JAVA PROGRAMMING COURSE (SWE2023)

SPRING SEMESTER 2022

INSTRUCTOR: Prof. TAMER ABUHMED
COLLEGE OF SOFTWARE

Assignment 1

This assignment consists of 3 tasks. Guidelines for submission format are given at the end of the assignment file.

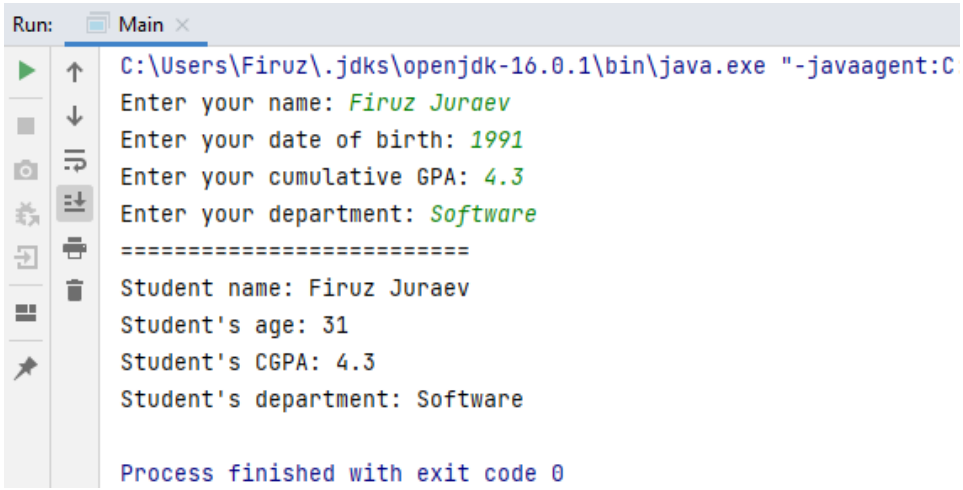
Note: The green numbers and green words in the console are the user's inputs (Used IDEA: IntelliJ IDEA 2021.1).

Task 1

(Information Desk) We need your help to create a program that takes students' information.

You have to create a program that has one class called **Student**. The class **Student** must have the following variables: ***student name, date of birth, cumulative GPA, department***. In addition, the class Student must have one method for calculating the student's age based on his/her date of birth.

After getting all information from students, print the student's information (with calculated age - global age).



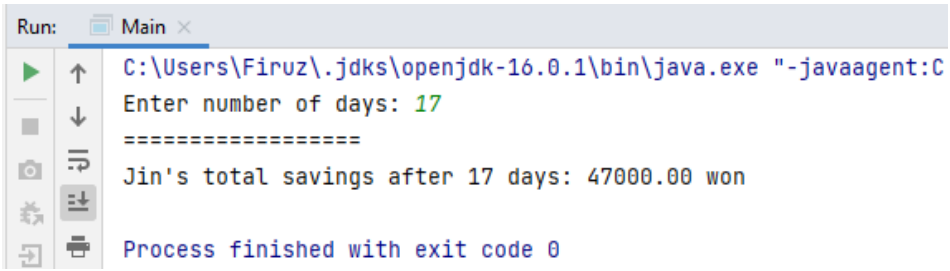
Note: when you output student's information, use the Student class object:

```
Student studentObject = new Student(studentName, dateOfBirth, gpa, department);
System.out.println("==========");
System.out.println("Student name: " + studentObject.getStudentName()); // coming from Student class
System.out.println("Student's age: " + studentObject.getAge());
System.out.println("Student's CGPA: " + studentObject.getGpa());
System.out.println("Student's department: " + studentObject.getDepartment());
```

Task 2

(Saving money) Jin is a student of Sungkyunkwan University. He wants to buy a gift for his mom's birthday. He starts by putting in 2,000 won on the first Monday. Every day he puts in 2,000 won for the first week. On every subsequent Monday, he will put in 1000 won more than the previous week.

You have to write code that takes the number of days until his mother's birthday. Your code should calculate how much money, Jin can collect for the given days.



