جامعة التنمية البشرية
UNIVERSITY OF HUMAN DEVELOPMENT

COMPUTER PROGRAMMING CONCEPTS

CS&IT 1101
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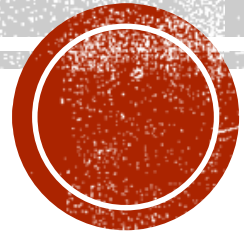
LAB 2:HOW TO INSTALL AND GET STARTED WITH JAVA PROGRAMMING



OUTLINES

1. IDE
2. Source Code Editor
3. NetBeans
4. Start First Project

INTEGRATED DEVELOPMENT ENVIRONMENT (IDE)

- An integrated development environment (IDE) is a software application that provides comprehensive facilities to computer programmers for software development.
- An IDE normally comprises of a source code editor, compiler, linker, interpreter, debugger & GUI builder ; termed as components.
- Some of the IDEs are NetBeans IDE, Eclipse IDE ,Microsoft Visual Studio ,Turbo C / C++ Builder etc.

WHAT YOU NEED FROM A JAVA IDE

- At a minimum, you would hope that your IDE supports Java 8
- You'd also want it to support the major application servers and the most popular web frameworks
- you would hope that your Java IDE lets you edit, build, debug, and test your systems with ease

SOURCE CODE EDITOR

- A source code editor is a text editor program designed specifically for editing source code of computer programs by programmers.

THE TOP FREE IDE FOR JAVA CODING, DEVELOPMENT & PROGRAMMING

1. NetBeans.
2. Eclipse. Eclipse is another free **Java IDE** for developers and programmers. ...
3. IntelliJ IDEA Community Edition. ...
4. Android Studio. ...
5. Enide Studio
6. BlueJ. ...
7. jEdit. ...
8. jGRASP.

WHY NETBEANS?

- NetBeans is an open-source integrated development environment (IDE) for developing with Java, PHP, C++, HTML5 and other programming languages.
- NetBeans is also referred to as a platform of modular components used for developing Java desktop applications.
- NetBeans is coded in Java and runs on most operating systems with a Java Virtual Machine (JVM), including Solaris, Mac OS, and Linux.

WHAT IS JDK……?

- JDK stand for java development kit
- It is used to build and develop the java program
- It internally contains JRE
- It contains the compiler and debugger
- It contains all the related set of libraries and files to build and compile the java program.
- Without JDK we can’t build any java program

WHAT IS JRE…..?

- JRE stands for Java Runtime environment
- JRE is the responsible unit to run the java program
- Without JRE we can't run java program (JDK is used to build java program, where as JRE is used to run java program).
- JRE contains JVM
- JRE contains all the inbuilt packages and library files (lang , io , util etc all packages are present in JRE)

TOOLS WE WILL NEED

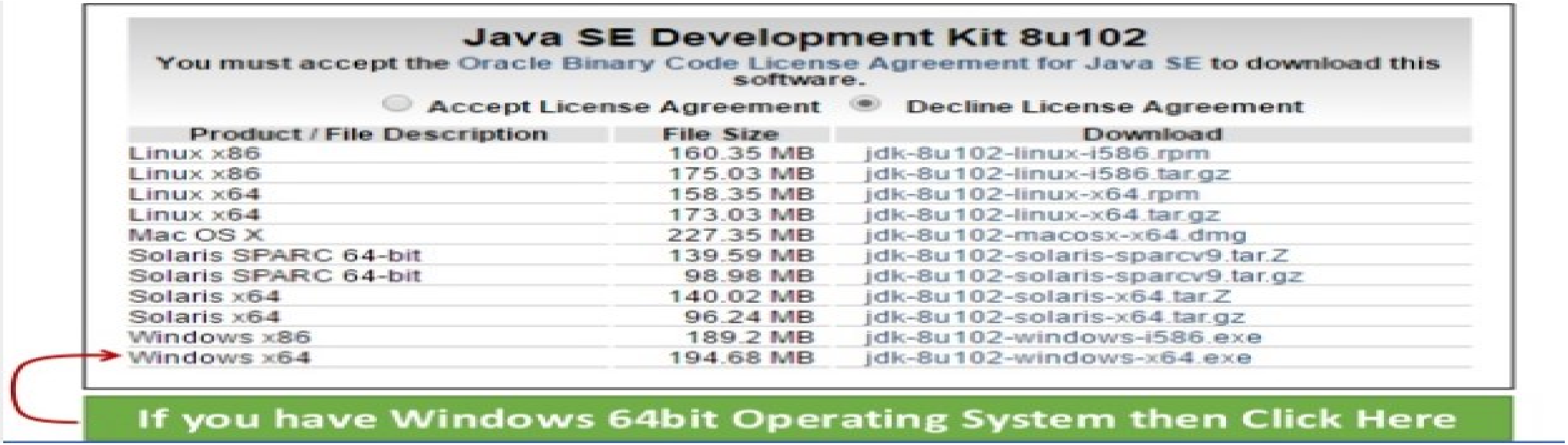
- For this course we will need the following software's:
- Windows xp/7/8/10 operating system
- Java jdk 8
- NetBeans 8.1 or 8.2

DOWNLOAD JAVA DEVELOPMENT KIT

- Download Java SE Development Kit 8 According to your Operating System architecture (32bit or 64bit).
- https://www.oracle.com/technetwork/java/javase/downloads/index.html
- We can also download JDK from any site with latest version probably version 8 is latest.

DOWNLOAD JAVA DEVELOPMENT KIT

- When you go JDK official site link is given in previous slide then you can see this type of webpage. Now download JDK According to your Operating System type



DOWNLOAD JAVA DEVELOPMENT KIT

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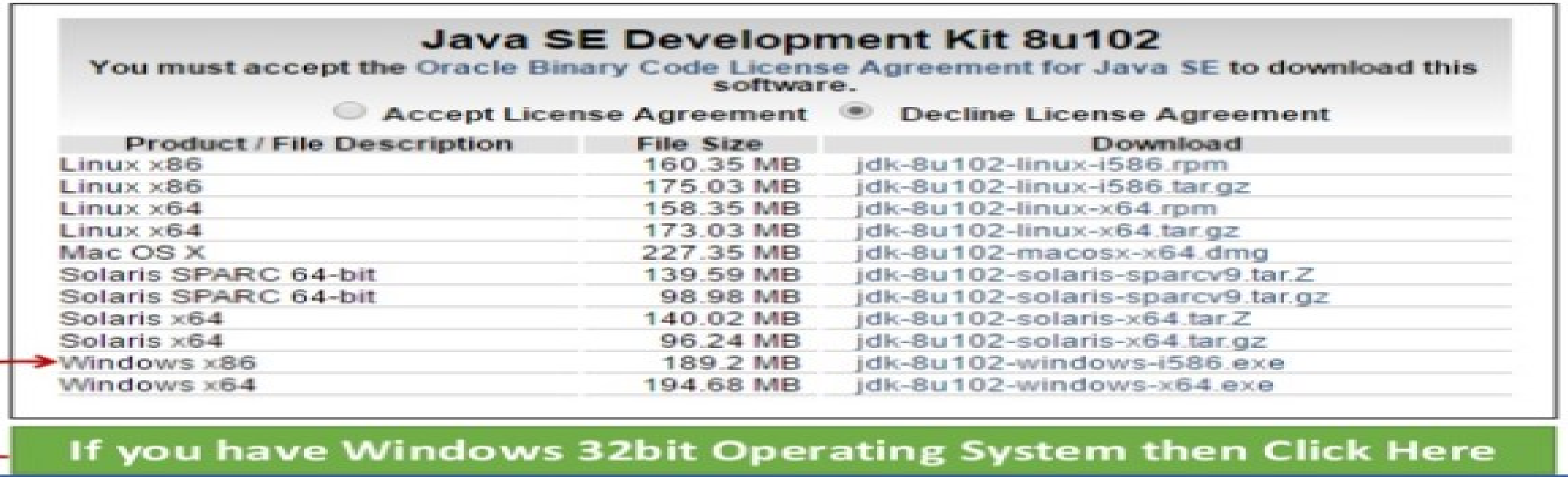


Java SE Development Kit 8u102

You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

○ Accept License Agreement ◉ Decline License Agreement

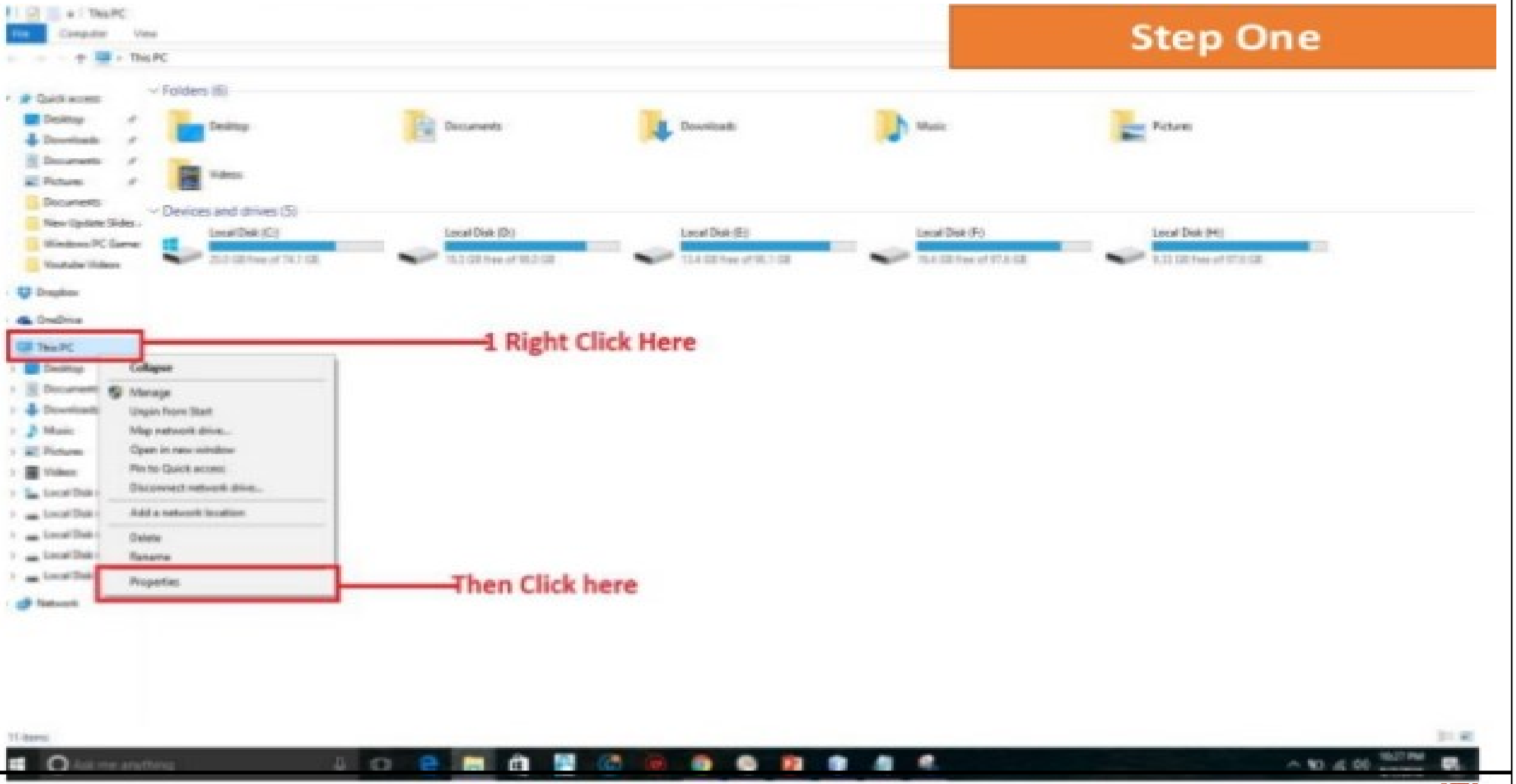
Product / File Description	File Size	Download
Linux x86	160.35 MB	jdk-8u102-linux-i586.rpm
Linux x86	175.03 MB	jdk-8u102-linux-i586.tar.gz
Linux x64	158.35 MB	jdk-8u102-linux-x64.rpm
Linux x64	173.03 MB	jdk-8u102-linux-x64.tar.gz
Mac OS X	227.35 MB	jdk-8u102-macosx-x64.dmg
Solaris SPARC 64-bit	139.59 MB	jdk-8u102-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	98.98 MB	jdk-8u102-solaris-sparcv9.tar.gz
Solaris x64	140.02 MB	jdk-8u102-solaris-x64.tar.Z
Solaris x64	96.24 MB	jdk-8u102-solaris-x64.tar.gz
Windows x86	189.2 MB	jdk-8u102-windows-i586.exe
Windows x64	194.68 MB	jdk-8u102-windows-x64.exe

