

Tutorial (Advanced Programming) Worksheet 1:

Assignment 1: Hello World

Hello world is one of the most traditional introductions to almost every programming language. Therefore we may not miss it in our tutorial!

```
#include <iostream>

int main(int argc, char *argv[])
{
    std::cout << "Hello World!" << std::endl;
    return 0;
}
```

Have a look at the lecture slides which already give an introduction to the *Hello World* program.

Compile & execute a hello world program.

Homework assignment 1: Average-calculator

This assignment is about the implementation of a simple average-calculator which reads in two values and outputs the average of both variables.

Since you are already familiar with writing data to the terminal, we continue by reading variables from the terminal by using *std::cin*: In case that you want to read a single number from the terminal, you can use *std::cin* which is made available via including *iostream*.

```
double foo;
std::cin >> foo;
```

std::cin automatically converts the input string into a type which is appropriate to the destination variable. For the previous example, the destination type would be *double*.

Now your task is to write a program *averageCalculator.cpp* which reads in two variables by using *std::cin* and outputs the average of both values. Both values should be of type *double*.

Questions:

Answer the following questions:

- What is a compiler?

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- What is the difference between Java and C?
 - What is a preprocessor (*#include*)?
 - Is there a difference between $(a+b)*0.5$, $(a+b)/2.0$ and $(a*0.5+b*0.5)$?
If there's a difference, how do you account for that?