CS102A: Introduction to Computer Programming A
Tutorial 2

[Experimental Objective]

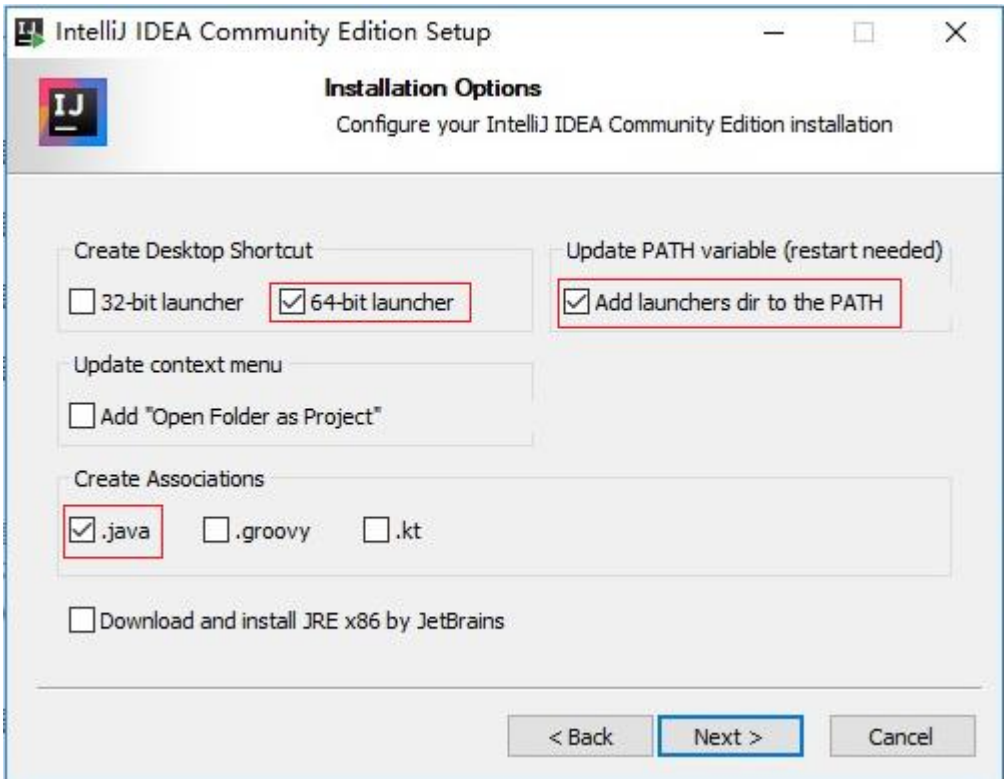
1. Learn how to use an **Integrated Development Environment (IDE)** in writing JAVA programs
2. Practice the use of the Scanner class
3. Practice storing values with correct data types

[Software Installation]

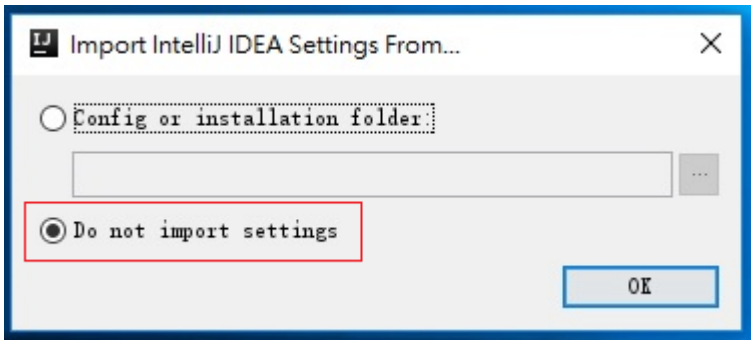
1. In this course, we will use IDEA as our reference IDE.
   You can download IDEA (community version) at the following link:
   https://www.jetbrains.com/idea/download/

2. Run the installation after the download is completed.

You are recommended to tick the box as follows before the installation:

