

2021 OOP/

0616 Practice

Notices :

- 1. Please notice the deadline !!!**
- 2. If you late for the deadline, you still need to hand in this homework, or you will get an F at the end of this semester !!!**

The deadline of this homework :

Deadline : **2021/06/22 (Tue) 23:59:00**

Please upload **3** files (the example for filename : A1073316_UnknownOperator.java) to certain place of Google Classroom. (the details of files you need to hand in is on page 4)

If you don't hand in your homework on time, you will get -1 for your total grade per day until you complete the work and hand it in.

Before you hand in your homework, please check your filename and the content of file is correct or not. If there is any problem about files, you will get zero for this homework.

Question for this Homework :

For this homework, please follow the content below, and complete the “UnknownOperator.java” and “UnknownOperatorException.java”. (Textbook p.610)

Write a program that can serve as a simple calculator. This calculator keeps track of a single number (of type double) that is called result and that starts out as 0.0. (This already complete in UnknownOperatorDemo.java)

Each cycle allows the user to repeatedly add, subtract, multiply, divide or modulo by a second number. The result of one of these operations becomes the new value of result.

The calculation ends when the user enters the letter R for “result” (either in upper or lowercase). The user is allowed to do another calculation from the beginning as often as desired.

The input format is shown in the following sample dialogue. If the user enters any operator symbol other than +, −, *, / or %, then an UnknownOperatorException is thrown and the user is asked to reenter that line of input. Defining the class UnknownOperatorException is part of this project.

Hint :

If the input is not follow the format, you need to throw an UnknownOperatorException with different situations.

If the input is empty, you need to throw the exception with the sentence “*Must specify an operation.*” Another situation is that the first char is not in operators, so you need to throw the except with the sentence *the first char + “ is an unknown operation.”*

1. Content of Homework

Please complete “UnknownOperator.java” and “UnknownOperatorException.java” according to the above content.

Hint : there are some parts you need to do.

- a. Class UnknownOperator (a static method named doCalculation with two argument : the new value to calculate with type String and the original value with type double, then return a double value)
- b. Class UnknownOperatorException (constructor with a String argument)

When you finish the requests above, you can compile “UnknownOperatorDemo.java” and execute it by “java UnknownOperatorDemo” command.

```
al073316@2021_DBMS_practice:~/OOPI$ java UnknownOperatorDemo
Calculator is on.
result = 0.0
+3
result +3.0 = 3.0
updated result == 3.0
-2
result -2.0 = 1.0
updated result == 1.0
*5
result *5.0 = 5.0
updated result == 5.0
/2
result /2.0 = 2.5
updated result == 2.5
11
1 is an unknown operation.
%2
result %2.0 = 0.5
updated result == 0.5
r
final result = 0.5
Again? (y/n)
y
result = 0.0

Must specify an operation.
+2
result +2.0 = 2.0
updated result == 2.0
r
final result = 2.0
Again? (y/n)
N
al073316@2021_DBMS_practice:~/OOPI$
```

picture 1 The example of output

2. Files you need to hand in

There are two files you need to hand in :

- **StudentID(Upper)_UnknownOperator.java**
- **StudentID(Upper)_UnknownOperatorDemo.java**
- **StudentID(Upper)_UnknownOperatorException.java**

Any plagiarism is not allowed, if you against this rule, it will affect your grade.

If you have any question, please consult the assistants or the teacher for help.

Please be mature and gentle in the emails.