If you have Windows 32bit Operating System then Click Here

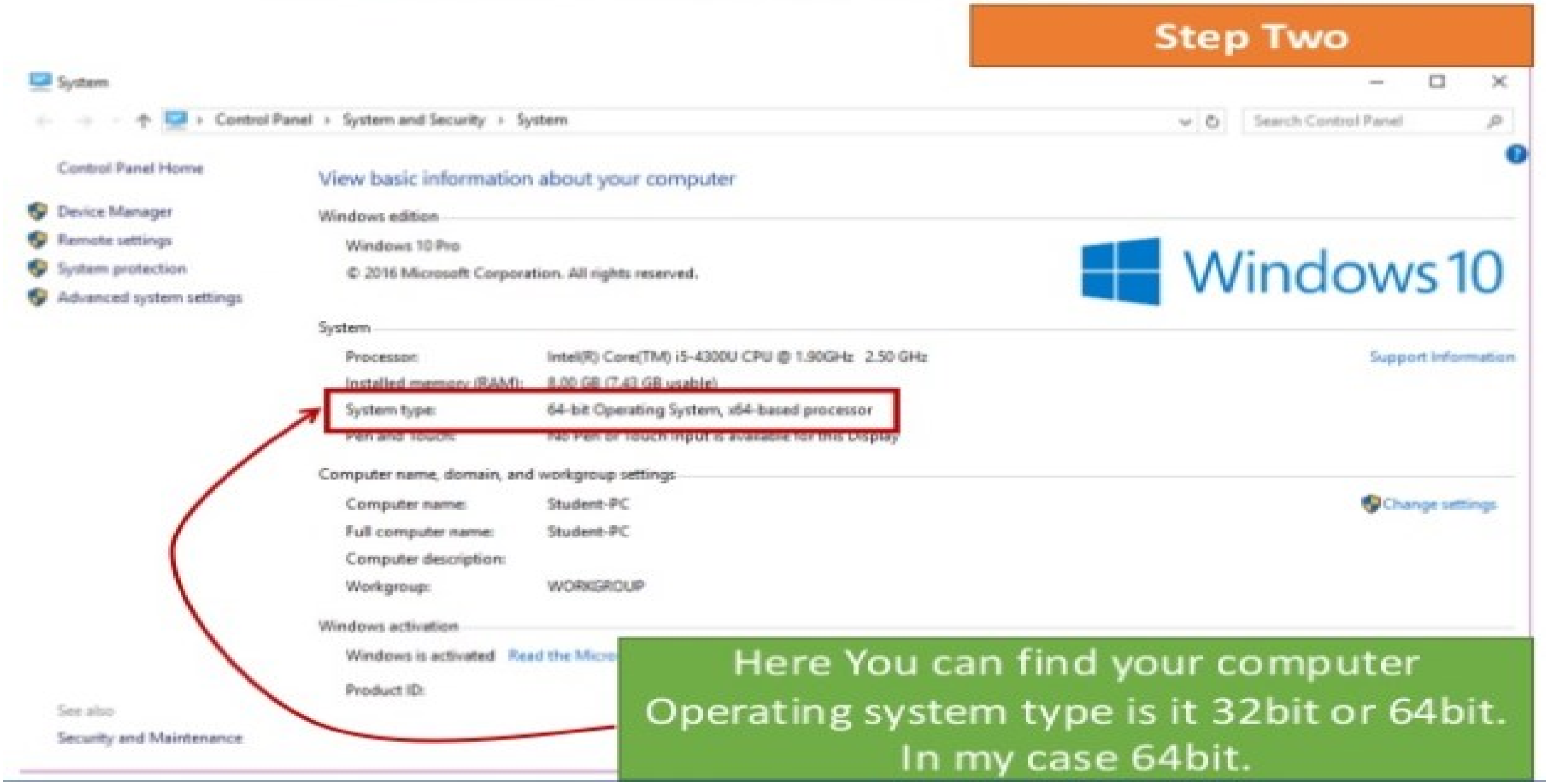
PLEASE NOTE

- If you don't know about you Operating System Architecture is it 32bit or 64bit so follow me to find this
- Go on my computer icon and right click, after that click on properties option

Step One



Step Two


System
Control Panel › System and Security › System
Search Control Panel
Control Panel Home
Device Manager
Remote settings
System protection
Advanced system settings
View basic information about your computer
Windows edition
Windows 10 Pro
© 2016 Microsoft Corporation. All rights reserved.
Windows 10
System
Processor: Intel(R) Core(TM) i5-4300U CPU @ 1.90GHz 2.50 GHz
Support Information
Installed memory (RAM): 8.00 GB (7.43 GB usable)
System type: 64-bit Operating System, x64-based processor
Pen and Touch: No Pen or Touch Input is available for this Display
Computer name, domain, and workgroup settings
Computer name: Student-PC
Change settings
Full computer name: Student-PC
Computer description:
Workgroup: WORKGROUP
Windows activation
Windows is activated
Product ID:
See also
Security and Maintenance
Here You can find your computer
Operating system type is it 32bit or 64bit.
In my case 64bit.

NOW DOWNLOAD NETBEANS 8.1 OR 8.2

- For Download NetBeans Go this Site http://netbeans.org/downloads/index.html.
- When you go to NetBeans Official Site then you can see this type of webpage, Then you can simply download All Bundles Version. Follow me

NetBeans IDE Download Bundles

Supported technologies *	Java SE	Java EE	HTML5/JavaScript	PHP	C/C++	All
NetBeans Platform SDK	●	●				●
Java SE	●	●				●
Java FX	●	●				●
Java EE		●				●
Java ME						●
HTML5/JavaScript		●	●	●		●
PHP			●	●		●
C/C++					●	●
Groovy						●
Java Card™ 3 Connected						●
Bundled servers						
GlassFish Server Open Source Edition 4.1.1		●				●
Apache Tomcat 8.0.27		●				●
	Download	Download	Download x86 Download x64	Download x86 Download x64	Download x86 Download x64	Download
	Free, 95 MB	Free, 192 MB	Free, 104 - 107 MB	Free, 104 - 107 MB	Free, 106 - 110 MB	Free, 215 MB

Simply Click here for download. Don't Worry about 32bit and 64bit because this bundle contain both setup of 32bits and 64bits

INSTALLATION PROCESS

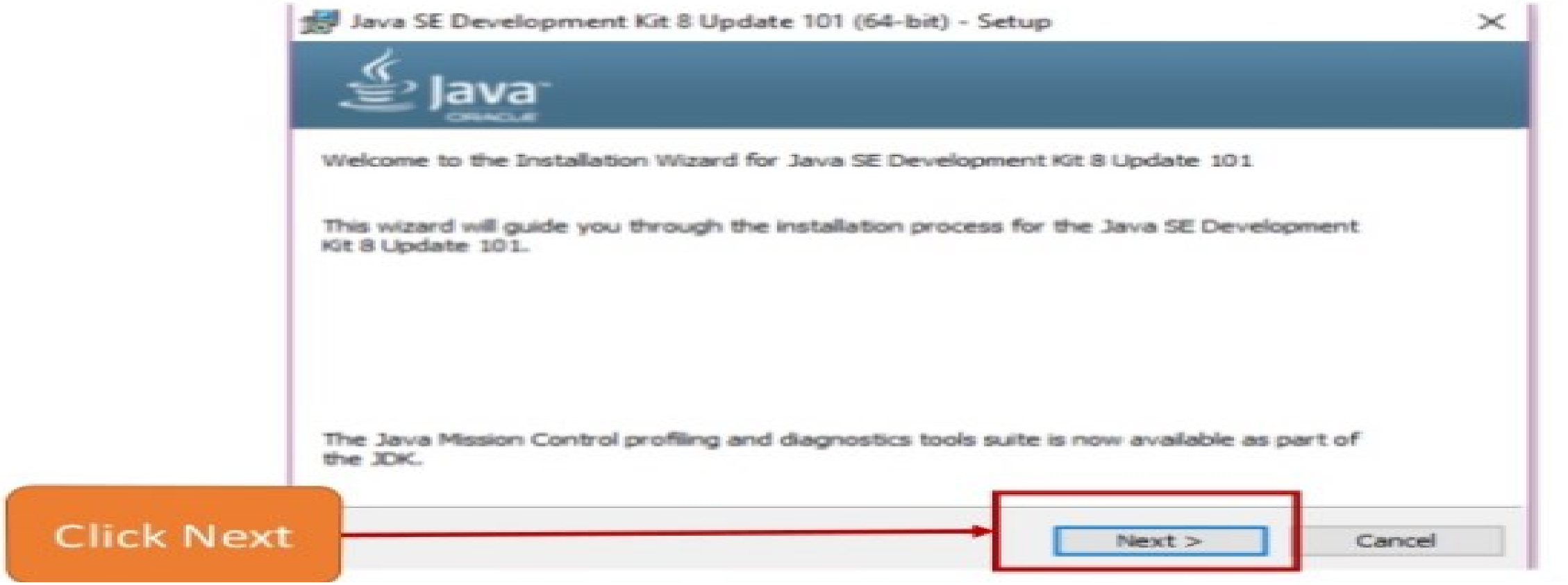
- After Download you must have these two Software's Setup

