

COMP2113/ENGG1340 Computer Programming II

Quiz 1

Mar 24th, 2020

Time Allowed: 60 minutes for doing the Quiz Q1-10; submit the video link within 60 mins to Moodle after the quiz

Max 11 marks (Total 10 marks for the quiz, extra one mark for submitting a video link to explain the idea of doing Q10)

For Q1-Q10, please finish them in the Quiz section on Moodle (Note: Q10 is a VPL question and please make sure your file is in .cpp format). You are requested to have a 1-min video recording to explain your idea (i.e. how did you limit the number of multiplication/division operations to n?) for doing question 10. Refer to "Video Record Guideline" in Moodle for details.

Q.1 (0.5%) In Linux/Unix, the _____ command is used to list contents of directories?

- A. folder
- B. ls
- C. ld
- D. grep

Answer: _____

Q.2 (0.5%) In Linux/Unix, the _____ command(s) can be used to remove directories?

- A. rm -r
- B. rmdir
- C. rmdir and del
- D. rmdir and rm -r

Answer: _____

Q.3 (0.5%) In Linux/Unix, how to rename a file "A.txt" to "B.txt"?

- A. rn B.txt A.txt
- B. mv B.txt A.txt
- C. rn A.txt B.txt
- D. mv A.txt B.txt

Answer: _____

Q.4 (0.5%) Write at least three commands or editors that allow you to show the content of a file in Linux/Unix.

Answer: _____

Q.5 (1%) Finish this task using a combined command (a.k.a. piping) using four individual commands. *Task:* Find all lines containing the keyword "was" from file

“opening_lines.txt” and sort the lines alphabetically. Pick the first five of the sorted lines and count how many characters are in the five lines.

Answer: _____

Q.6 (0.5%) Which type of error is caused when you mistype something in C/C++ programming?

- A. Runtime error
- B. Logic error
- C. Browser error
- D. Syntax error

Answer: _____

Q.7 (0.5%) ‘cout’ is?

- A. a Class
- B. an Object
- C. a Package
- D. a Namespace

Answer: _____

Q.8 (1%) What will i and j equal after the code below is executed?

```
int i = 0;
unsigned int j = i--;
```

Answer: _____

Q.9 (1%) How many rows of “aha” will be printed?

```
unsigned char halfLimit = 150;

for (unsigned char i = 0; i < 2 * halfLimit; ++i)
{
    cout << "aha\n";
}
```

Answer: _____

Q.10 (4%) Fill in the body of the function below. The function will return the Combination $C(n, r)$ of two integer inputs n and r , $n \geq r \geq 0$, where $C(n, r) = \frac{n!}{r! \times (n-r)!}$ and $i! = 1 \times 2 \times 3 \times \dots \times i$ is the factorial of i .

NOTE: Your function can make use of no more than n times of multiplication / division in the calculation.

After you have implemented the function correctly, the following function calls

`f1(12, 4)`

`f1(20, 3)`

will return the values 495 and 1140, respectively.

Please use the template below when you are doing this question in Moodle VPL.

```
#include <iostream>
using namespace std;
int f1(int n, int r) {
    // Implement your function here.
}

int main()
{
    int n,r;
    cin>>n;
    cin>>r;
    cout<<f1(n,r)<<endl;
}
```