

Hi, in this short video,

we will solve a code problem together. The problem itself is quite elementary. So the main purpose of this video is to show you the general pipeline of solving code problems in this class. The problem is called A plus B. In this problem, you are given two integers  $a$  and  $b$  as input digits on the standard input and our goal is to output their sum on the standard output. You can see two sample tests here on the page. For example, if the input for your program consists of the integers 3 and 2, then your program should output 5. If, on the other hand, the input consists of two integers 7 and 9, then your program is supposed to output 16, of course. The next section consists of three Starter files. Which in this particular case are actually solutions, not just starter files. So the files are for programming languages Python, Java, and C++. Finally the last section contains an instruction consisting of four steps on how to solve this problem. So let's go through these four steps together. The first step is to download one of the starter files. For this, let's select the C++ starter file, and let's download it. Okay. Now the file is here and let's take a look inside. So, this is a very simple solution which, first, creates three variables. Then it reads  $a$  and  $b$  from the standard input. Then it computes the sum. And then finally it outputs the sum on the standard output. So to run this program we first need to compile it. So this is the second step of our instruction. For this we highly recommend to use the same compiler flags that are shown on this page. This will ensure that your program behaves in the same way on the testing system and on your local machine. So in this case let's

just copy the flags and use it to compile our program. So this produced an executable file `a.out` and we can now run it. Let's give this program for example 2 and 3. So the output is 5. Well, one more test. 9 and 4, the output is 13 as expected. So far, so good. Let's submit this solution to this problem. Let's go to my submission tab. Press create submission, then replace a file by this `.cpp` file And press the Submit button. So after a while, the testing system shows the output which is quite satisfactory. In this particular case, the grader output is empty, meaning that there is no error message in this case. To illustrate it one more time, let me repeat the whole procedure quickly for the Python programming language. So we first download the starter Python file. Let's take a look at what is inside. So the program is again very simple as expected. So we just take `a` and `b` from the standard input and we output the sum of `a` and `b`. Now we need to run this program for this you might want to go to the available programming languages page. Again just to check how we run Python scripts so we just use Python, Python 3. So let's do this. For example 4, 4 and 4, the output is 8 which is as expected. So let's just go ahead and submit this solution. So you go to the my submission tab, you press the Create Submission button and then you replace this file by `APlusB.py`. So when the file is uploaded you finally press the Submit button. So in a few seconds, this solution will be accepted by the testing system. Well this wasn't very challenging, right? In the next video we will see a more challenging computational problem. For this problem we will start with a naive solution. We will submit this solution to a testing system to figure out that it is buggy actually. That there is a bug. So we will fix this bug, submit it again, to find out that our solution is slow. We will get a time limit exceeded feedback message from the testing system. Meaning that for large data sets it works in more than one second, for example. So this will require us to come up with a much, more faster solution. We will implement it,

submit it to the system, again, to find out that it is still buggy. We will use stress testing to locate the bug, to fix it, and to finally submit a correct solution to the system which will pass all the tests.