

# Introduction to computer programming A LAB2

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# LAB OBJECTIVES

- 1** Learn how to use an Integrated Development Environment (IDE) in writing JAVA programs
- 2** Practice using input and output statements.
- 3** Exercise

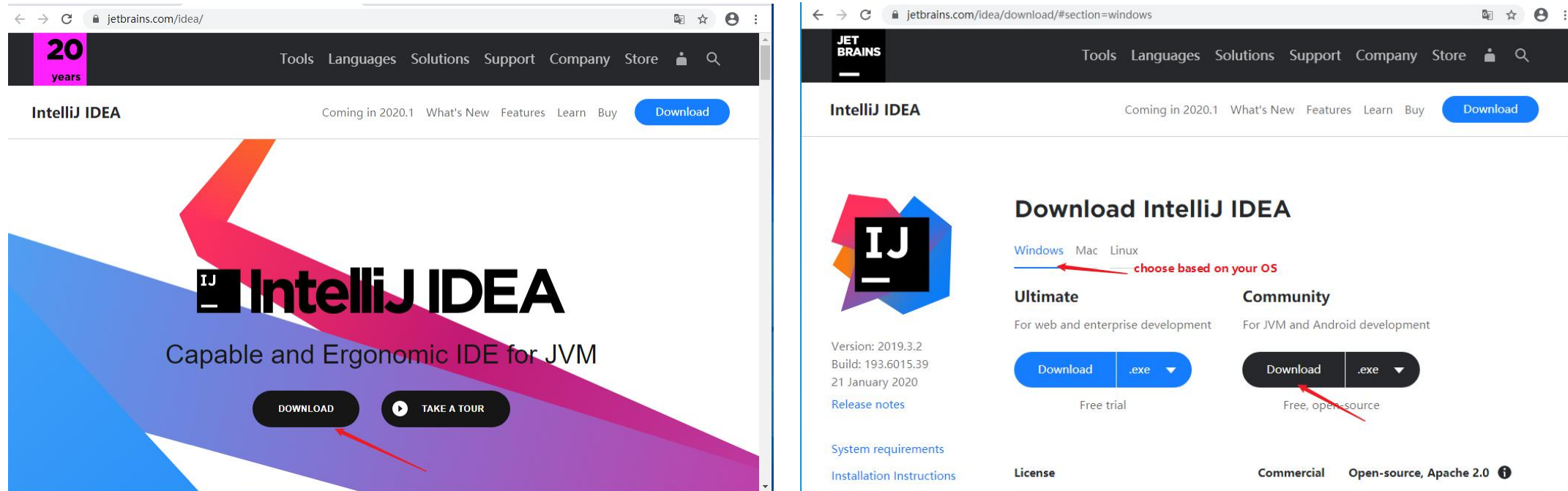


# **1 DownLoading and Installing IDEA**

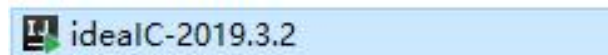
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# DownLoading IDEA

Download IDEA Installer from: <https://www.jetbrains.com/idea/>

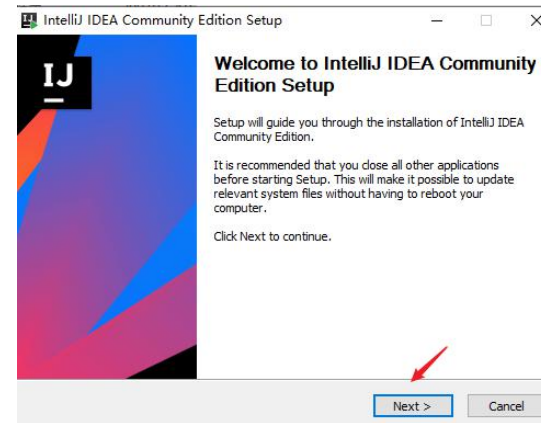
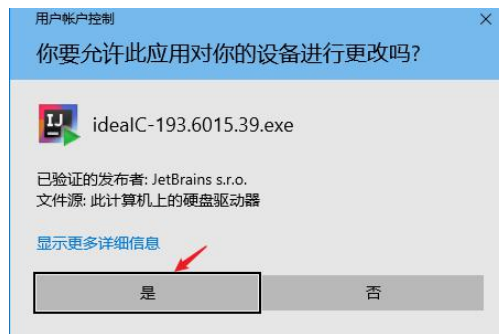


