IIT Madras

ONLINE DEGREE

Programming in Python
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A Quick Introduction to Variables

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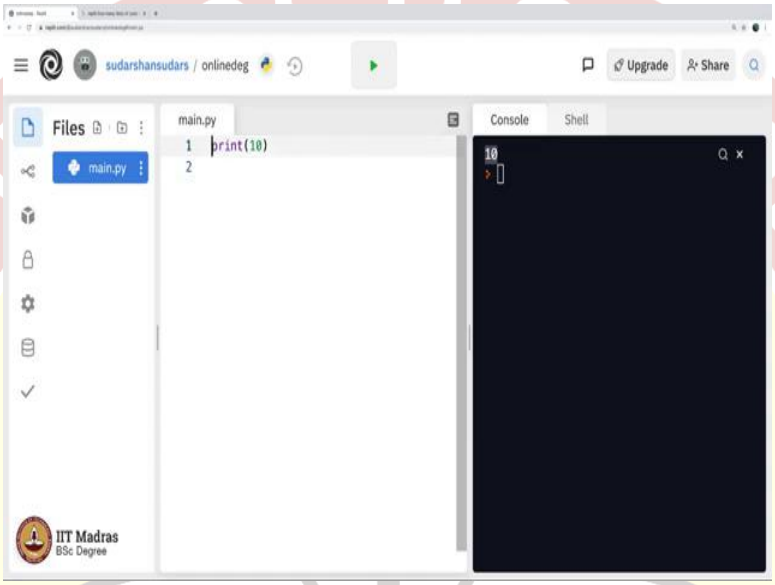

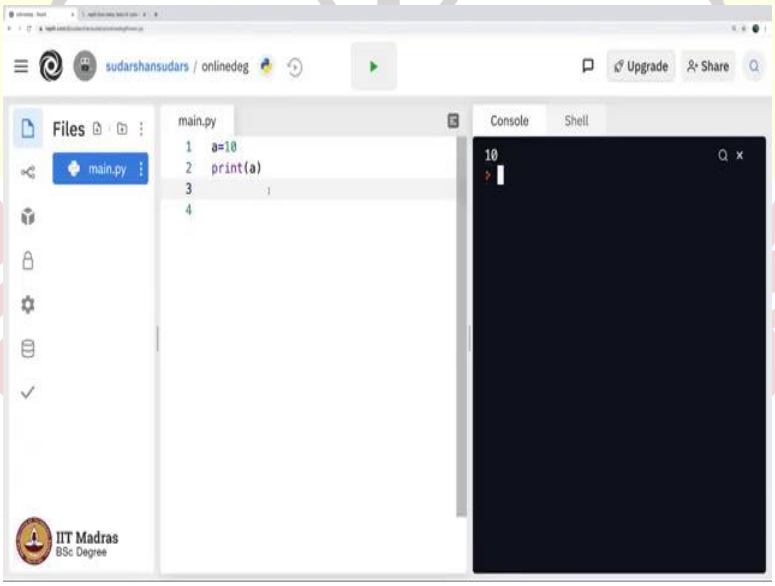

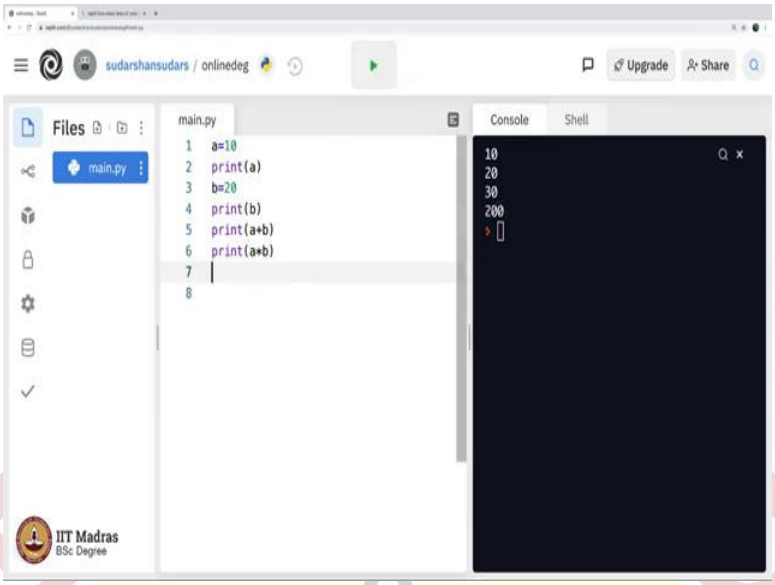

Let us get back to our print command and type this statement, as you can see I say print 10, when I execute this I see that 10 is being printed, displayed. Now, look at the small modification that I do. I remove this 10 here, just above the print statement, I say a equals 10, and then I include print a and what does this do? In mathematics we have observed this, we always declare a variable, we say let us call a variable; let us assign the value 10 to it.

A computer also sees this as the letter a is assigned the value 10 and you are printing a, which means whatever is assigned to this variable, will be printed here, as simple as that. So, when I execute this I continue to get 10, here as you can see. Now, if I were to say b equals 20 and then when I say print b, let me execute this.