INSTALLATION OF JDK

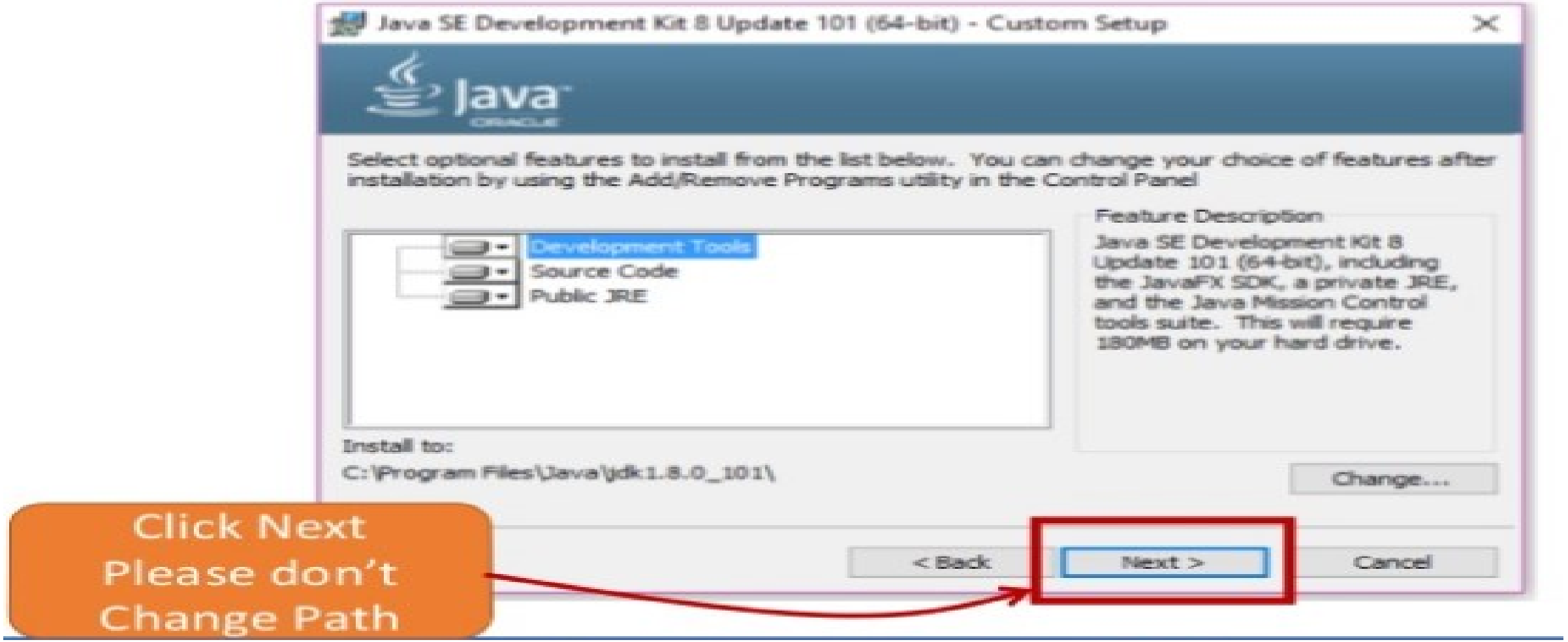
- First install Java Development Kit (JDK)

INSTALLATION OF JDK

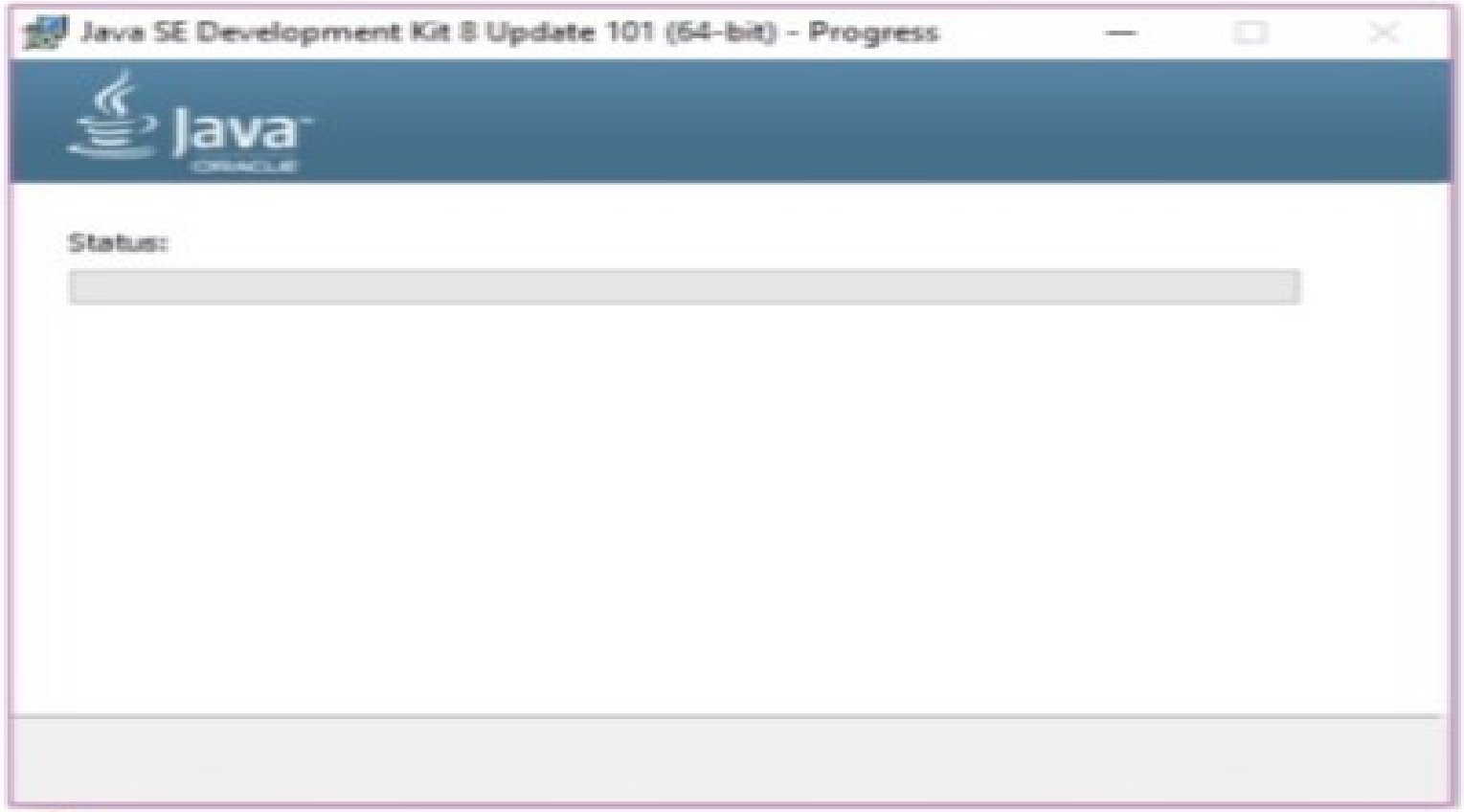
- Then you can see this type of screen



INSTALLATION OF JDK



INSTALLATION OF JDK



Wait For Installation

INSTALLATION OF JDK

Some More Wait

INSTALLATION OF JDK

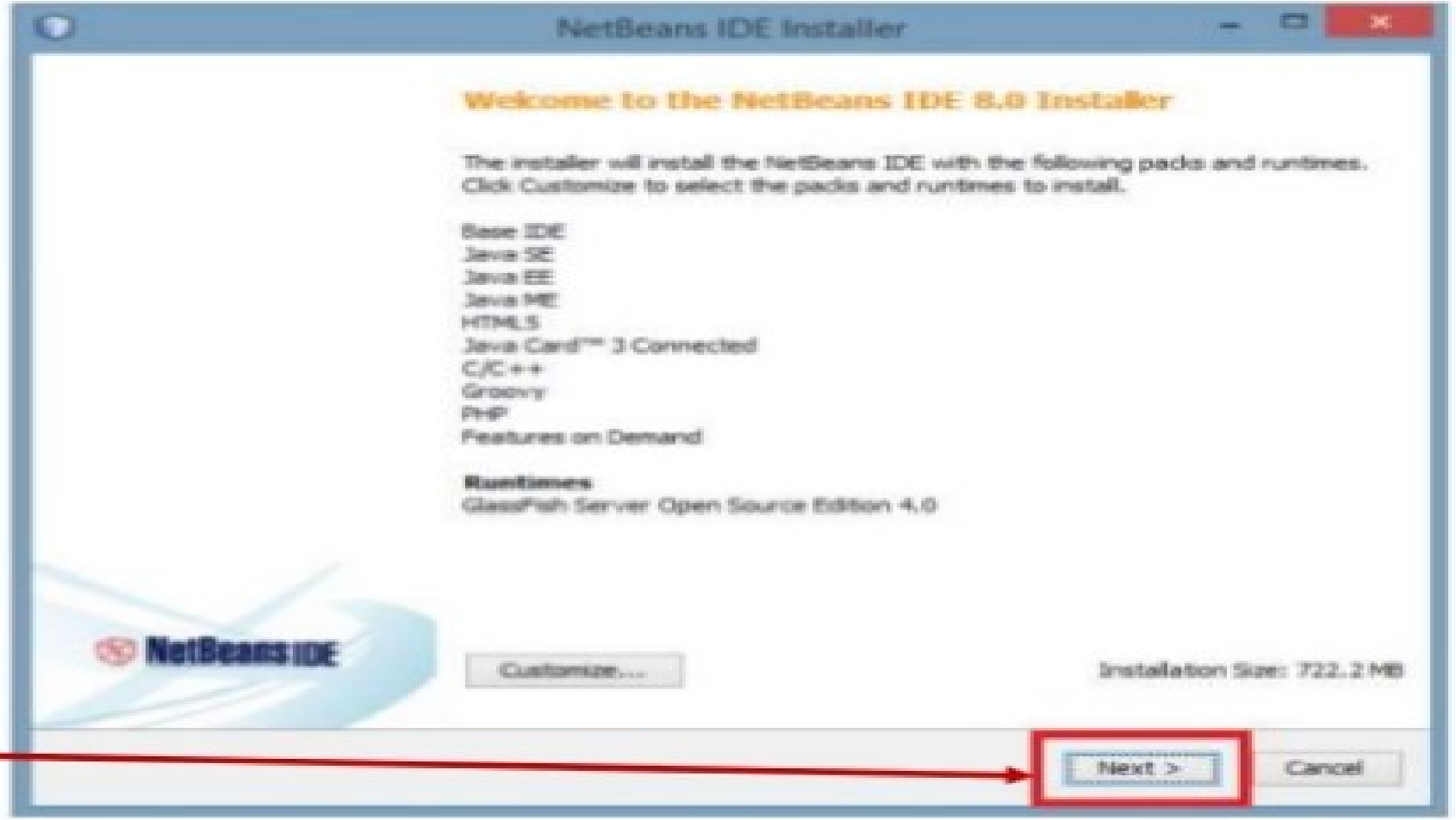
INSTALLATION OF JDK

Java Development Kit Installation Completed.!