The idea installation package downloaded looks like this:

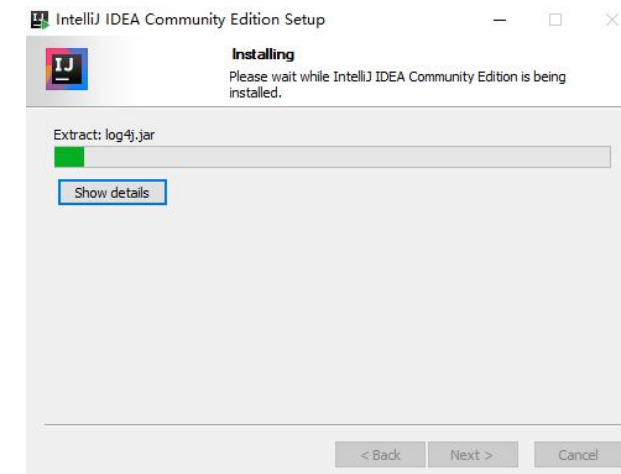
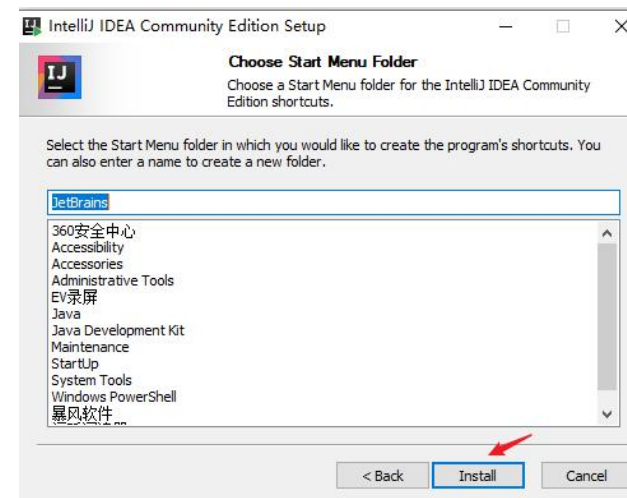
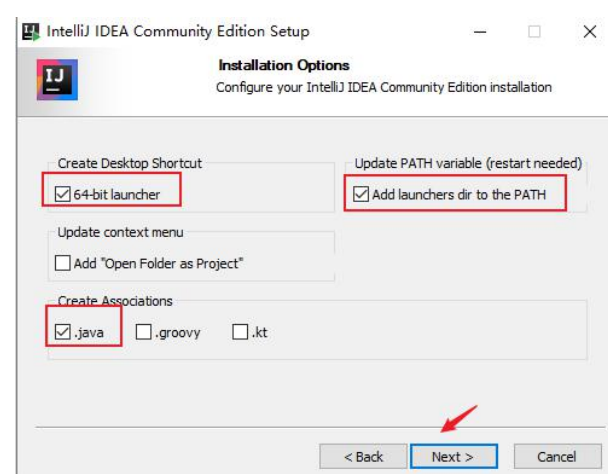
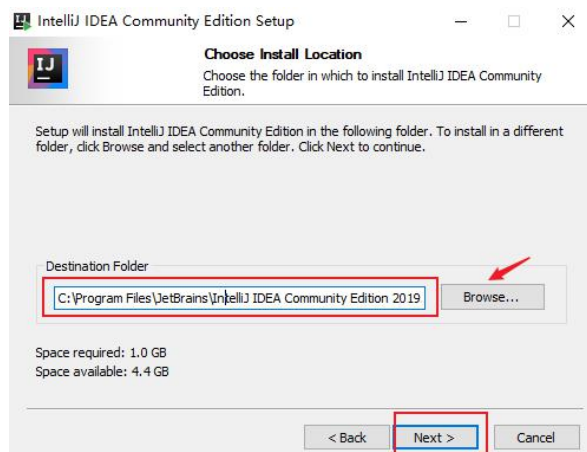