I get print a, a gets printed here, print b, b gets printed here, which is 20. So, that is it, pretty self-explanatory. What is the big deal about it? Now, look at this. I will say print a plus b, so here is a plus b and then I say print a into b, I get a into b, which is 200, 10 times 200. Now, let me delete all these things start afresh.

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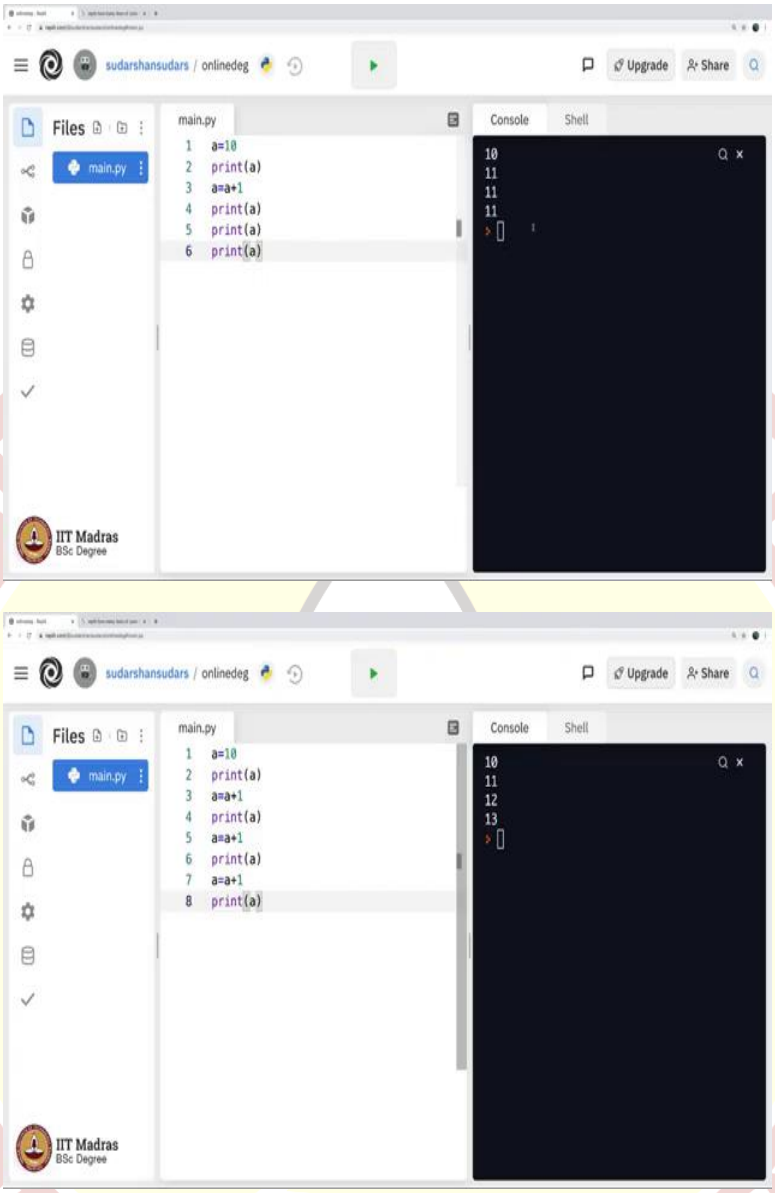

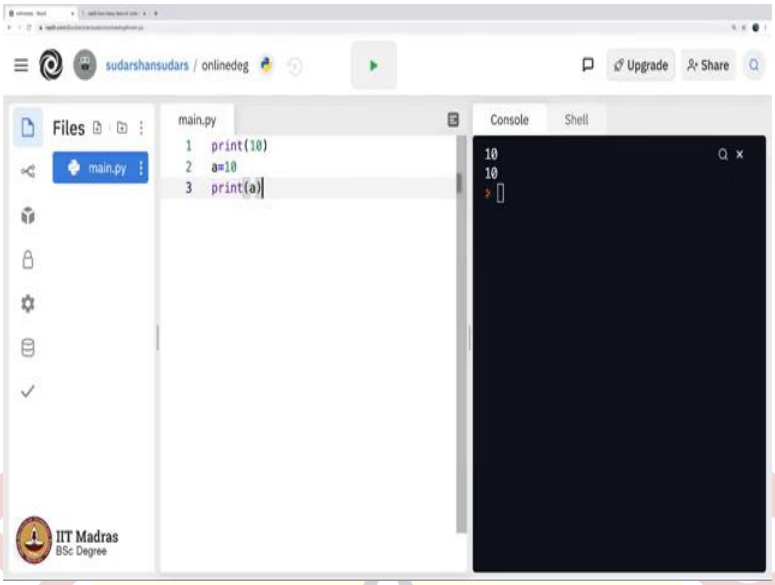

I will say a equals 10 as before and say print a, look at this, this is slightly counter intuitive. I say a equals a plus 1. In mathematics what does it mean? This means you can cancel a and a and 0 becomes equal to 1, which means this does not make sense in mathematics or the conventional way in which we have learnt algebra, this statement really does not make sense, but in computer science this is the most frequently used programming statement.

