COP 3337 Assignment 1

Problem 1

- Syntax error
    - An error that is due to code structure problems.
    - For example, missing a semicolon at the end of a line would produce a syntax error.
- Runtime error
    - An error that happens when code is running and something impossible to execute is reached.
    - Dividing by zero would cause a runtime error.
- Logic error
    - The program runs when there is a logic error; however, it does not work as intended due to a coder's fault.
    - A very common logic error is using integer division when it is intended to use floating point division. The mathematical answer to the problem 3/2 is 1.5, but in C++, this operation yields 1 because the division is with integers.

Problem 2

- 56 % 6 = 2
- 2 + 78 % 4 = 4
- (34 % 5) / 3 = 1
- 2 * 5 / 5 + 3 - 34 % 15 = 1
- 5 % ((13 % 12) − 1) = DIVIDE BY 0 ERROR

Problem 3

```
Enter an integer number to see if the given number is divisible by 4 or not: -16
The program does not accept negative numbers.

Enter an integer number to see if the given number is divisible by 4 or not: 16
The given number 16 is not divisible by 4.
Quotient: 4 Remainder: 0

Enter an integer number to see if the given number is divisible by 4 or not: 16
The given number (16) is divisible by 4.
Quotient: 4 Remainder: 0

Enter an integer number to see if the given number is divisible by 4 or not: 15
The given number (15) is not divisible by 4.
Quotient: 3 Remainder: 3

Enter an integer number to see if the given number is divisible by 4 or not: 121
The entered number is greater than 100 and square root of the number is 11
```

Problem 4

```
Enter the side: 5.5                    Enter the side: 20
The area of the hexagon is 78.59       The area of the hexagon is 1039.23
```

Problem 5

```
Enter a string: Programming is fun!
rgamn sfn

Enter a string: This is assignment 1, I hope it is easy!
hsi sinet1  oei ses!
```

Problem 6

```
Enter an integer between 0 and 1000000: 932
The sum of the digits is 14.

Enter an integer between 0 and 1000000: 123456
The sum of the digits is 21.

Enter an integer between 0 and 1000000: -10
Entered integer is not in range.
Enter an integer between 0 and 1000000: 2067
The sum of the digits is 15.
```

Bonus

```
Enter an integer between 0 and 1000000: 999
The sum of the digits is 27.
Sum has more than one digit. Repeating adding process.
The sum of the digits is 9.

Enter an integer between 0 and 1000000: 23846
The sum of the digits is 23.
Sum has more than one digit. Repeating adding process.
The sum of the digits is 5.

Enter an integer between 0 and 1000000: 17
The sum of the digits is 8.
```