# Installing IDEA

- ◆ Once the download is complete, locate the *ideaIC-2019.3.2.exe* file and **double-click** to run the installer.



- ◆ Click *Next* and on the following screen optionally change the installation location by clicking on the *Change...* button. In this example the default install location was kept.





# Create a new Java project

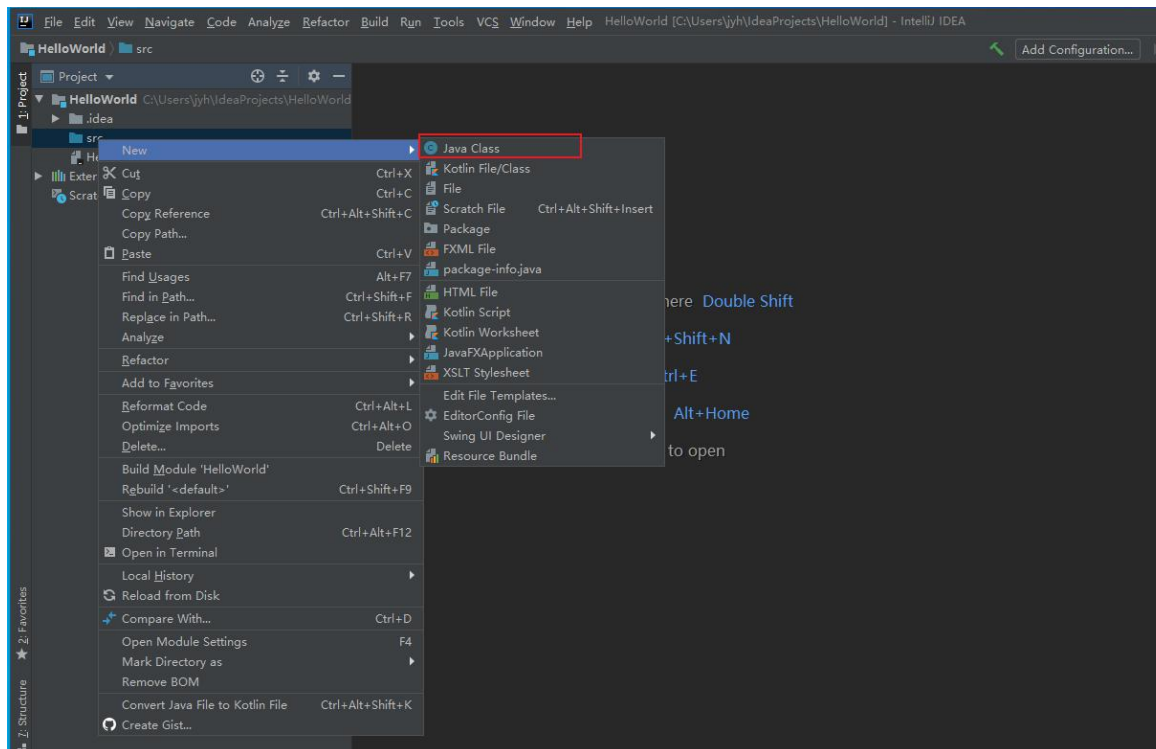
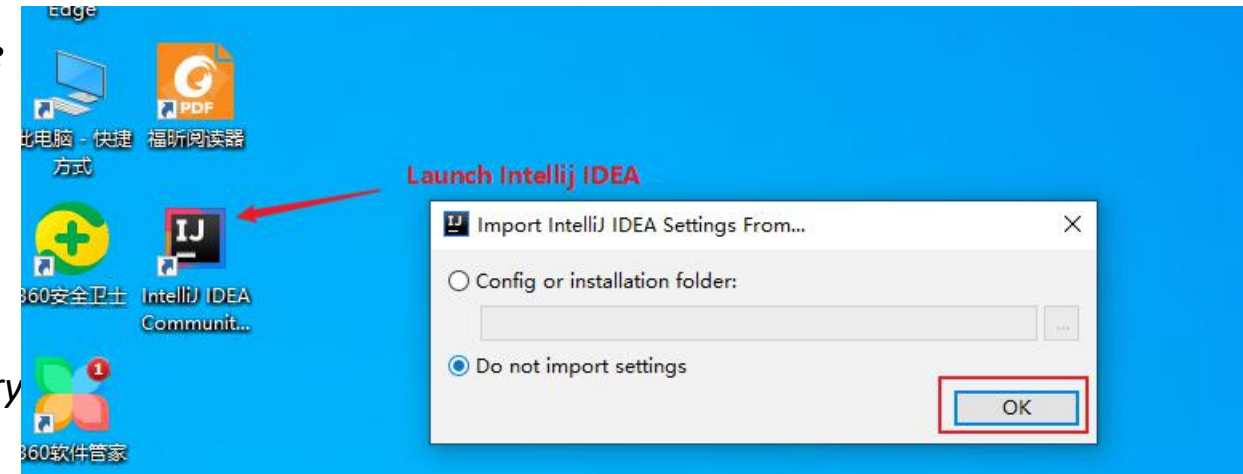
1. Launch IntelliJ IDEA.

