**Software Development Report**

for

# CSC 121: Programming I: Spring 2022

**Arithmetic tables**

by

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**Problem summary:**

The program is to output an arithmetic table with a maximum of 99 lines and rows of the operation desired by the user (addition, subtraction, multiplication, division).

**Problem Requirements:**

* Determine which operation has to be executed (addition, subtraction, multiplication, division)
* Only the first letter of the operation has to be inputted to avoid misspellings
* Output an arithmetic table with the operations
* Output the specified amount of rows/columns
* The table must be perfectly aligned

**Sistem design:**

* Define operations and make them work by only inputting the first letter
* Ask the operation wanted
* Define different cases
* For each case input the number of rows/columns
* Formatting rows and columns
* Make the operation
* Output table

**Testing Report**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Case | Input | Expected Output | Generated output | Pass? |
| S1 | a  10 | Addition table | Addition table | Yes |
| S2 | s  12 | Subtraction table | Subtraction table | Yes |
| S3 | m  10 | Multiplication table | Multiplication table | Yes |
| S4 | d  20 | Division table with decimals | Division table with decimals | Yes |
| S5 | m  99 | Well-spaced multiplication table | Well-spaced multiplication table | Yes |
| S6 | a  120 | Error | 120 rows/columns table | No |
| S7 | D  4 | Division table with decimals no problem with uppercase | Division table with decimals no problem with uppercase | Yes |
| Er1 | b | Invalid choice | Invalid choice | Yes |
| Er2 | ) | Invalid choice | Invalid choice | Yes |
| Er3 | 1 | Invalid choice | Invalid choice | Yes |
| Er4 | Mutiplicazion | Invalid choice | Invalid choice | Yes |

**Time Spent**

This program and development report took me about 2 hours to modify.

**Outside resources used**

Examples from the lectures, labs, and mostly the internet (how to do a division with decimals converting int to double, how to convert uppercase to lowercase) were used to develop this program.

**Security report**

* No security problems

**Ethical report**

* There are no ethical issues with this software.

**Future Improvements**

* Limit the number of rows and columns to 99.

# Lessons learned

* How to use a switch statement
* Getting better with loops
* How to format tables
* How to format tables with decimals
* Convert uppercase to lowercase