```
Script started on 2023-11-26 15:10:08-06:00 [TERM="xterm" TTY="/dev/pts/0" COLUMNS=
a_vitale3@ares:~$ pwd
/home/students/a_vitale3
a_vitale3@ares:~$ cat RomanNum.info
Name: Andrew Vitale

Class: CSC121



Activity: Roman Numeral Conversion

Level: 3



Description:



This Program takes a number between 0 and 4,000 and converts it into a roman numera

a_vitale3@ares:~$ show-code RomanNum.cpp


RomanNum.cpp:
```

```cpp
#include <iostream>
#include <limits>
#include <string>

using namespace std;

int main(void)
{
        unsigned short Input;
        string RomNum;
        char user = 'y';

        cout << "Welcome to the RomNum Numeral Calculator!\n";

        while(user != 'n')
        {
                cout << "Enter a number between 0 and 4000: ";

                cin >> Input;

                if(Input <= 0 or Input > 4000)
                {
                        cerr << "Please make sure to enter a number betwee
                }
                else
                {
                        while (Input != 0)
                        {
                                if (Input / 1000 > 0)
                                {
                                        RomNum += "M";
                                        Input -= 1000;
                                }
                                else if (Input / 100 > 0)
                                {
                                        if (Input / 100 % 4 == 0 or Input /
                                        {
                                                RomNum += "C";
                                                Input += 100;
                                        }
                                        else if (Input / 100 % 5 == 0)
                                        {
                                                RomNum += "D";
                                                Input -= 500;
                                        }
                                        else
                                        {
                                                RomNum += "C";
                                                Input -= 100;
                                        }
                                }
                                else if (Input / 10 > 0)
                                {
                                        if (Input / 10 % 4 == 0 or Input /
                                        {
                                                RomNum += "X";
                                                Input += 10;
                                        }
                                        else if (Input / 10 % 5 == 0)
                                        {
                                                RomNum += "L";
                                                Input -= 50;
                                        }
                                        else
                                        {
                                                RomNum += "X";
                                                Input -= 10;
                                        }
                                }
                                else
                                {
                                        if (Input % 4 == 0 or Input % 9 ==
                                        {
                                                RomNum += "I";
                                                Input += 1;
                                        }
                                        else if (Input % 5 == 0)
                                        {
                                                RomNum += "V";
                                                Input -= 5;
```

```
    81                                          }
    82                                          else
    83                                          {
    84                                                  RomNum += "I";
    85                                                  Input -= 1;
    86                                          }
    87                                  }
    88                          }
    89                          cout << "Your RomNum Numeral Would be " << RomNum <
    90                          RomNum.clear();
    91                          cout << "Would you like to convert to RomNum numera
    92
    93                          cin >> user;
    94                          cin.ignore(numeric_limits<streamsize>::max(), '\n'
    95
    96                  }
    97          }
    98
    99
   100          return(0);
   101  }
a_vitale3@ares:~$ CPP RomanNum
RomanNum.cpp***


a_vitale3@ares:~$ ./RomanNum.out
Welcome to the RomNum Numeral Calculator!
Enter a number between 0 and 4000: -23
Please make sure to enter a number between 0 and 4000.
Enter a number between 0 and 4000: 5234
Please make sure to enter a number between 0 and 4000.
Enter a number between 0 and 4000: 124
Your RomNum Numeral Would be CXXIV
Would you like to convert to RomNum numerals again?
yes
Enter a number between 0 and 4000: 3567
Your RomNum Numeral Would be MMMDXLIIV
Would you like to convert to RomNum numerals again?
y
Enter a number between 0 and 4000: 0345
Your RomNum Numeral Would be CCCXLV
Would you like to convert to RomNum numerals again?
yes please
Enter a number between 0 and 4000: 937
Your RomNum Numeral Would be CMXXXIIV
Would you like to convert to RomNum numerals again?
no
a_vitale3@ares:~$ cat RomanNum.tpq
Q1:

Is there a simple repeating pattern

here that might help you extract commonality and save coding time?
```

A1:

every 1, 2, 3, and 4 above 0, 5, 10, 15, 20, etc you add am I, II, III, and IV.

Q2:

How does modulo fit into this scheme?

A2:

modulo is used in this program to determine if the entered number has the required

in the input to add the coresponding letter to add onto the string.

Q3:

Why will your program only work for values in the (integral) range [1..3999]?

A3:

the program will only work for values inbetween 1 and 3,999 becuase you

can not divide by 0 and the roman numeral for 4,000 and 5,000 is a IV and

V with an underscore on top of both.

Q4:

For the conversion of each digit to Roman form (except maybe the thousands digit),

you should have four branches. How many are cascaded from one another?

How many of these branches are nested aside from cascading?

A4:

3 are cascaded from another.

none are nested.

Q5:

What is the purpose of each of the three loops in your program?

A5:

the purpose of the three loops in the program are to detect if the input has the re

numerical value to add the corresponding letter onto the string at the end until th

is returned as 0.

Q6:

How many tests would be required to completely test this program?

A6:

one for 0, two for below and above 0 and 4,000, and a couple to test the roman nume

are correct.

Q7:

Why does Jason want us to convert numbers from a dead civilization, anyway?

A7:

most of the time it is used in papers to list things, I don't know why jason would

to list to 4,000... maybe if he needs to turn the year into a roman numeral.

Q8:

How can your program allow the user to type both y and yes for their again response

A8:

I made this happen by requiring the user to enter 'n' to stop looping.

Q9:

How can your program allow the user to type both y and Y for their againresponse?

A9:

for my program I made it loop as long as the user does not enter 'n.'

Q10:

How can you have your program print different response text before

(and after?) the Roman numeral result?

A10:

by using the << before and after the break in the text to display the output.

a_vitale3@ares:~$ exit
exit

Script done on 2023-11-26 15:11:26-06:00 [COMMAND_EXIT_CODE="0"]