*If the Welcome screen opens, click **Create New Project**. Otherwise, from the main menu, select **File | New | Project**.*

2. In the New Project wizard, select Java from the list on the left.

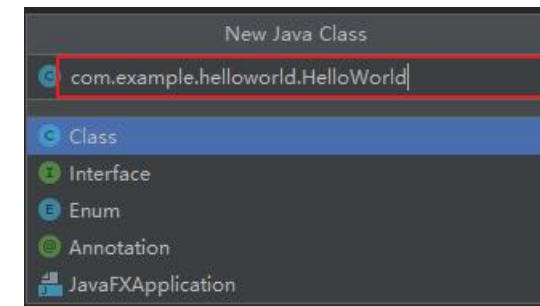
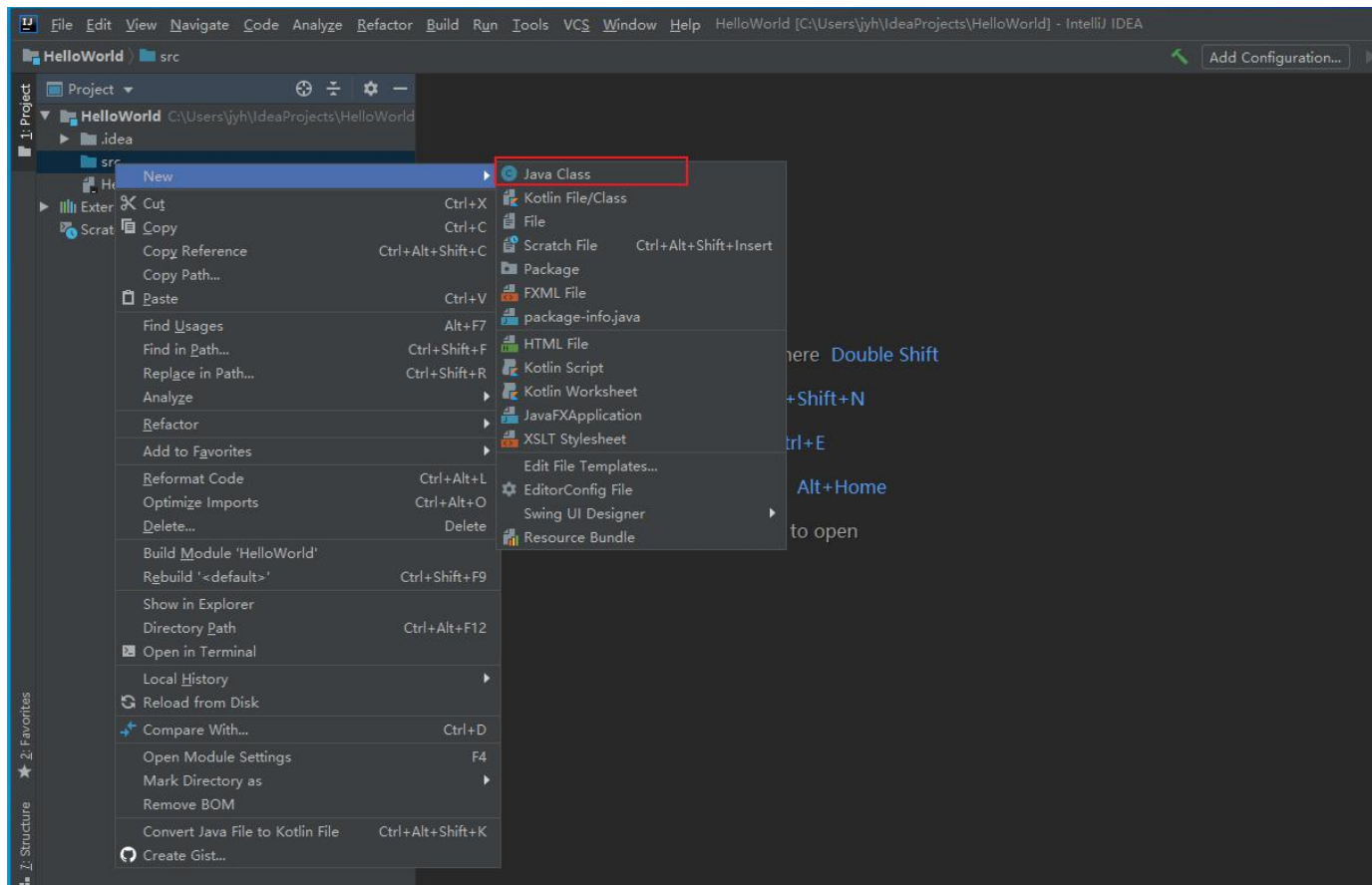
3. From the **Project SDK** list, select the JDK that you want to use in your project.

*If the list is empty, click New and specify the path to the Java home directory (for example, **C:\Program Files\Java\jdk1.8.0\_212**).*



# Create a package and a class

1. In the Project tool window, select the `src` folder, right-click on it, and select **Java Class**.
  2. In the Name field, type ***com.example.helloworld.HelloWorld*** and click OK.
- IntelliJ IDEA creates the ***com.example.helloworld*** package and the ***HelloWorld*** class.*



