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Script started on Tue 21 Feb 2012 11:32:38 PM CST
\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ p
wd
/home/georgia/cplusplus
\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ C
PP --version
This is CPP version 1.219 executing under perl v5.12.4 and compiling with:

g++ (Ubuntu/Linaro 4.6.1-9ubuntu3) 4.6.1
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\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ c
at monogram.info
Name: Jakob Hansen
Class: CSC121 - Evening Section
Lab: Monograms'r'us

Levels attempted:

1.5 - For just getting the basic instructions down.

+1 - For different style monogram display.

+1 - For optional periods.

Program Description:

A program that will create a stylized monogram for the user in two different
forms. The user may enter their initials as caps or lowercase, with or without
periods, and with spaces in strange places and the program will produce a
beautiful monogram.

\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ c
at monogram-done.cpp
#include <iostream>
#include <cctype>
#include <climits>

using namespace std;

int main(void)
{
    char first;
    char middle;
    char last;
    char t;

    cout << "\n\t\tThis program will help you rearrange your initials."
    << "\n\t\tIn other words, it will make a Monogram for you."
    << "\n\tPlease enter your initials :";

    cin >> first >> ws;

    if (cin.peek() == '.')
    {
        cin >> t >> middle >> ws;
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    }
    else
    {
        cin >> middle >> ws;
    }
    if (cin.peek() == '.')
    {
        cin >> t >> last;
        cin.ignore(INT_MAX, '\n');
    }
    else
    {
        cin >> last;
        cin.ignore(INT_MAX, '\n');
    }

    cout << "\nThank you very much for your diligent work."
    << "\nYour monogram will be either: "
    << static_cast<char>(toupper(middle)) << "."
    << static_cast<char>(tolower(first)) << "."
    << static_cast<char>(toupper(last)) << "."
    << "\n\nor:"
    << "\n"
    << static_cast<char>(toupper(middle)) << " "
    << static_cast<char>(toupper(last))
    << "\n"
    << static_cast<char>(toupper(first))
    << "\n\nThank you for using the Monogram Program!\n\n";

    return 0;
}
\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ .
/monogram-done.out

        This program will help you rearrange your initials.

        In other words, it will make a Monogram for you.

Please enter your initials :j.c.gh

Thank you very much for your diligent work.

Your monogram will be either: C.j.H.

or:

                C H
                J

Thank you for using the Monogram Program!

\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ .
/monogram-done.out

        This program will help you rearrange your initials.

        In other words, it will make a Monogram for you.

Please enter your initials :j . c . h

Thank you very much for your diligent work.

Your monogram will be either: C.j.H.

or:

                C H
                J

Thank you for using the Monogram Program!
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\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ ./monogram-done.out

    This program will help you rearrange your initials.

    In other words, it will make a Monogram for you.

Please enter your initials :jch

Thank you very much for your diligent work.

Your monogram will be either: C.j.H.

or:

                C H
                J

Thank you for using the Monogram Program!

\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ ./monogram.out\033[K\033[K\033[Kdone.out

    This program will help you rearrange your initials.

    In other words, it will make a Monogram for you.

Please enter your initials :J . C.      h

Thank you very much for your diligent work.

Your monogram will be either: C.j.H.

or:

                C H
                J

Thank you for using the Monogram Program!

\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ cat monogram.tpq
1. What function(s) do you need to use? What library are they from?

I used the toupper() function from the ctype library, the .peek() and .ignore() functions from the istream library, and the INT_MAX constant from the climits library. I also used the whitespace operator from the istream library.

2. Is the spacing the user typed between their initials necessary? What happens if they leave it out? Have more than one space? What happens if the user doesn't type letters for their initials? What happens for digits? Symbols?

Without the ws operator and the .ignore() function, cin doesn't read the last character if there is a space between the second character and the period. after I added the whitespace operator after cin reads the first and second character, spaces can be added willy nilly and the output remains correct. Spaces can be left out entirely as well.
Since the variables that hold the initials are char type, if numbers or symbols are entered instead of letters, they are just stored as characters and displayed in the output as if they are letters.

3. How can you get the first initial to line up under the others on the next line?

I simply used spaces within a "literal" to line up the characters. I counted the number of characters in the first line and then typed that many spaces.

4. Does it matter if there is spacing between the user's initials and the .?

No, see question #2
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5. Does it matter if they use a .? (Will some other symbol/digit/letter do? Can they leave it out?)

If a character that's not a '.' is entered, cin reads it into the char variable and displays it as one of the initials. If a period is entered (between the initials) it just gets ignored. If one entered 6 periods of course, three would be ignored and three would be read into the "initials" variables.

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\033]0;georgia@georgia-MT6017: ~/cplusplus\007georgia@georgia-MT6017:~/cplusplus$ exit
exit
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Script done on Tue 21 Feb 2012 11:34:19 PM CST