



IIT Madras

ONLINE DEGREE

Programming in Python
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Introduction

I quoted the example of driving a car the last week and this week I will continue quoting the same example. Now, because I did not find, I do not think there is a better example to explain how important it is for us to start learning, I mean start driving the car, start writing the program than simply keep looking at theory and syntax and then, lecture videos are very important. But once you understand what is what, you probably should move ahead, and then start coding.

That is the first point I would like to tell you for the beginning of the second week and as you know, we tried (giving) making you warm up for programming and please note the things are not as simple as it appeared in week 1, things are going to get more complex and that is the very reason why we use the computer.

Programming is all about doing complex things quickly and easily as I keep saying. So this week, we are going to see a few more top ups to programming skill set, which will be; firstly, we will tell you what one means by a variable. It may sound like Greek for you, if you are listening it for the first time, but you will get used to it.

We keep buckets in our houses to store entities and we have different kinds of buckets, different kinds of jars. The vessel you use to store milk is not used to store let us say, plain rice. The glass you used to drink water is a different glass as compared to what you use glass to drink coffee or tea.

We have our own maybe fancy variants there. But actually, strictly speaking, certain things can be put in certain objects only. So very similarly when a computer has different kinds of baskets for different types of entities. If you want to store an integer, computer stores it in a different way; if it is a floating point number or let us say a real number, it stores it in a different way. If it is a string, the computer stores it in a very different way.

So we are going to discuss that to begin with, we are going to introduce you all to what is called variables. Variables, in other words, in a layman's language is a basket as in real life and we need to spend some time there, thanks to Python, things are very, very simple as

compared to, let us say, the programming language that that were there in the 90s, as I keep saying, things were very hard there.

Here, Python gives you the flexibility to declare these baskets very easily. We will be starting with variables and we will go ahead with some print statement, some advanced ideas, which I think is important for you all to learn and after that, we will be moving ahead to the if loop conditional statement, which is; it sounds very complicated, it does not even sound like English, if I say if loop, but then with time, you will realize that it is a very, very powerful entity in programming and if you understand it, you understand programming completely.

So basically, there is this triangle which I want you all to remember. The triangle with one point being if, the other being for and other being while. These three are three simple words in English, but in programming, they mean something else and you really need to know where to use if and how would you use for, how do you use while. Maybe confusing at this moment, but then please bear with me with time, you will realize what is what.

We will be discussing the if loop, writing a couple of code in this direction and I will be teaching you the science of secrecy in its simplest form. How would you encode text and send it so that nobody understands it in its very, very naivest form? In fact, do not take whatever we teach seriously because it is a very toy example. In fact, very advanced ideas will come later on in the course. But as of now, we are going to toy around with some very basic examples. That is with the first week.