INSTALLATION OF NETBEANS

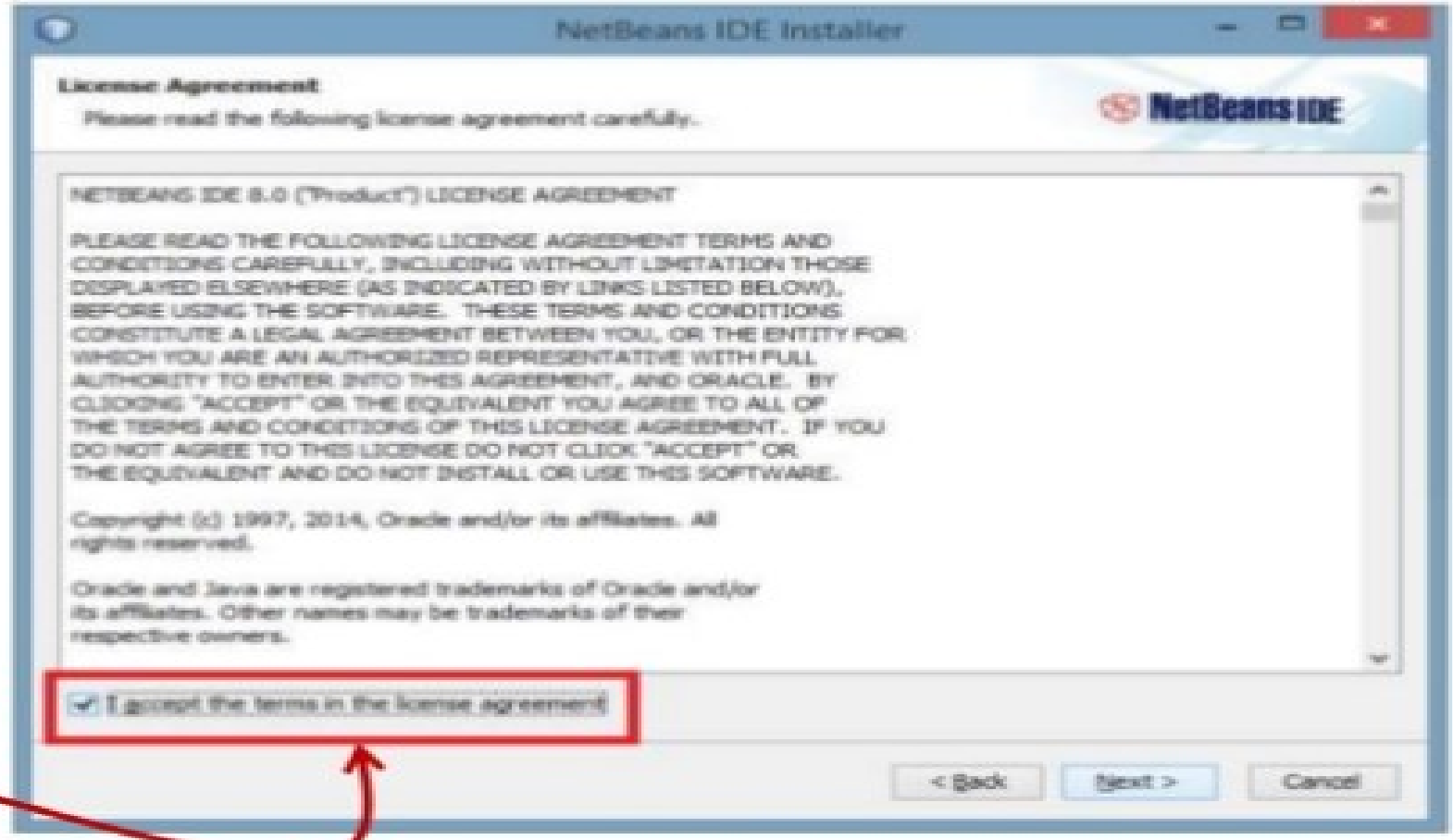
- Secondly now we install NetBeans

INSTALLATION OF NETBEANS



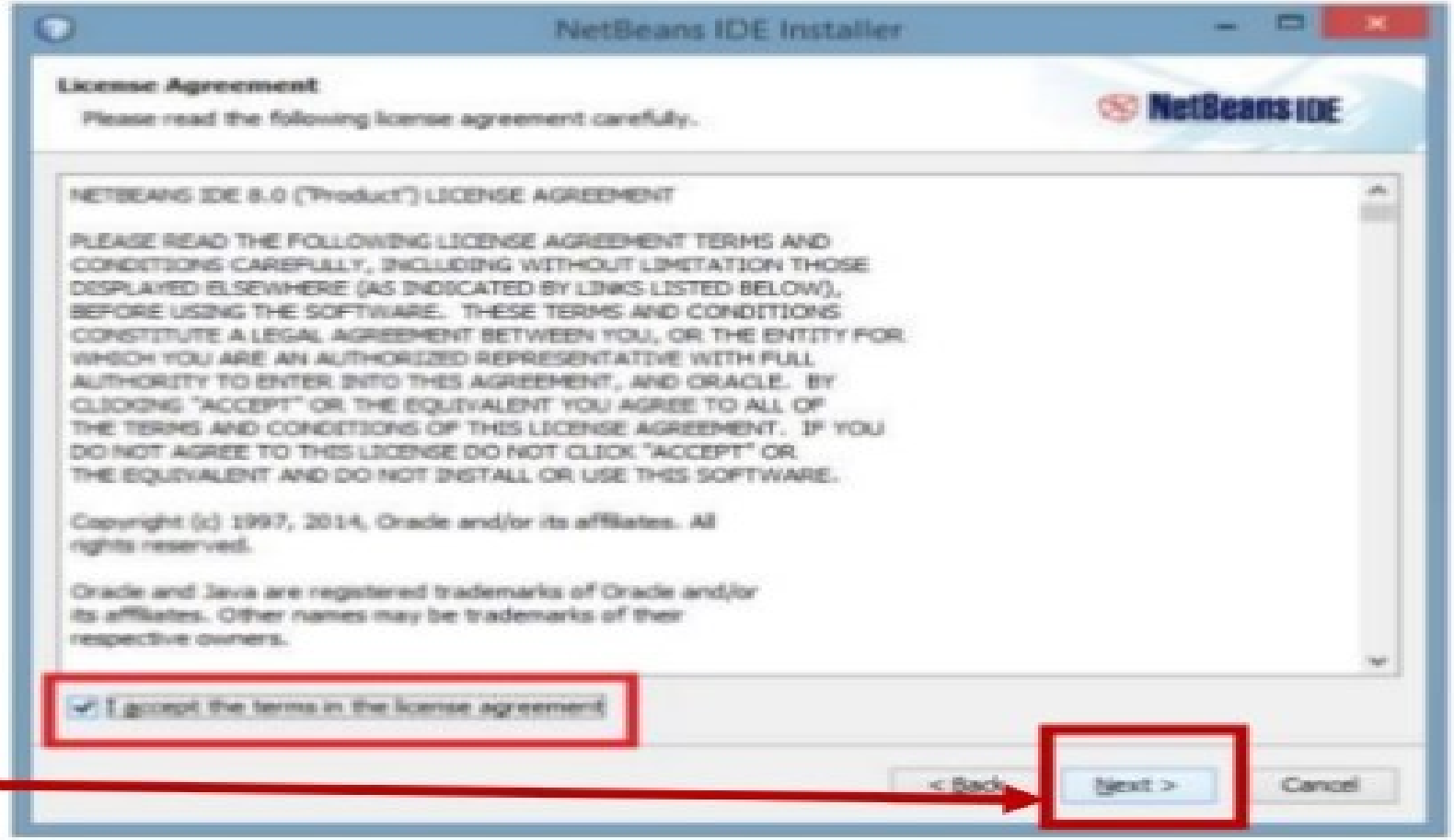
Click Next

INSTALLATION OF NETBEANS



Click the "Accept" Checkbox.

