

TK1914 C++ Programming

Lab: Repetition Structure

1. Write a program that will find the smallest, largest, and average values in a collection of N numbers. Get the value of N before reading the numbers.

Sample Execution

```
Enter number of data: 5
Enter data: 3 4 2 7 4
Smallest: 2
Largest: 7
Average: 4.0
```

2. The Fibonacci sequence is a sequence of numbers beginning
1, 1, 2, 3, 5, 8, 13, 21, ...
The first two elements are defined to be 1. Each of the other elements is the sum of its two predecessors. Write a program that takes a value for N in the range 1 to 30 and displays the first N elements of the Fibonacci sequence.

Sample Execution

```
Enter N: 9
Fibonacci sequence: 1 1 2 3 5 8 13 21 34
```

3. Write a program which prompts the user to enter an integer between 1 and 9. Based on the inputted number, the program outputs a triangular textual shape using digits (see below).

Sample Execution

```
Enter N: 5

12345
1234
123
12
1
```

4. Write a program which prompts the user to enter an integer whose value is more than 3. Based on the inputted number, the program outputs a rectangular textual shape using digits (see below).

Sample Execution

```
Enter N: 5

*****
*   *
*   *
*   *
*****
```

5. An integer P is called a prime number if the only positive integers that divide P are 1 and P itself. Write a program which inputs a number N between 2 and 100 and then loops through integers 2 to N and displays only those numbers which are prime.

Sample Execution

```
Enter N: 15  
2 3 5 7 11 13
```