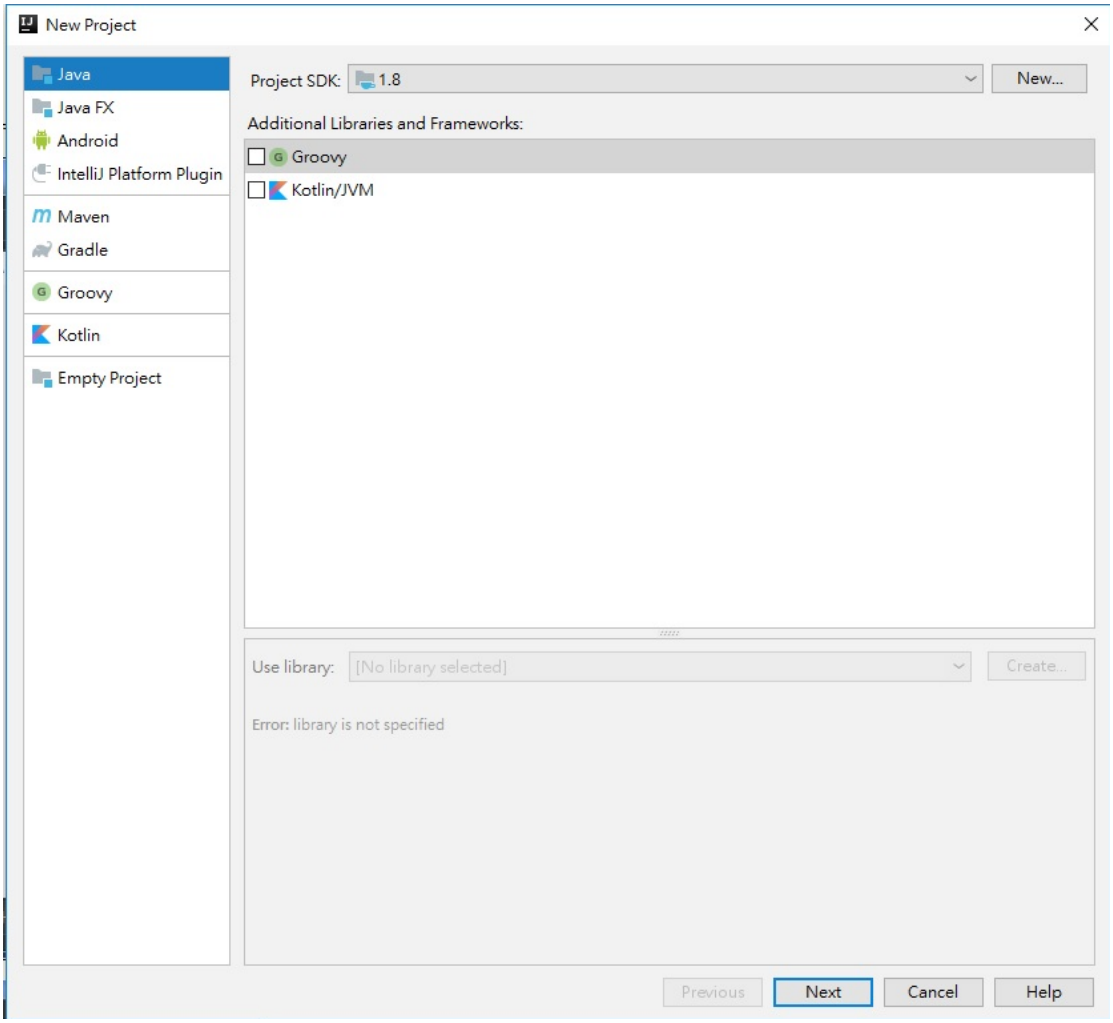


Choose “Do not import settings”.