Explanations:

17 = 7 + 7 + 3

First 7 days, he collected by 2,000 every day: 7*2,000 = 14,000 won

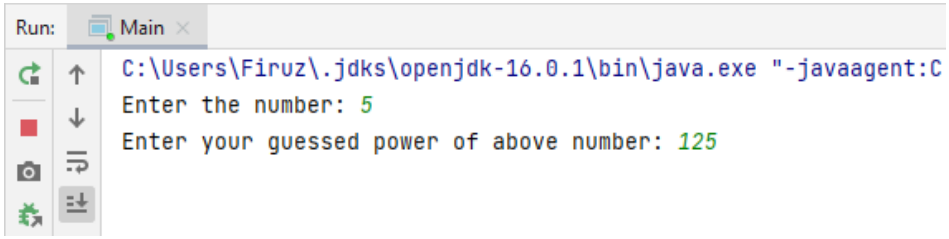
Second 7 days, he collected by 3,000 every day: 7*3000 = 21,000 won

Third 3 days, he collected by 4,000 every day: 3*4000 = 12,000 won

Total saving = 14,000 + 21,000 + 12,000 = **47,000 won**

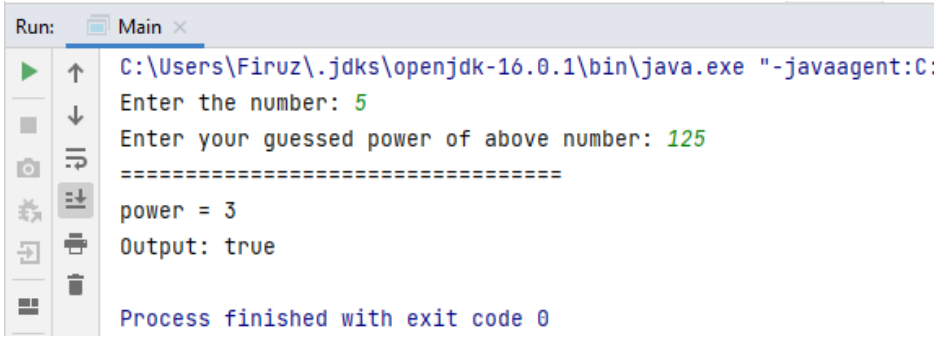
Task 3

(Power of) Now, let's do a logical task. We need to create a program that helps children to learn multiplication. You have to create a program that takes two numbers, the first number is the base number and the second one is the possible power of the first number.

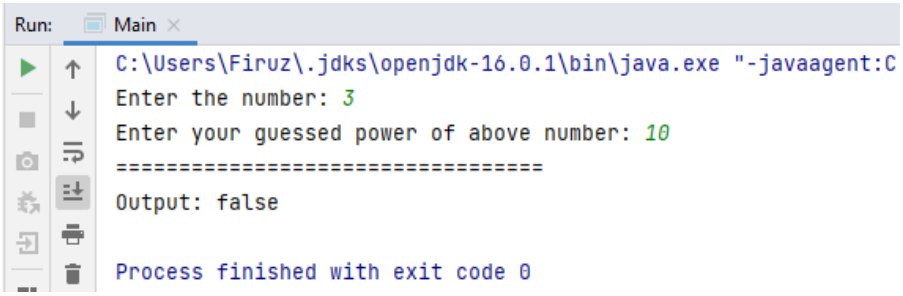


Here, we entered the first number as **5** and the second number as **125.** Is 125 power of 5? Yes, **5^3 = 125**. In this case, your output will be as follows:

Output:



If the second number is not the power of the first number, your output will be as follow:



Grading:

- Correctness and completeness of your code (should be run without errors) - **70%**
- Clean code (comments, good naming, clean functions) - **30%**

Submission format: Submit **four separate files (only .java files, not the whole project folder)**. For the first task, there are two files (Main.java and Student.java). Files must include the implementation code of each task and comments for important lines of code to explain the purpose. All the files should be submitted as one **zip** file.

Name of zip file: {student ID}_{Student name}_assignment1.zip

Example: 2020712837_Frank_Thomas_assignment1.zip

Important: Plagiarism is strictly prohibited. If there is any plagiarism found in the code, you will be given an "F" for the assignment evaluation.

If you have any questions about the assignment, you can ask in the discussion section of the week or contact the TAs directly.

Good luck!