Software development: I/O

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1 Introduction

Exercises in foundational input and output using:

- Scanner
- System.in
- System.out

2 FAQ

Exercises can be done in groups.

- Not mandatory
- No hand-in
- (optional) Joint review

2.1 Exercise 1

Write a program that prints the following to console:

Software development
The best subject ev-er

    Learning "Java" is the most fun you can have
2 + 2 = 5;;

2.2 Exercise 2

Write a program that prompts the user to provide a String and echo's the string provided. The code should be commented such that every line is explained.

2.3 Exercise 3

Write a program that prompts the user to provide a number, computes the half of the number and prints the result with a friendly message

2.4 Exercise 4

Write a program that prompts the user to provide an int n and prints the difference between n and 21 with input from Scanner.

2.5 Exercise 5

Rewrite the program from exercise 3 and change the input from Scanner to command-line arguments using *args[0]*

2.6 Exercise 6

Write a program that is dependant on a String *s* from command-line arguments *args[0]*, then prompts the user to provide an int *a* and prints the following:
My name is "*s*" and I own [a] cats!

2.7 Code Lab Challenge: Zellers Congruence

Zellers Congruence is an algorithm developed by Christian Zeller to calculate the day of the week. Write a program that implements Zellers Congruence with input from the user using Scanner(System.in)

The formula is:

$$h = (q + \lfloor \frac{13(m+1)}{10} \rfloor + k + \lfloor \frac{k}{4} \rfloor + \lfloor \frac{j}{4} \rfloor - 2j)\%7 \quad (1)$$

h is a temporary variable
q is the day of the month (1-31)
m is the month (1-12)
j is the century: year/100
k is the year of the century: year%100

$\lfloor ... \rfloor is the floor function$

$$d = ((h+5)\%7) + 1 \quad (2)$$

d is the day of the week

The input: 31 8 2020 will yield the result: 1