INSTALLATION OF NETBEANS

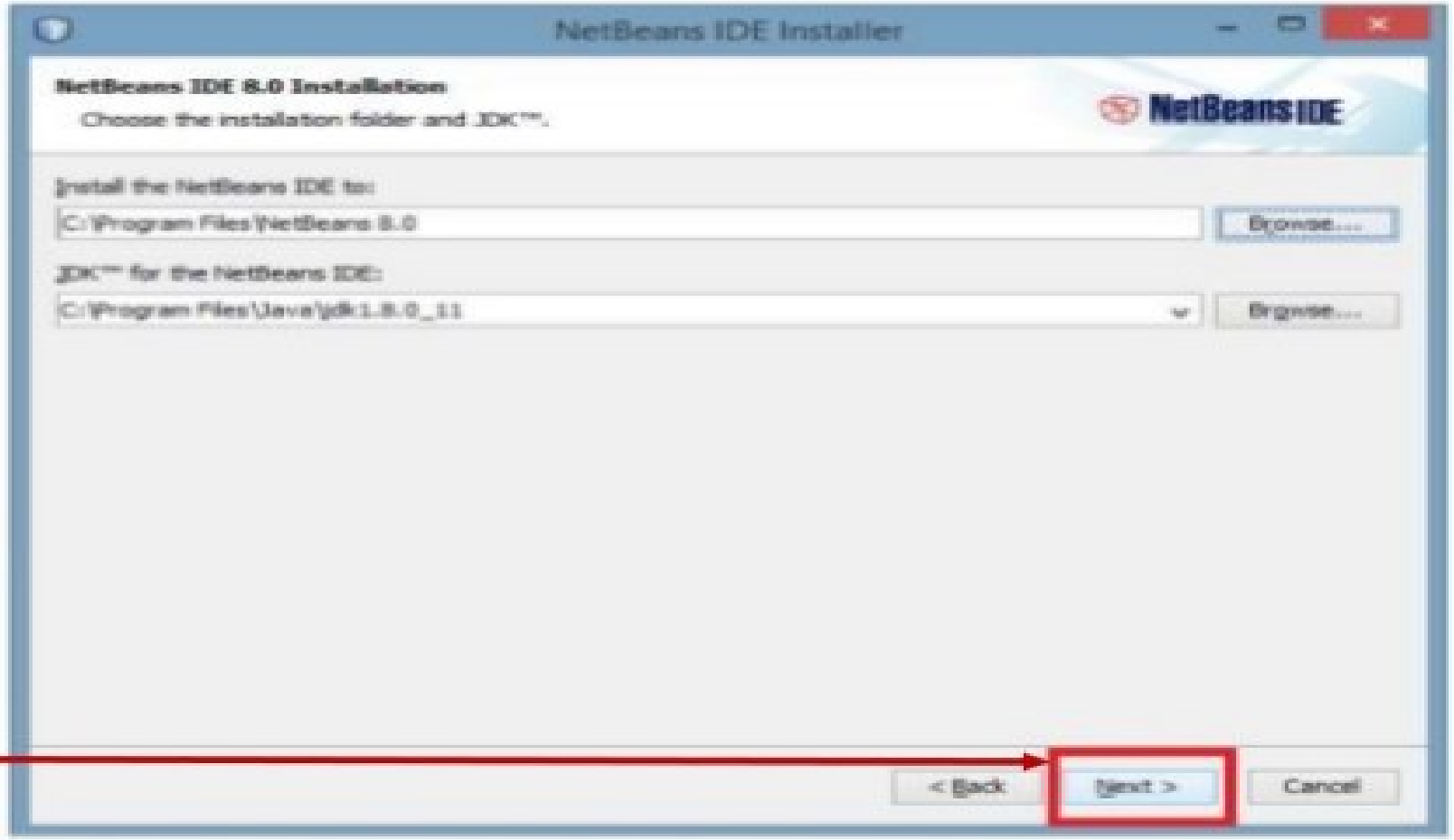


After Click the "Next" Button

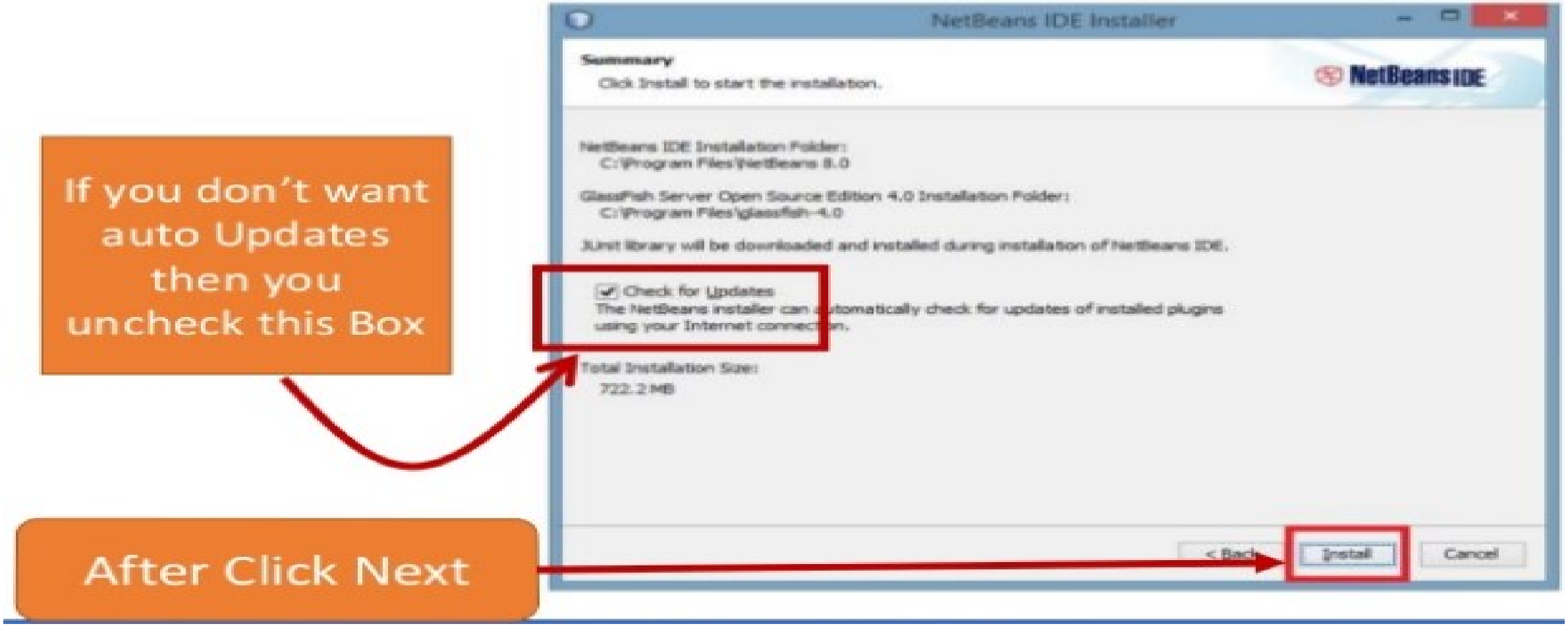
INSTALLATION OF NETBEANS

Please Don't Change the Installation Path Because Default Path is Recommended

Click Next

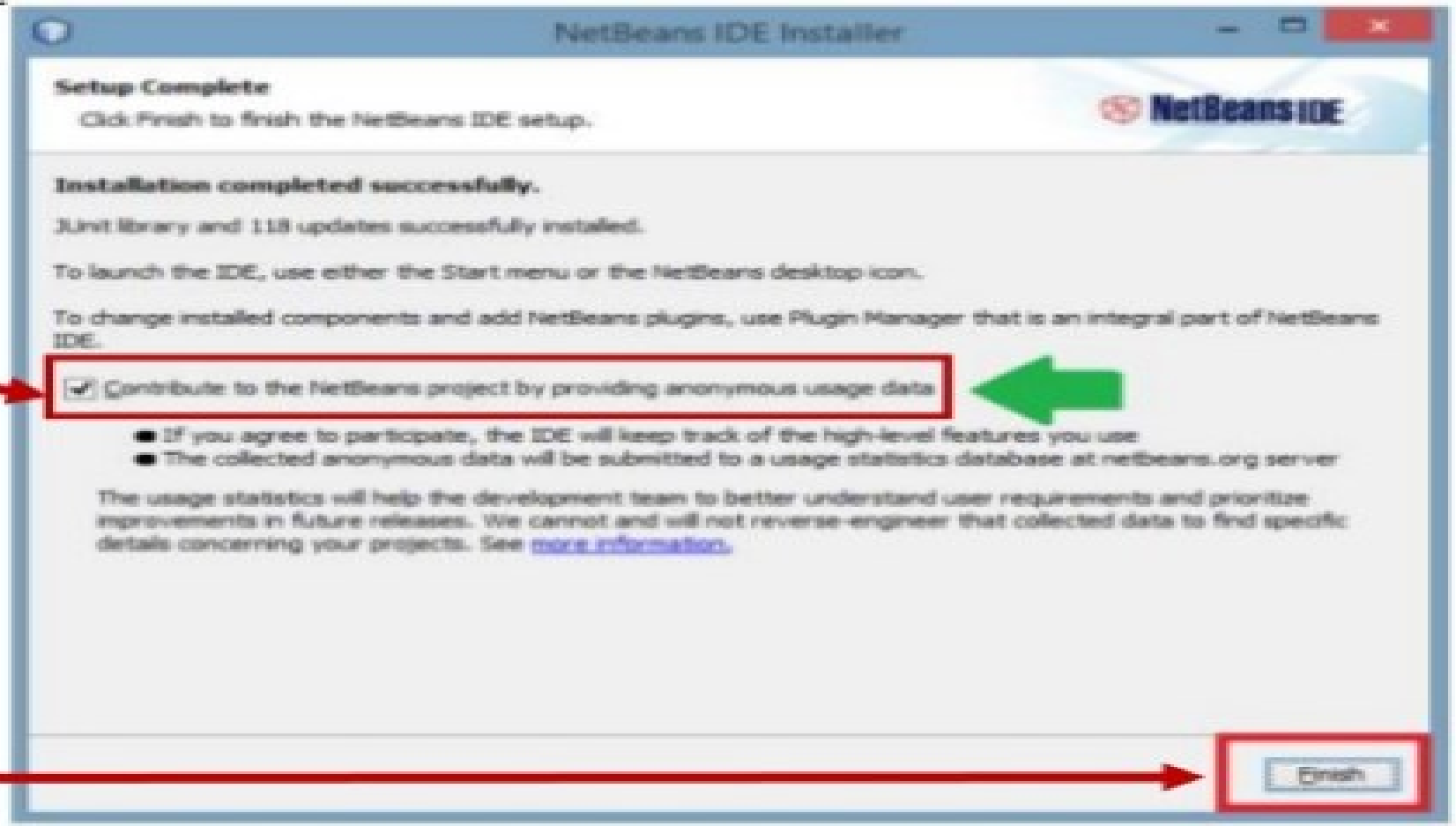


INSTALLATION OF NETBEANS



INSTALLATION OF NETBEANS

Uncheck this Checkbox

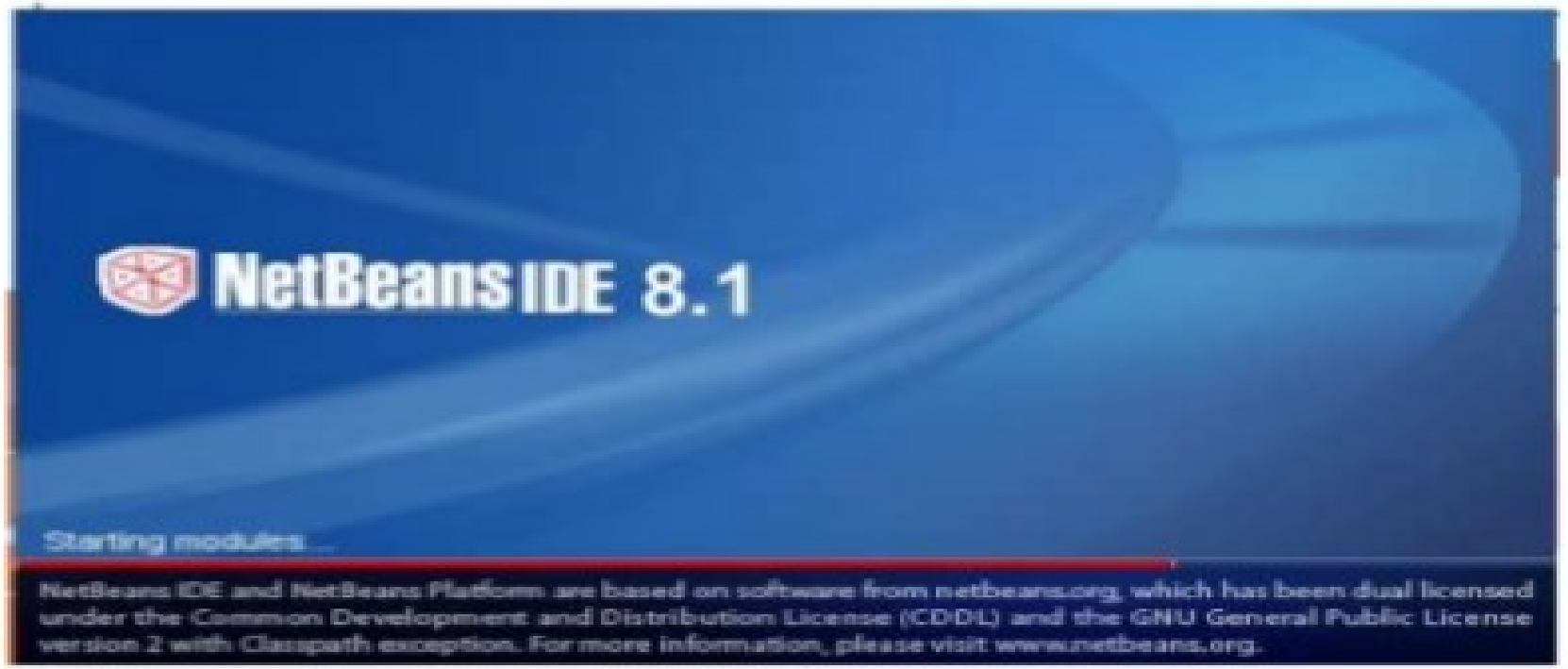


After Click Finish

INSTALLATION OF NETBEANS

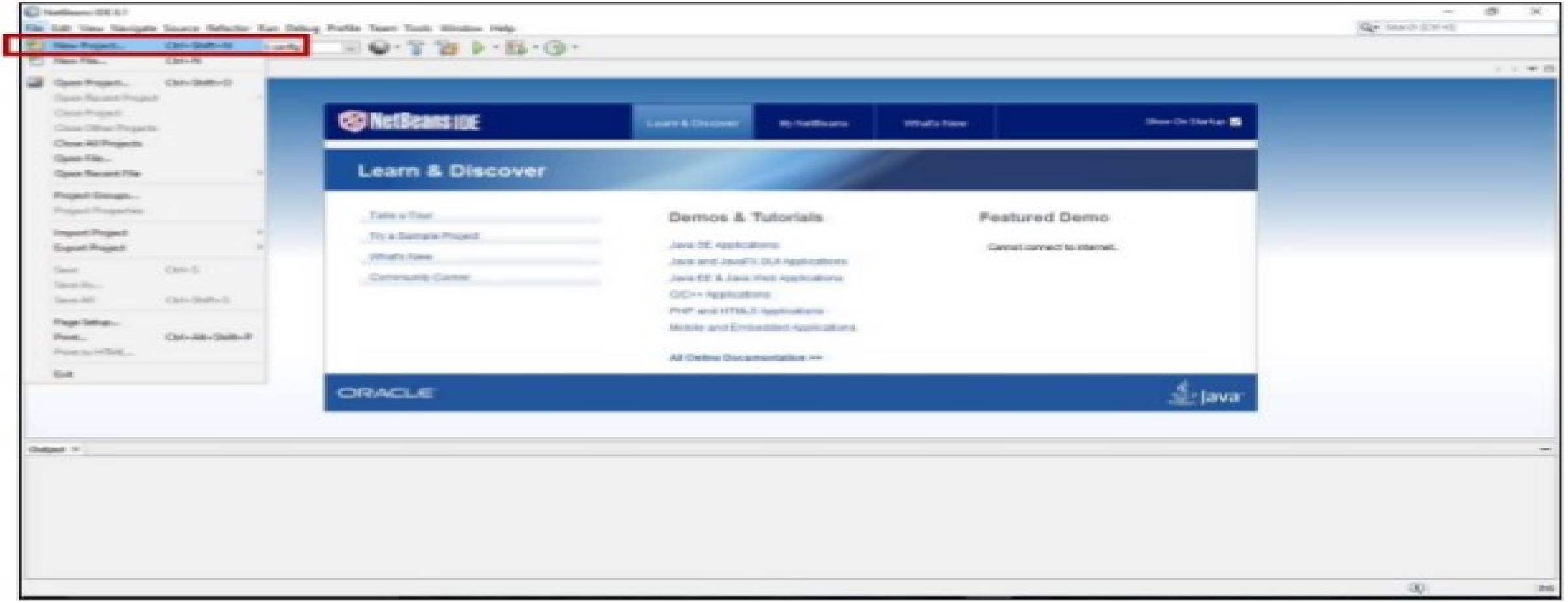
NetBeans Installation Completed.!

