

CS1050 – Prelab3

Spring 2019

Concepts to Practice

- For loops
- Do/while loops
- Switch

Description

For the prelab assignment, you may **not** use the if statement nor may you use the if/else statement. You are to write a program that calculates factorials from 1 up to and including a maximum number given by the user. Because factorials get large quickly, use long unsigned int as the type for the number entered by the user as well as the factorials you are calculating. If the user enters a 0, print an error message.

Hints:

- Just avoid extremely large numbers by only entering maximums that are 20 or less.
- If you need a reminder on what a factorial is, see <https://en.wikipedia.org/wiki/Factorial>

Sample Output 1 (bold and underline shows user input)

```
JimR@JimRArea51:$ compile prelab3.c
```

```
JimR@JimRArea51:$ ./a.out
```

```
Enter the highest factorial you wish to calculate: 5
```

```
Calculating factorials up to 5
```

```
1! = 1
```

```
2! = 2
```

```
3! = 6
```

```
4! = 24
```

```
5! = 120
```

```
Enter 0 to quit or 1 to continue: 1
```

```
Enter the highest factorial you wish to calculate: 12
```

```
Calculating factorials up to 12
```

```
1! = 1
```

```
2! = 2
```

```
3! = 6
```

```
4! = 24
```

```
5! = 120
```

```
6! = 720
```

```
7! = 5040
```

```
8! = 40320
```

```
9! = 362880
```

```
10! = 3628800
```

```
11! = 39916800
```

```
12! = 479001600
```

```
Enter 0 to quit or 1 to continue: 1
```

```
Enter the highest factorial you wish to calculate: 0
```

```
** Error: You must enter a positive number
```

```
Enter 0 to quit or 1 to continue: 0
```

```
Thanks for playing!
```