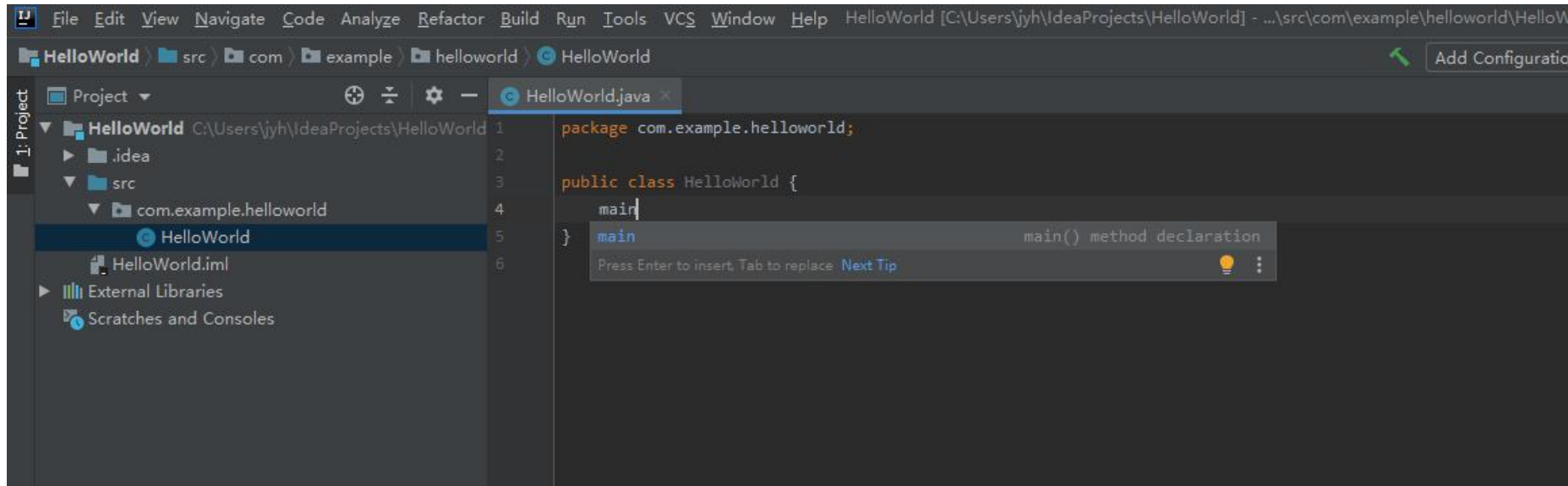
Note:

In Java, there's a **naming convention** that you should follow when you name packages and classes.