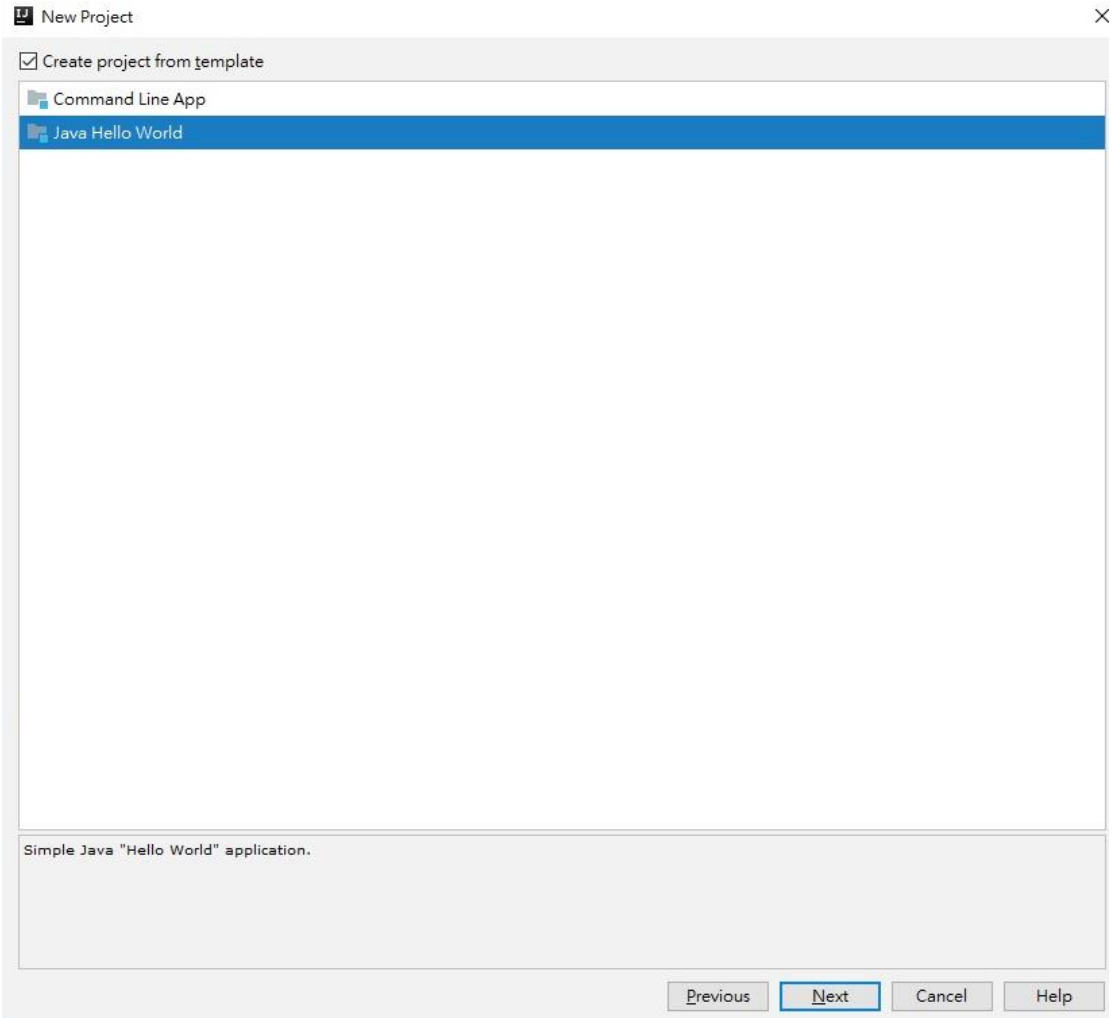


3. After the installation, you are requested to restart your computer. Please restart your computer.
   Click the IDEA icon on your desktop to start IDEA, then choose “create new project”

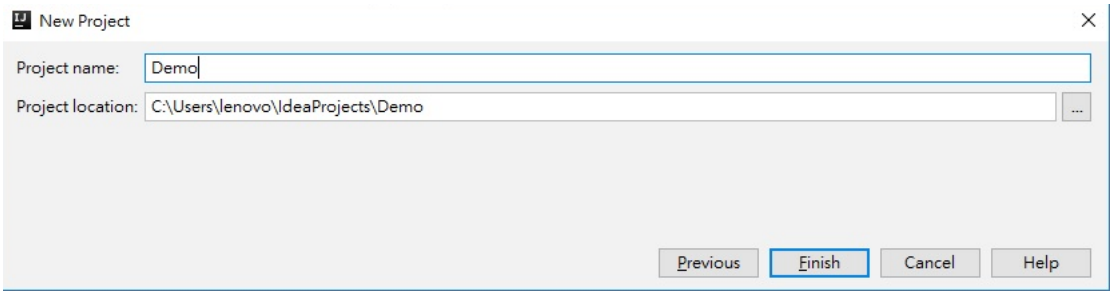
Press “Next” with the default setting:



