SD11 Q1 Assignments – Week 1

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Assignments must be finished before the week 2 practicum!

Assignment 1.1: Hello Application

Write a console application, which shows, for instance, your name, your country and some more information about you.

Note: you do not need to ask for the information before displaying it.

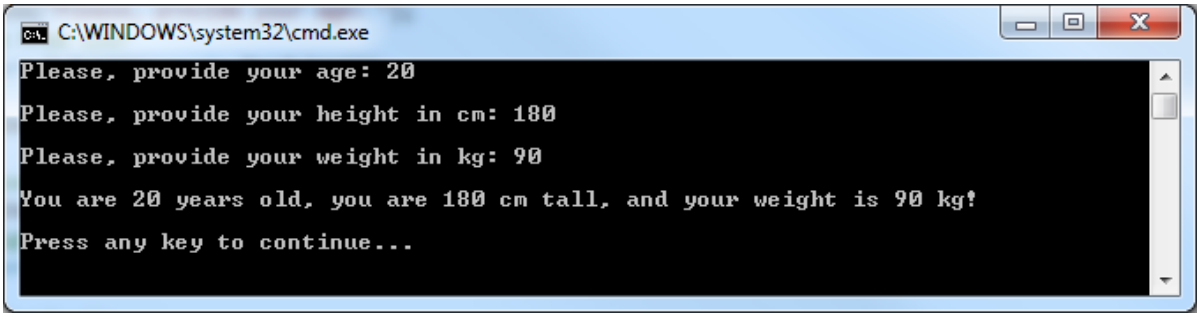
Assignment 1.2: My Age

Write a C++ program using a variable to store the age of a person. The output of the program could look like the example below:

I am 20 years old.

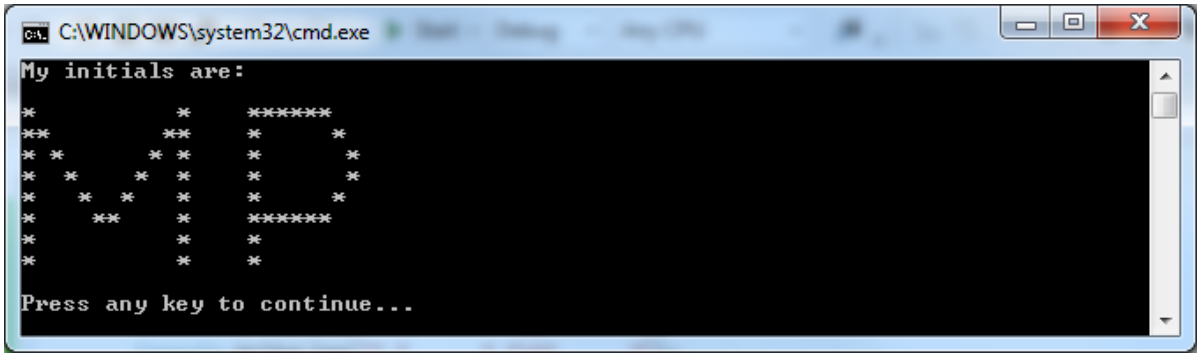
Assignment 1.3: My Data

Write a C++ program to prompt a user to input his/her age, height and weight, and then the output will be shown as in the example below:



Assignment 1.4: My Initials

Write a C++ program which shows your initials. For example, if your name would be Mary Poppins, then the output of the program would look like the example shown below:



a) Implement this program for your own set of initials.
b) Could you use the same approach if a user would be asked to enter his/her initials?

Note: you do not need to implement the program for question b. You just need to answer "yes" or "no" with an argumentation why / why not.

Assignment 1.5: Code debugging

Suppose x, y, and z are **int** variables and x = 2, y = 5 and z = 6. What is the output of each of the following statements?

a) `cout << "x = " << x << ", y = " << y << ", z = " << z << '\n';`
b) `cout << "x + y = " << x + y << '\n';`
c) `cout << "Sum of " << x << " and " << z << " is " << x + z << '\n';`
d) `cout << "y / x = " << y / x << '\n';`
e) `cout << "2 times " << x << " = " << 2 * x << '\n';`

For each statement, first think of what will be printed to the screen. After that verify your answer by putting the statement into the main function of a program (that also assigns the values to x, y and z).

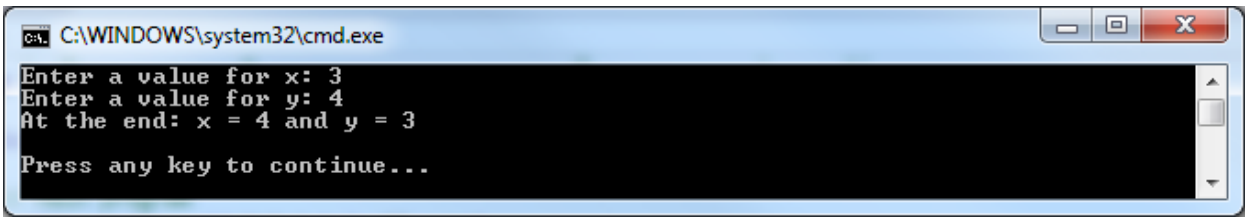
Note: don't worry if your answer is not correct. We'll discuss this in more detail next week.

Assignment 1.6: Exchange the content of 2 variables

Write a C/C++ program to exchange the content of two integer variables (x and y).

The program first reads the initial values of x and y. Then your code must swap the content of the 2 variables and at the end the program should display the new values of both x and y. Think about the design of your code first, before you implement!

No cheating allowed: you must really swap the content of the variables!



Assignment 1.7 (optional): Code implementation

Consider the following program segment

```
//include statement(s)

int main()
{
    //variable declaration

    //executable statements

    //return statement
}
```

a) Write C++ statements that include the `iostream` header.
b) Write a C++ statement that allows you to use `cin` and `cout` without the prefix `std::`.
c) Write C++ statements that declare the variables: `num1`, `num2`, `num3` and `average` of type **`int`**.
d) Write C++ statements that store 125 into `num1`, 28 into `num2`, and -25 into `num3`.
e) Write a C++ statement that calculates the average of `num1`, `num2` and `num3`, and stores this into `average`.
f) Write C++ statements that output the values of `num1`, `num2`, `num3`, and `average`.
g) Compile and run your program.