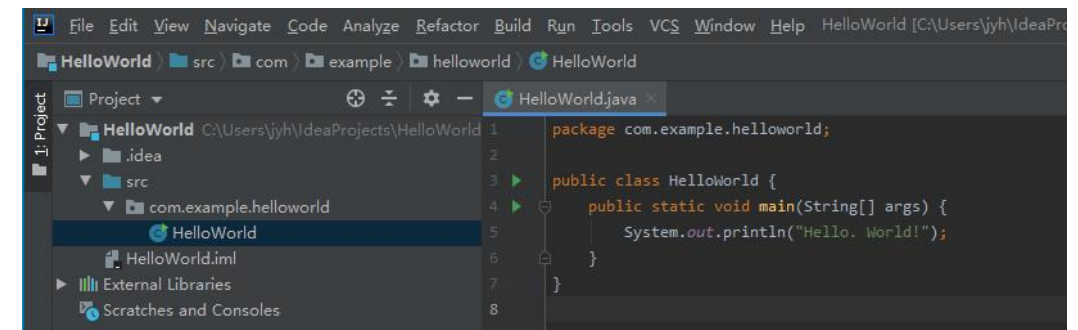
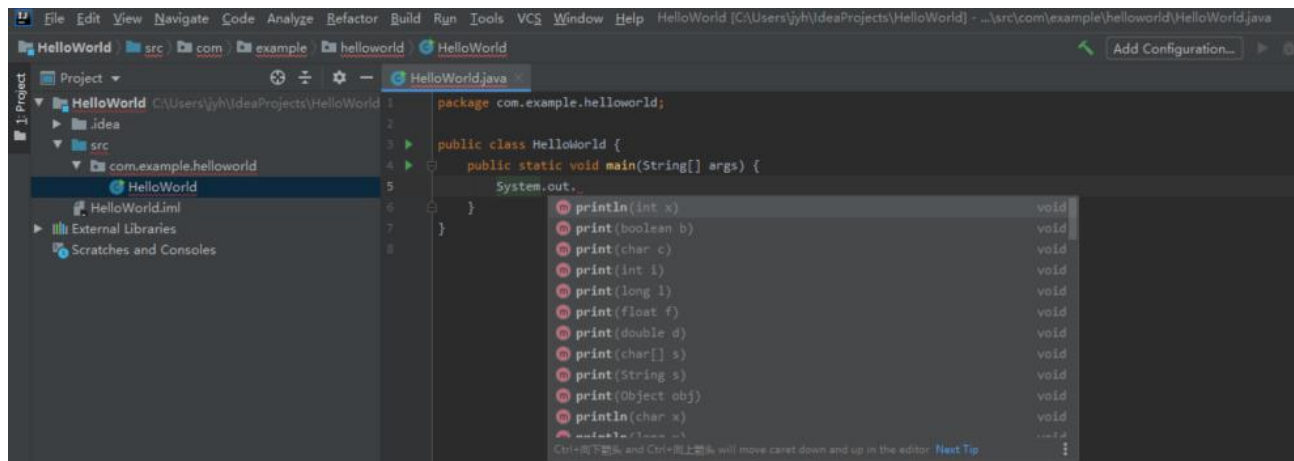
<https://www.oracle.com/technetwork/java/codconventions-135099.html>

