CPSC 1150 – Lab 4

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Assignment Description

This Lab includes three programs, their associated documentation is in this file.

Program Descriptions

Sort3.java

The first program takes in three integers from the user, sorts them in ascending order and prints them to the console.

Pseudocode:

Start

Print "Enter your first integer"

Read int to **a**

Print "Enter your second integer"

Read int to **b**

If   **a > b**

      int **largest** = **a**

      int **middle** = **b**

else

      int **largest** = **b**

      int **middle** = **a**

Print "Enter your third integer"

Read int to **c**

If   **c > middle**

      If   **c > largest**

            int **smallest** = **middle**

   int **middle** = **largest**

int **largest** = c

else

int **smallest** = **middle**

int **middle** = c

else

int **smallest** = c

Print smallest middle largest

Print "Enter your first integer"

Read int to "a"

Print "Enter your second integer"

Read int to "b"

If a > b

— True → int largest = a, int middle = b

— False → int largest = b, int middle = a

Print "Enter your third integer"

Read int to "c"

If c > middle

— False → int smallest = c

— True ↓

If c > largest

— True → int smallest = middle, middle = largest, largest = c

— False → int smallest = middle, middle = c

Print smallest, middle, largest
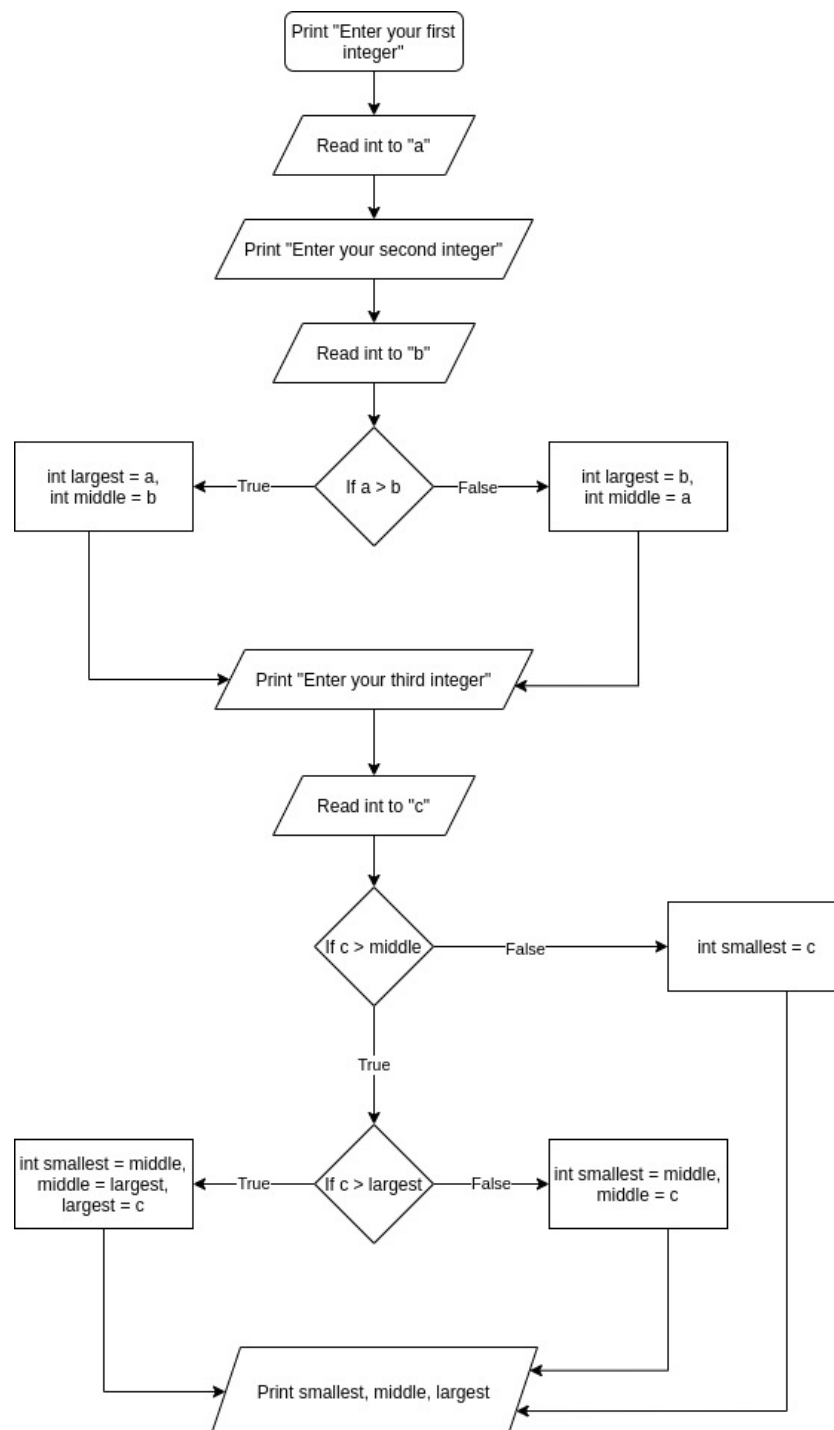
LogicalOps.java

The second program takes in an integer from the user, then prints whether or not it is divisible by:

- 5 and 6

- 5 or 6

- 5 or 6, but not both

Pseudocode:

Start

Print "Please enter an integer"

Read int to **num**

If   **num** % 5 == 0

    int **modBy5** = **true**

If   **num** % 6 == 0

    int **modBy6** = **true**

If   **modBy5** *and* **modBy6**

    int **modByBoth** = **true**

If   **modBy5** *or* **modBy6**

    int **modByOne** = **true**

Print "Is " + **num** + " divisible by 5 and 6? " + **modByBoth**

Print "Is " + **num** + " divisible by 5 or 6? " + **modByOne**

Print "Is " + **num** + " divisible by 5 or 6, but not both? "

If   **modByOne** *and* !**modByBoth**

    Print modByOne

else

    Print false

RSPGame.java

The third program is a rock paper scissors game. The user is asked to input one of three integers:

- 0 for rock

- 1 for scissors

- 2 for paper

The program then randomly selects one of the three same integers. The two are then compared to determine if the computer or user wins or if there is a draw.

Pseudocode:

Start

Print "Select: rock (0), scissors(1), paper(2)"

Read int to **user**

Compute int **computer** (random number between and including 0 and 2)

Print "The computer played:" **computer**

Print "You played:" **user**

If (**user** = 0 *and* **computer** = 1) *or* (**user** = 1 *and* **computer** = 2) *or* (**user** = 2 *and* **computer** = 0)

    Print "You win!"

else if (**computer** = 0 *and* **user** = 1) *or* (**computer** = 1 *and* **user** = 2) *or* (**computer** = 2 *and* **user** = 0)

    Print "You Loose!"

else

    Print "It's a draw!"