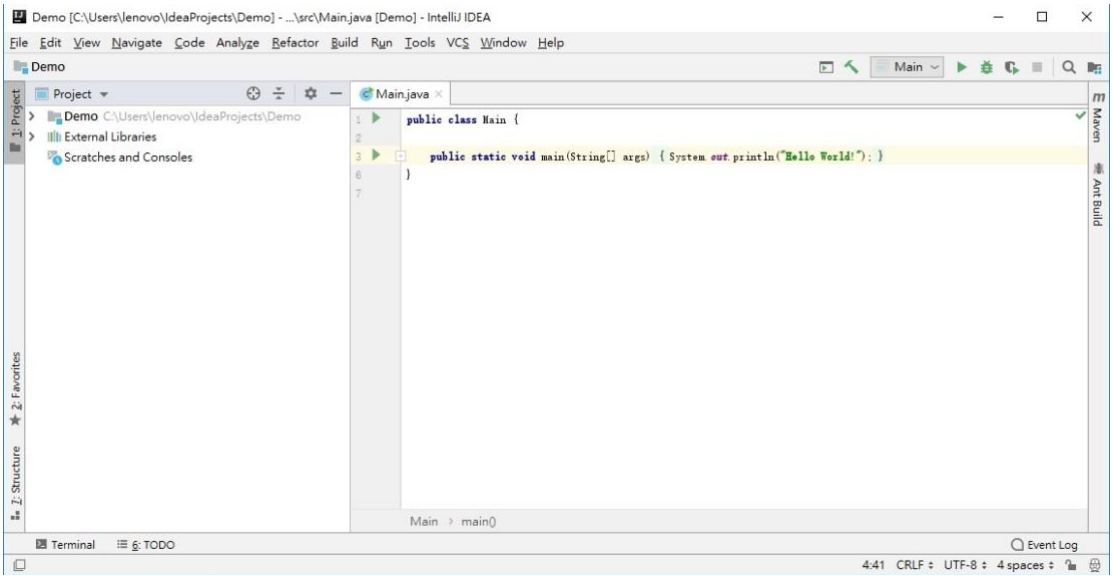
Click “Create project from template” and choose “Java Hello World”



Enter the project name (remember this is the project name, not class name)：

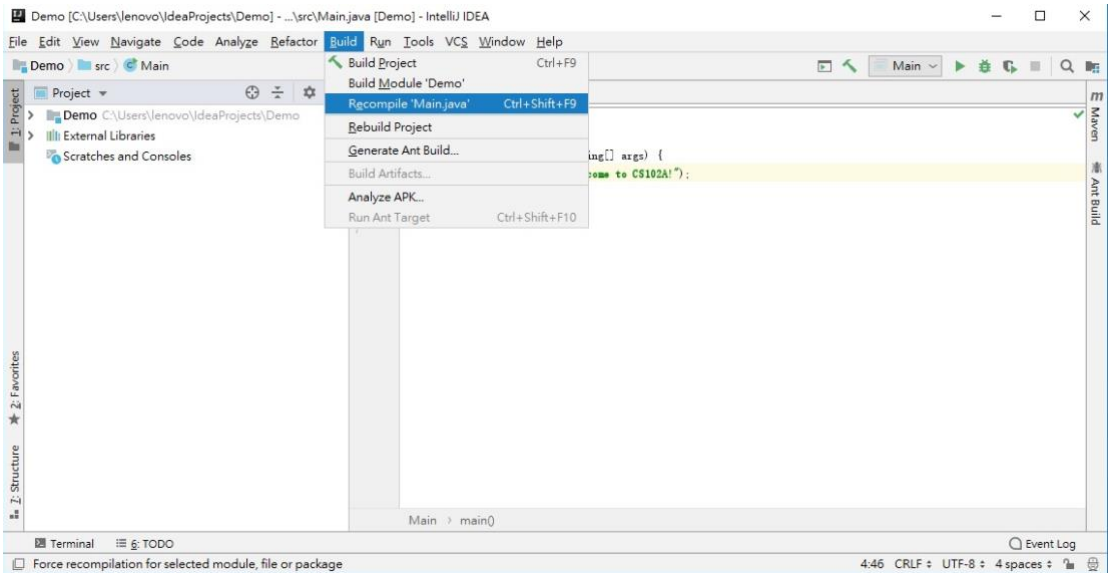


The template code is shown as follows:

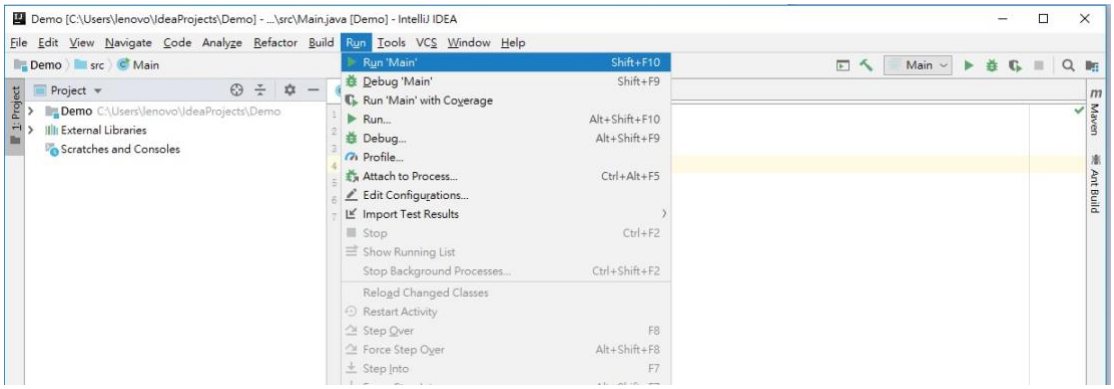


Modify the print out string to “Welcome to CS102A!”.