CREATE YOUR FIRST PROJECT



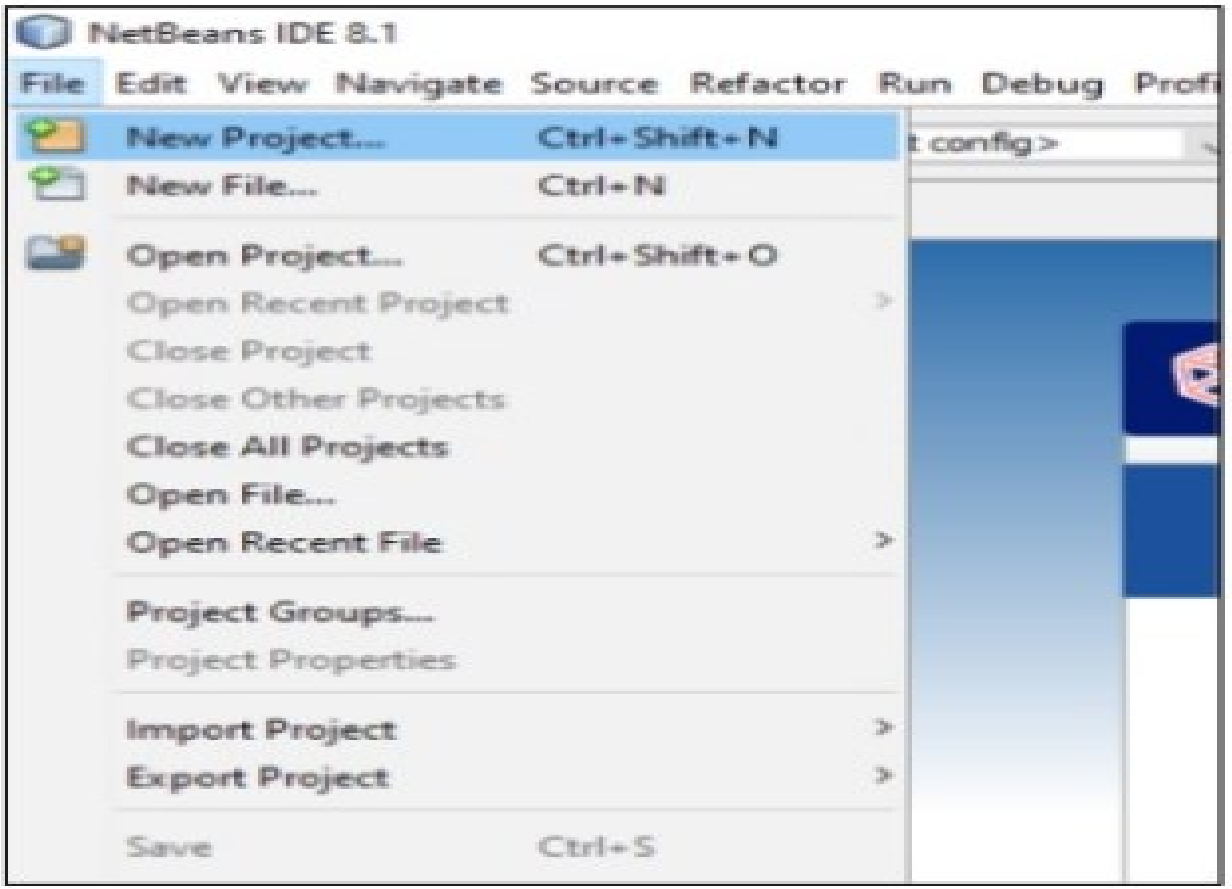
Wait Until Loading is Complete

CREATE YOUR FIRST PROJECT

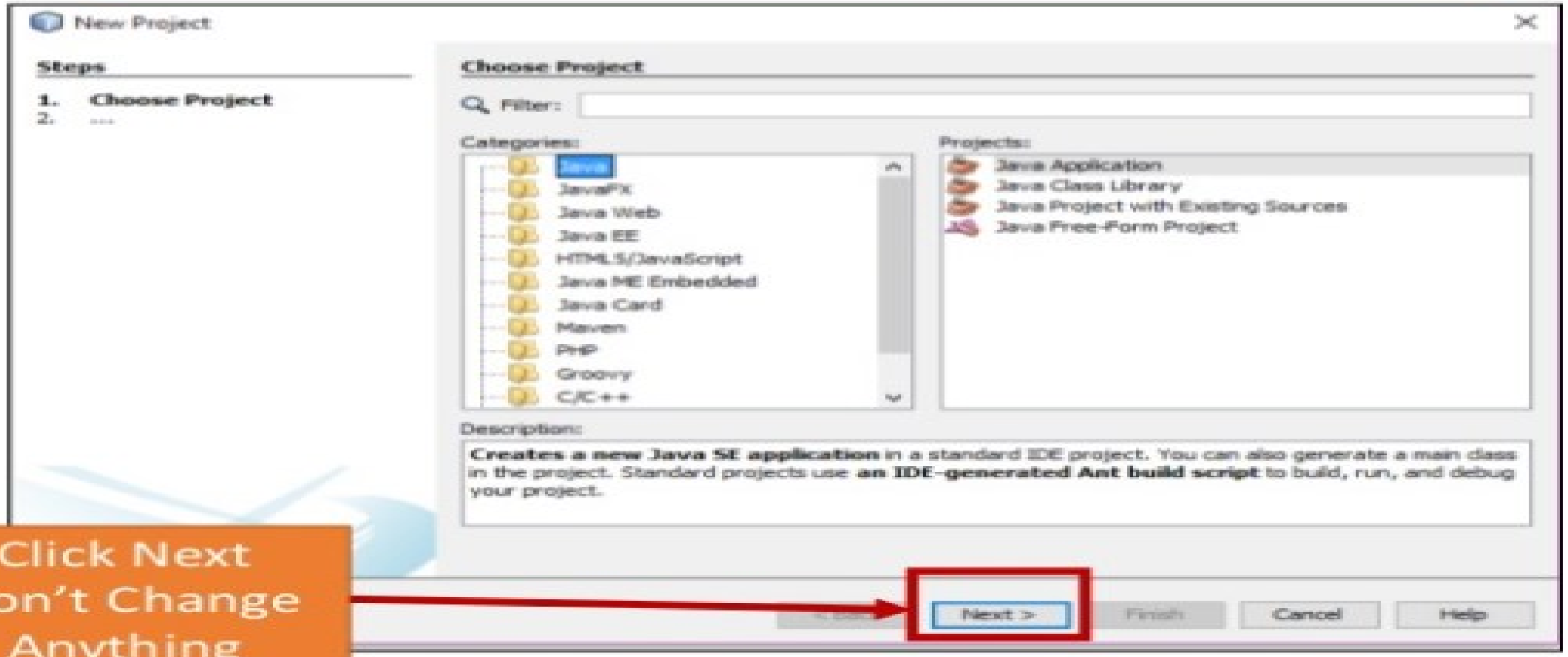


CREATE YOUR FIRST PROJECT

For New Project
Follow me
Click File then Click
New Project

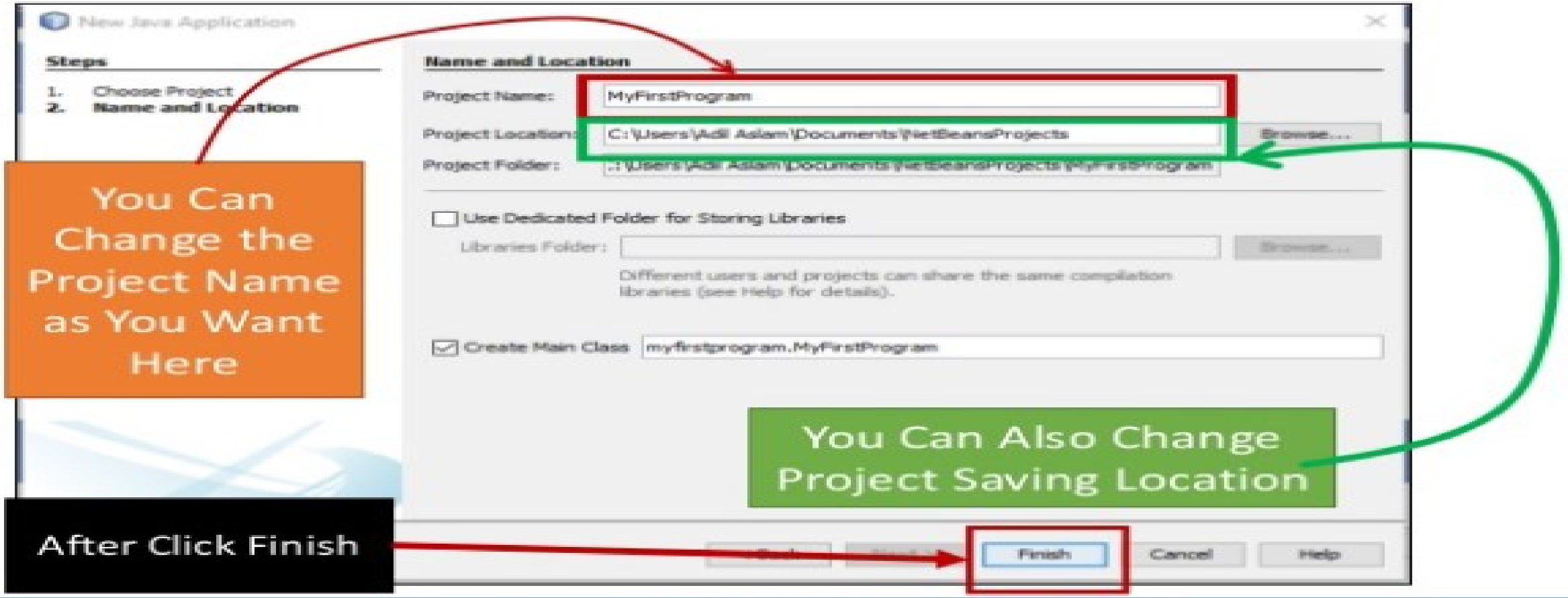


CREATE YOUR FIRST PROJECT

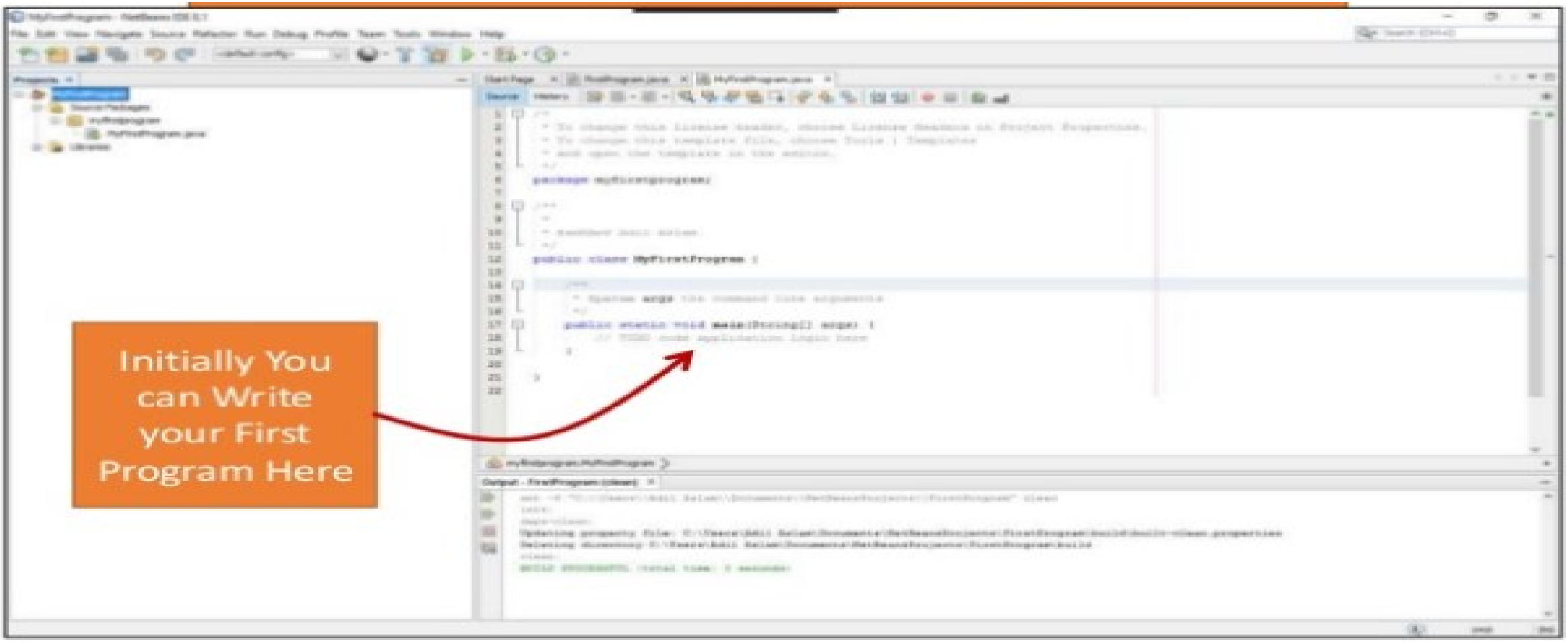


Click Next
Don't Change
Anything

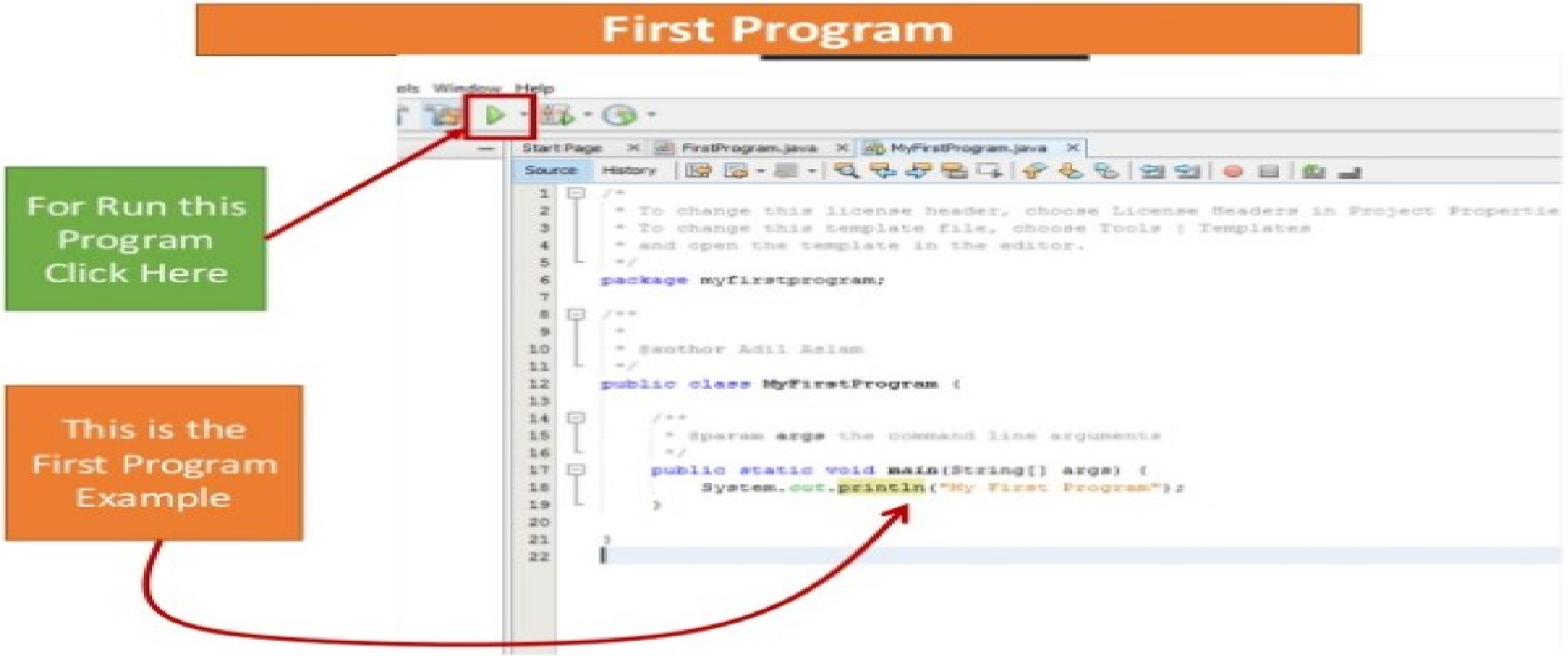
CREATE YOUR FIRST PROJECT



CREATE YOUR FIRST PROJECT

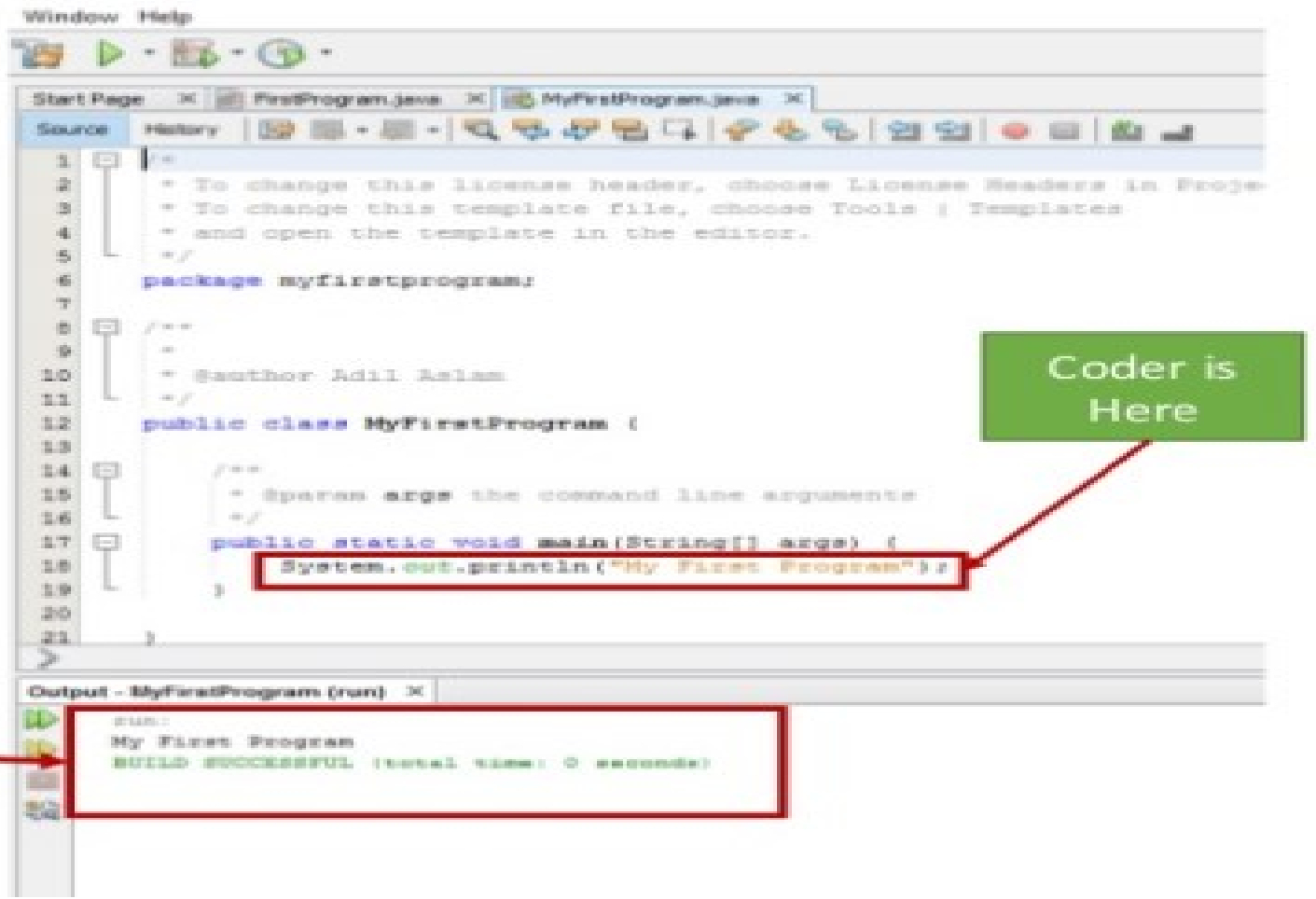


CREATE YOUR FIRST PROJECT



CREATE YOUR FIRST PROJECT

