

COMPSCI 2S03, Principles of Programming

Assignment 1, Fall 2019

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Due date: Tuesday, September 17, 9pm

- You should write your codes in Java. The input/output of the programs are all from/to standard-input/standard-output (i.e., reading from the keyboard, and writing to the text terminal).
- DOMJudge is used to automatically test your code against a number of testcases. To submit to DOMJudge, login with your username and password (which you will receive by email) on <http://130.113.70.122/domjudge/team> and then submit your source files for each question. Some more details will be posted on Piazza.
- **In addition to** DOMJudge, submit all your source codes on Avenue. Put the source codes for each question in a separate folder, and then compress all the folders to a zip file (only use zip).
- Your source codes will be graded by the TAs; so follow the style conventions for coding from the class (naming, indentation, spacing, comments) to get full marks.
- Use Piazza for discussions and clarifications about the assignment.

1. **[60 points: 20 for testcases, 30 for source code, 10 for styling]** Alice's normal working time is t hours per week. Each week, she receives d dollars for each hour of normal work; but if she works beyond t hours, then she would receive D dollars for each extra hour beyond t hours. Write a Java class named `Salary` whose main function computes how much Alice will earn in a week where she has worked T hours.

Assume t , d , D , and T are all non-negative integers. The input to the program is a single line containing t , d , D and T respectively (separated by a space). See below for an example.

Input Sample

40 10 20 45

Output Sample

500

Here is another example where Alice does not work overtime.

Input Sample

35 15 18 20

Output Sample

300

2. **[40 points: 20 for testcases, 10 for source code, 10 for styling]** Write a Java class called `SophisticatedSalary` whose main function does the exact same thing as problem 1, except that the input and output formats are different. In particular, t , d , D , and T are still given in a single line, but in *arbitrary order*. In order to avoid ambiguity, the name of each variable is given, e.g., $d=10$. See below for an example. Also, the output is given in three lines: the middle line starts by the salary, a space, and then the word "Dollars". The first and the last line are filled with `*` symbol; the number of stars is equal to the number of characters in the second line.

Input Sample	Output Sample
T=45 d=10 t=40 D=20	***** 500 Dollars *****

Here is another example.

Input Sample	Output Sample
t=35 D=20 T=5 d=15	***** 75 Dollars *****