



Columbia College
Vancouver, Canada

Introduction to Computer Science and Programming 1
CSCI120

Chapter3: Conditional Statements (if/else)

Chapter3-Lab

Note: This document has been designed and developed as part of an initiative for creating an OER (Open Education Resource) package for the course CSCI 120 at Columbia College.

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Requirements

- For each of the problem below write a Python program.
- When defining variable names, use proper and meaningful names for the variables.
- Follow Python's convention for naming your variables (camel case)
- Remember Python is sensitive about indentation. Use proper indentation.
- Add comments to your code.
- Refer to lecture notes and lessons if you need any help.
- Write all the python programs in one single file. Separate your answers for each questions as following: Example:

```
##Problem 1  
print("Problem1-----")  
Python code for problem 1
```

```
##Problem 2  
print("Problem2-----")  
Python code for problem 2
```

Problem1

- Write a Python program that accepts both positive numbers and negative numbers. This program will prompt the user to enter a number and then checks it whether it is valid or not. A valid number:
 - o Only contains digits
 - o Does not start with digit 0
 - o If it is negative the first character is -
 - o If it is positive there is no + sign before the first digit

Problem2

- Write a python program which receives three positive numbers from the user and checks whether there is a perpendicular triangle whose side's lengths are the numbers the user has entered.



Problem3

- Write a python program which receives a word from the user and checks whether the input word is an acceptable name for a variable in Python. (No need to check the Camel Case format).
- An acceptable variable name 1- only contains digits and alphabet and underscore 2-It does not start with a number 3- It has at least one character

Problem4

- Write a python program which receives a word from the user and checks whether the input word is an acceptable name for a constant in Python.
- An acceptable constant name in Python is all upper case and could contain an underscore.

Problem5

- The table below shows the provincial tax bracket in British Columbia, Canada in 2022. Prompt the user to enter a number that represents the total salary of a person and calculates how much tax s/he will pay in his highest tax bracket.



British Columbia 2021 tax rates

The tax brackets for British Columbia for 2021 are:

2021 British Columbia income tax brackets	2021 British Columbia income tax rate
On the first \$42,184	5.06%
\$42,184 to \$84,369	7.7%
\$84,369 to \$96,866	10.5%
\$96,866 to \$117,623	12.29%
\$117,623 to \$159,483	14.7%
\$159,483 to 222,420	16.8%
More than \$222,420	20.5%

Reference:: https://www.wealthsimple.com/en-ca/learn/bc-tax-brackets#british_columbia_2021_tax_rates

Good Luck 😊