# Write the code

1.Type **main** and select the template that inserts the **main()** method declaration.



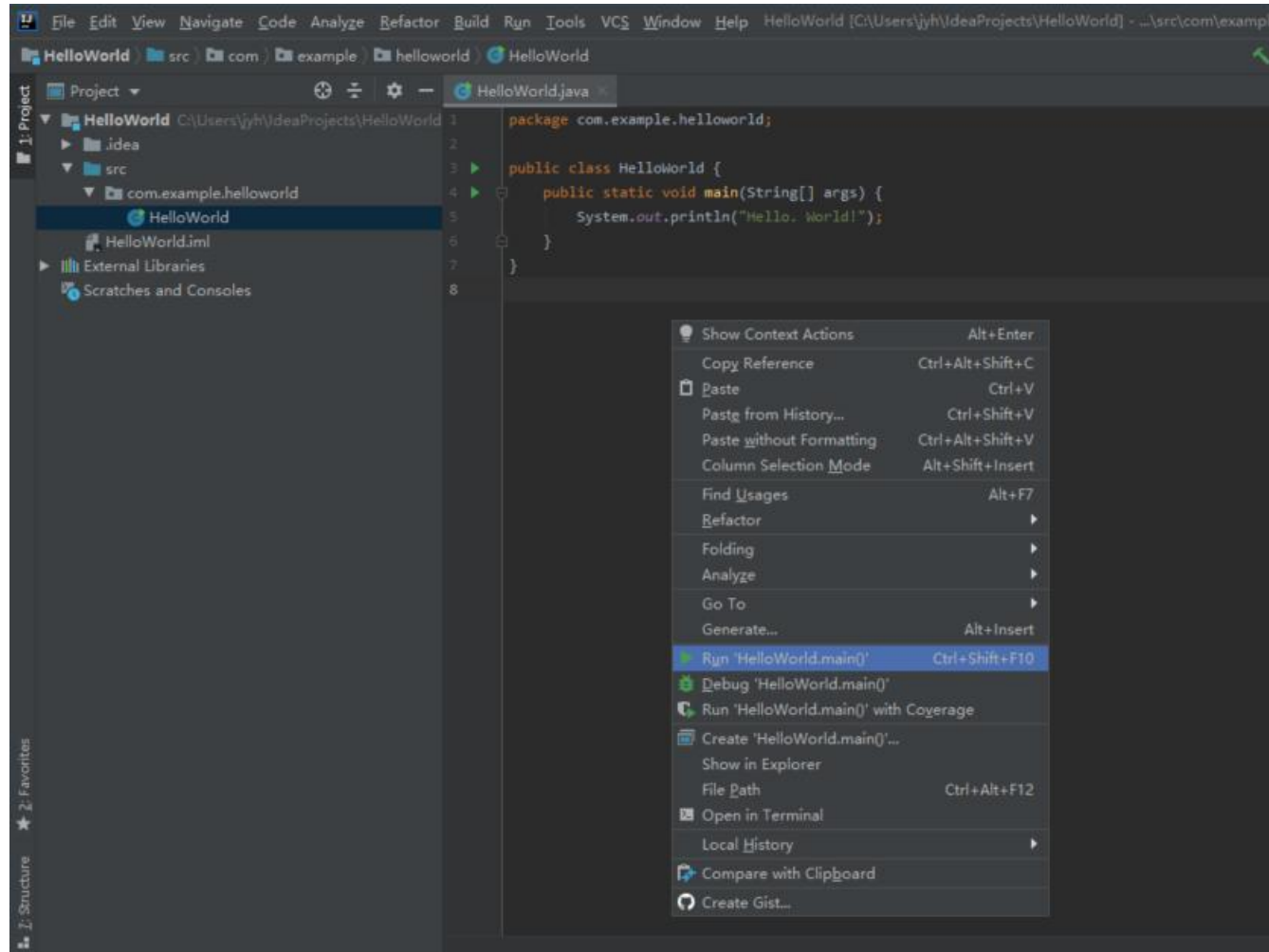
2.Call the **println()** method using code completion