First Program



Coder is Here

Output of this Program is Here

First Java Program

Class Keyword

```
class MyFirstProgram
{
  public static void main(String[] args)
  {
     System.out.println ("My First Program");
  }
}
```

First Java Program


```
class MyFirstProgram
{
  public static void main(String[] args)
  {
    System.out.println ("My First Program");
  }
}
```

First Java Program

Starting of Class Level Scope

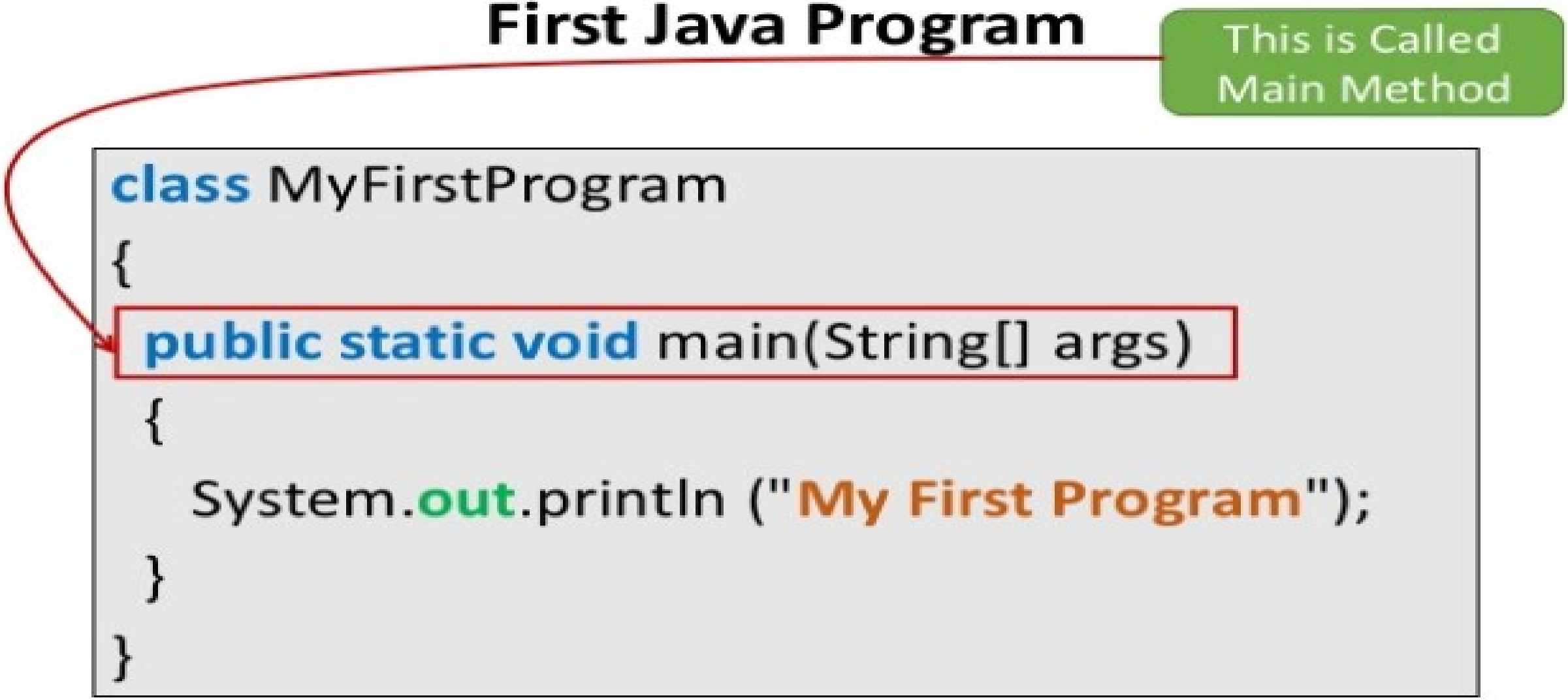
```
class MyFirstProgram
{
  public static void main(String[] args)
  {
    System.out.println ("My First Program");
  }
}
```