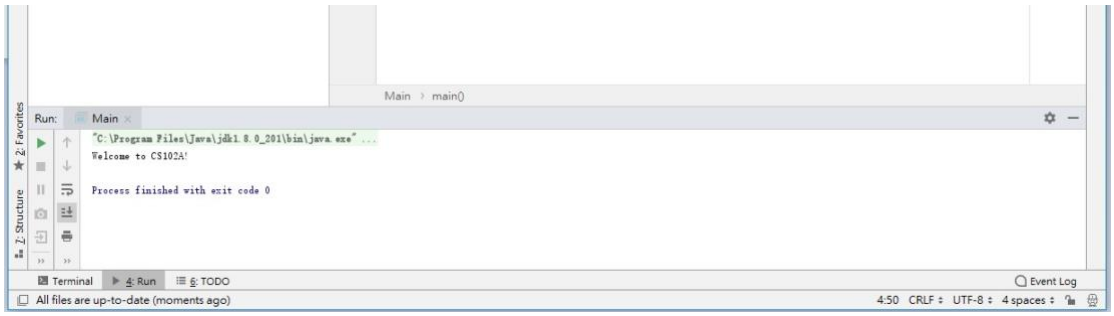
Then compile “Main.java”



Run the “Main” class after compilation.



The output should be shown in the output box as follows:



[Exercises]

1. Modify the source code as follows to practice the use of Scanner class.

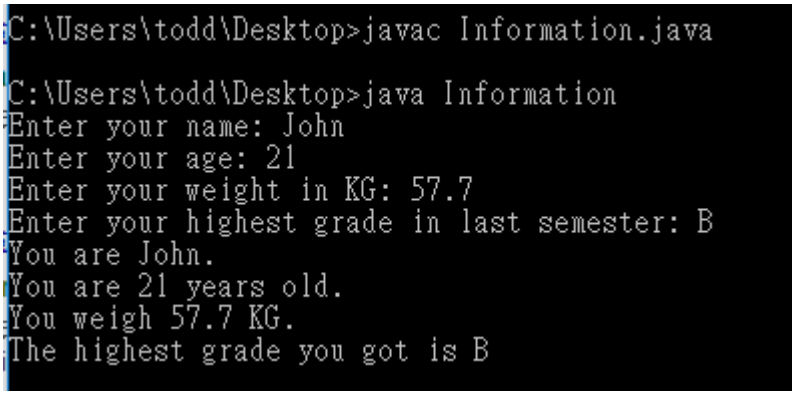
```
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {
        System.out.println("Welcome to CS102A!");

        Scanner input = new Scanner(System.in);

        int number1, number2, sum;

        System.out.print("Enter the first integer: ");
        number1 = input.nextInt();
        System.out.print("Enter the second integer: ");
        number2 = input.nextInt();
```

```
        sum = number1 + number2;
        System.out.printf("Sum is %d\n", sum);
    }
}
```

Except using Scanner class, we can also use command-line arguments to get user's input. We will discuss about this later.

2. Write a program that prompts the user to enter his information, and then prints out in a specific format.

Sample output:



Source code:

```
import java.util.Scanner;

public class Information{
    public static void main(String []args){
        String name;
        int age;
        float weight;
        char grade;

        //creating object of Scanner class
        Scanner input = new Scanner(System.in);

        System.out.print("Enter your name: ");
        name = input.next();
        System.out.print("Enter your age: ");
        age = input.nextInt();
        System.out.print("Enter your weight in KG: ");
        weight = input.nextFloat();
        System.out.print("Enter your highest grade in last semester: ");
        grade = input.next().charAt(0);

        System.out.printf("You are %s.\nYou are %d years old.\n", name, age);
        System.out.printf("You weigh %.1f KG.\nThe highest grade you got is %c\n", weight, grade);
    }
}
```

What happens if you enter '21.5' to the age? We will talk about exception handling later.

3. Write a program that prompts the user to enter the height and width of a rectangle then prints the area and perimeter of the rectangle. The area and perimeter should be printed to the nearest second decimal place.

Sample output

```
Enter the width of a rectangle: 1.7
Enter the height of a rectangle: 2.4
The area is 4.08.
The perimeter is 8.20.
```

4. Write a time converter that prompts the user to enter the number of seconds then prints the equivalent time in hours, minutes and seconds.

Sample output

```
Enter the number of seconds: 7402
The equivalent time is 2 hours 3 minutes and 22 seconds.
```