# Build and run the application

1. Go to the Run menu and select the Run option.
2. Select the Class name and click on Run.
3. right-click editor and elect Run 'HelloWorld.main()' in the popup



## 2 Input & Output

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# Data type and its range

Table:List of Java's primitive data types

Type	Size in Bytes	Range
byte	1 byte	$-2^7$ to $2^7 - 1$ (-128 to 127)
short	2 bytes	$-2^{15}$ to $2^{15} - 1$ (-32768 to 32767)
int	4 bytes	$-2^{31}$ to $2^{31} - 1$ (-2147483648 to 2147483647)
long	8 bytes	$-2^{63}$ to $2^{63} - 1$ (-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807)
float	4 bytes	approximately $\pm 3.40282347\text{E}+38\text{F}$ (6-7 significant decimal digits) Java implements IEEE 754 standard
double	8 bytes	approximately $\pm 1.79769313486231570\text{E}+308$ (15 significant decimal digits)
char	2 byte	0 to 65,536 (unsigned)
boolean	not precisely defined*	true or false

\*boolean represents one bit of information, but its "size" isn't something that's precisely defined

# Using Scanner to Input

## In you code

- 1. import java.util.Scanner
- 2. new an Scanner object
- 3. invoke the **method** of the Scanner object to get input data
  - 3-1: next() to get a string data
  - 3-2: nextInt() to get an integer data
  - 3-3: nextDouble() to get a double data
- 4. if all the input process is end, invoke the “**close()**” method is suggested to make your program safe

```
import java.util.Scanner;
public class Demo_scanner{
    public static void main(String [] args){
        Scanner input=new Scanner(System.in);

        System.out.print("please input name: ");
        String name = input.next();
        System.out.print("please input age: ");
        int age = input.nextInt();
        System.out.print("please input level: ");
        char level = input.next().charAt(0);
        System.out.print("please input grade: ");
        double grade = input.nextDouble();

        System.out.printf("My name is %s.\nI am %d years old.\n"
            +"I got %c in Java last semester.\t My score is %.1f\n",name,age,level,grade);
    }
}
```

```
c:\vivian\Java_2018_spring\test>java Demo_scanner
please input name: John
please input age: 18
please input level: A+
please input grade: 96.5
My name is John.
I am 18 years old.
I got A in Java last semester.   My score is 96.5
```

# Print without format

- `System.out.println();`
- `System.out.print();`

```
1 public class Welcome {  
2     public static void main(String[] args) {  
3         System.out.println("Welcome to Java!");  
4         System.out.print("Welcome to Java!");  
5     }  
6 }
```



# 3 Exercises

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Complete the exercises in the **2020S-Java-A-Lab-2.pdf** and submit to the blackboard as required.



# THANK YOU

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