First Java Program

This is Called One Block

```
class MyFirstProgram
{
  public static void main(String[] args)
  {
    System.out.println ("My First Program");
  }
}
```

First Java Program



First Java Program

Body of Main Method

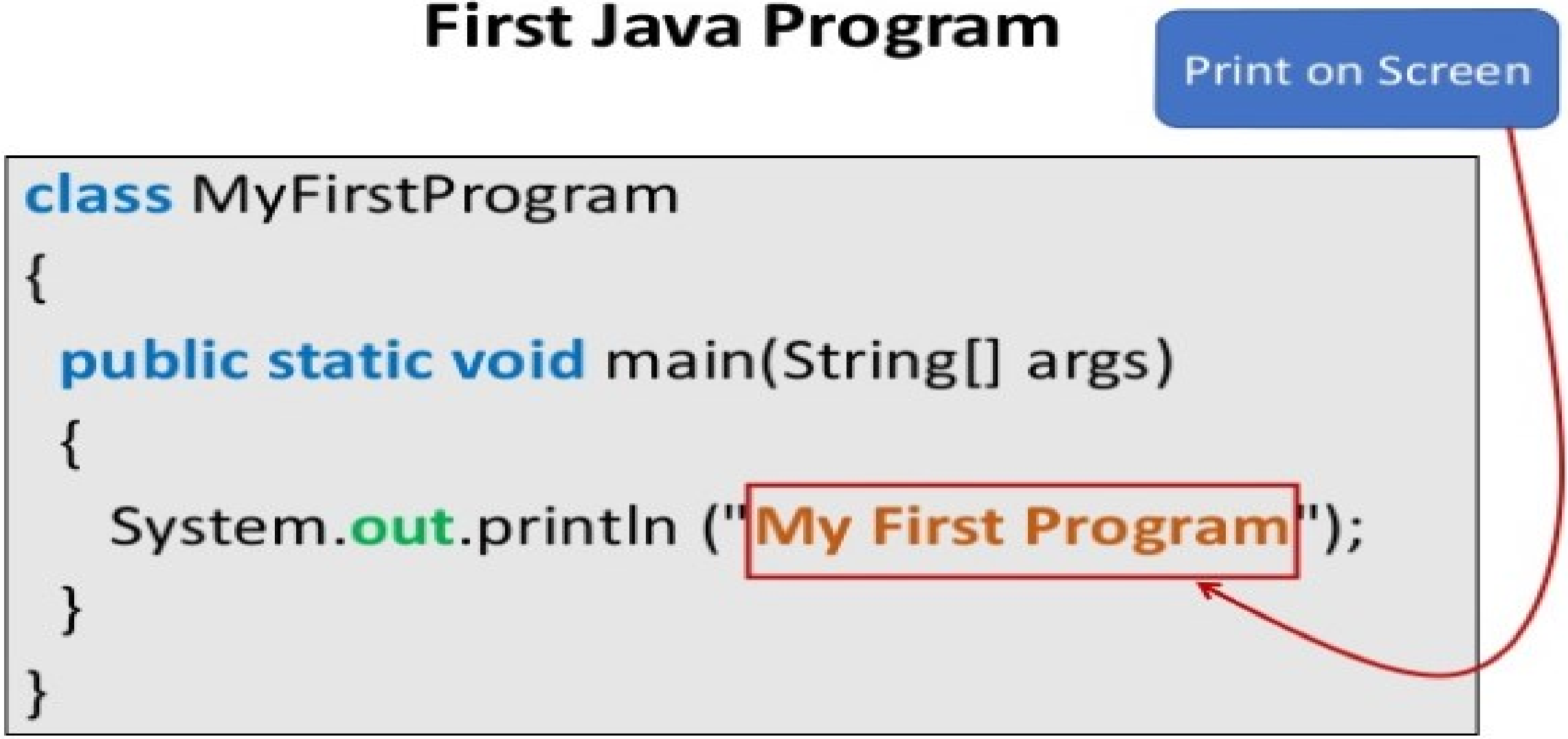
```
class MyFirstProgram
{
  public static void main(String[] args)
  {
     System.out.println ("My First Program");
  }
}
```

First Java Program

Start of Main Method level scope

```
class MyFirstProgram
{
  public static void main(String[] args)
  {
    System.out.println ("My First Program");
  }
}
```

First Java Program



First Java Program

End of Main Method

```
class MyFirstProgram
{
  public static void main(String[] args)
  {
    System.out.println ("My First Program");
  }
}
```

First Java Program

End of Class

```
class MyFirstProgram
{
  public static void main(String[] args)
  {
    System.out.println ("My First Program");
  }
}
```

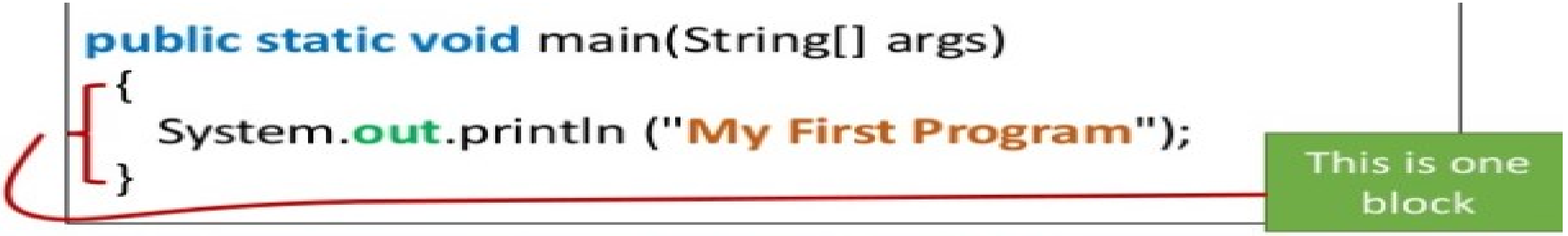
First Java Program

Semicolon use to terminate the statement.

```
class MyFirstProgram
{
  public static void main(String[] args)
  {
    System.out.println ("My First Program");
  }
}
```

BLOCKS IN JAVA

- A block (or a compound statement) is a group of statements surrounded by braces { }.
- All the statements inside the block is treated as one unit. Blocks are used as the body in constructs like function, if-else and loop, which may contain multiple statements but are treated as one unit.
- **For example**



FIRST JAVA PROGRAM

- **Class:** is use to declare a class in java.
- **Public:** is a access modifies which represent visibility. public means it is visible to everyone.
- **Static:** is a keyword. It is known as static method. The main method is executed by the JVM, so it does not require to create object to invoke the main method. So it saves memory.
- **Void:** is the return type of the method. void means method does not return any value.
- **main() :** main() method is the most important method in a Java program. This is the method which is executed, hence all the logic must be inside the main() method. If a java class is not having a main() method, it causes compilation error.
- **String args[]:** is used for command line argument.
- **System.out.println():** is used to print statement.

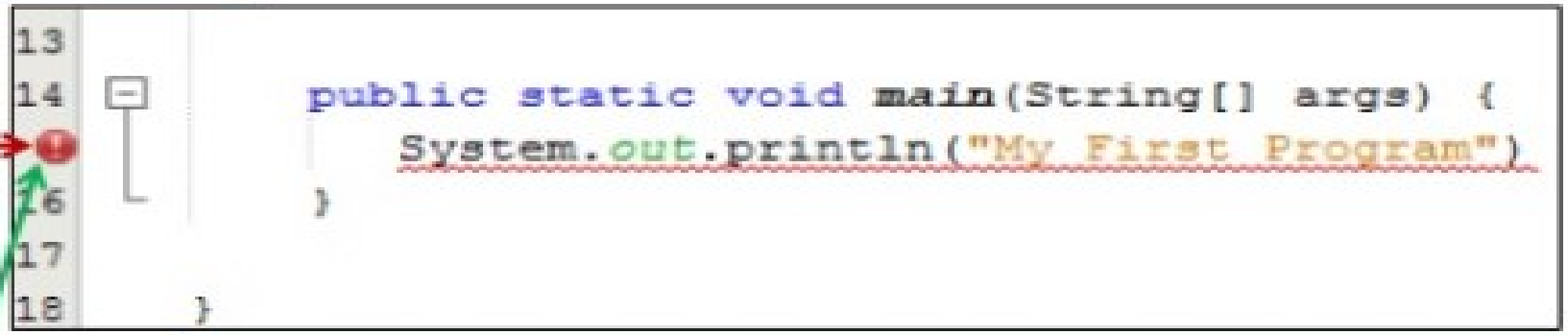
EXPLANATION OF PRINT STATEMENT

The whole line system.out.println is explained below:

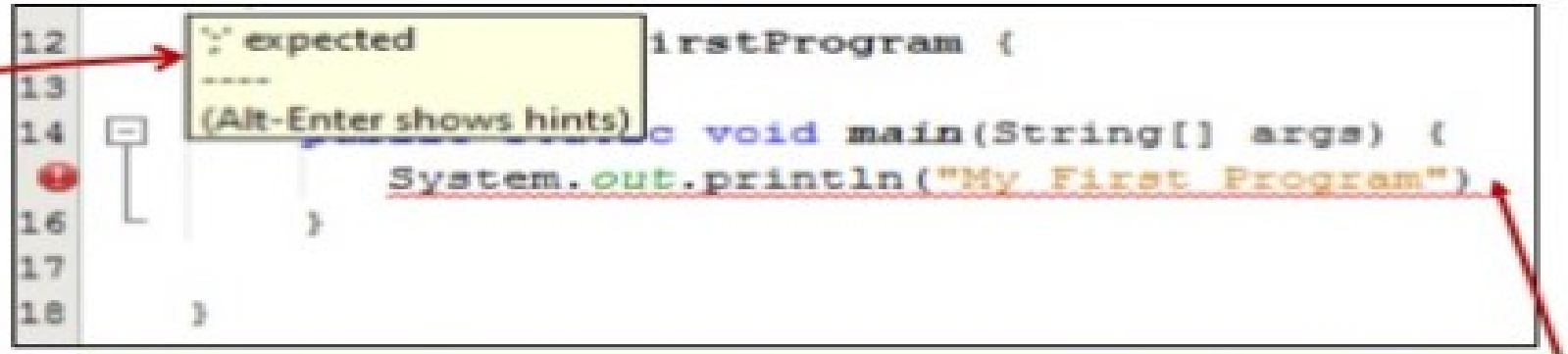
- **System:** System is the class provided by Java that contains variables and methods.
- **Out:** Out is the system's static variable.
- **Println:** Println is the method of system class that is used to print the given text or variable.

Error Correction

This is an Error Indication



For Error Correction Move Your Mouse Pointer In this Error dot and you can See Suggestion for Error Correction



This is the Suggestion and Show that Semicolon is Missing at the end of this Statement

Error Correction

Before Error Correction

```
13
14          public static void main(String[] args) {
                System.out.println("My First Program")
16          }
17
18      }
```

After Error Correction

```
13
14          public static void main(String[] args) {
15              System.out.println("My First Program");
16          }
17
18      }
19
```

THANK YOU.....

DO YOU HAVE ANY QUESTIONS ?