smaller --> larger
a.k.a. widening (auto)
larger --> smaller
a.k.a. narrowing
(need casting)



These conversions (shown by arrow) are supported directly (i.e. no casting is required).

The reverse converions need explicit casting.

```
int a = 65;
short b = a; // error
short b = (short) a; // okay
short c = 12;
int d = c; // okay
```


File Edit Selection View Go Run Terminal Help
private
day01.md
day02.md
classwork.md U
day03.md
day02.md > # Core Java > ## Language Fundamentals > ### Literals > #### Floating-Point Literals
339 * Literals may have suffix like U, L.
340 * L -- represents long value.
341 ```Java
342 long x = 123L; // long const assigned to long variable
343 long y = 123; // int const assigned to long variable -- widening
344 ```
345
346 #### Floating-Point Literals
347 * Expressed using decimal fractions or exponential (e) notation.
348 * Single precision (4 bytes) floating-point number. Suffix f or F.
349 * Double precision (8 bytes) floating-point number. Suffix d or D.
350 * For example:
351 ```Java
352 float x = 123.456f;
353 float y = 1.23456e+2; // 1.23456 x 10^2 = 123.456
354 double z = 3.142857d;
355 ```
356
357 #### Char Literals
358 * Each char is internally represented as integer number - ASCII/Unicode value.
359 * Java follows Unicode char encoding scheme to support multiple langauges.
360 * For example:
How float values are stored in memory?
Answer: IEEE-754 (32-bit).
exponential or scientific form
mantissa
exponent
main* 0 0 0
Ln 356, Col 1 Spaces: 4 UTF-8 CRLF Markdown
Search
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