This simply means for the value of a, you take the existing value of a and add 1 to it, as simple as that, the best way to see how something works is to execute the program and then see it, so I have typed this program, it will of course, print the value of a here and then I do something here and then print, let see what that something results in. It tells you 11, which means the value of a right now is 11. Initially it was 10, now it is 11.

Now, if you print a once more, it will continue to stay 11, you see a is 11. Print a once again it says 11. So, let us do a small modification to this, in between can you guess what is going to happen if I do this, you have guessed it right, it is a very simple program which displays 10 increments and then displace increments is adding 1 to it, that is called incrementing in computer science.

So, a equals a plus 1 and then even in real life incrementing means going one step up, correct? So, you have 10, 11, 12 and 13, pretty simple. These are called variables where you instead of typing directly here as 10, you could do this, you could also do, a equals 10 and then say print a, as simple as that.

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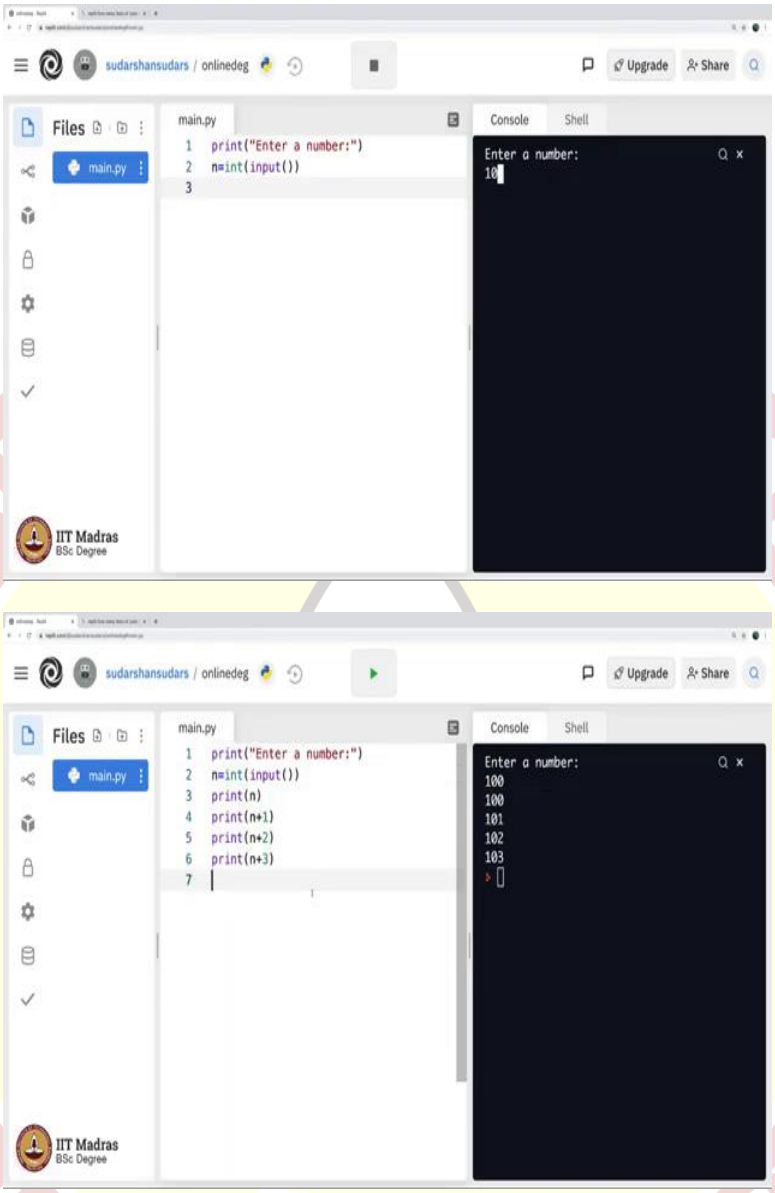

So, now let me try writing a small piece of code as and always, I will write the code and I will let you guess what this code is doing. I say print ‘enter a number’ what will this display as I execute, it just asks ‘print enter a number’, you can see the output this side you get ‘enter a number’ this side and that is it empty nothing else, so what you should do is you should let your user, I mean, you enter a number here.

How is that done? Just concentrate, it is a very quick command, it goes like this, that is, you may have to remember this, what exactly this does, we will discuss later, but then this will do the required magic look, the cursor is waiting for you to enter a number. When you enter some number here, and then press enter, the program ends.

Now, what I will do here is I will say print ‘n here’. Can you guess what this does? Firstly, it says enter a number and then waits for this line to happen, this line in Python stands for ‘please ask the person to input something, convert that to an integer and then assign it to ‘n’. When I say 10, it assigns the value 10 to n and then it prints n. Let me say it prints n plus 1, and then prints n plus 2 and print n plus 3 and so on.

I execute this remember it says; let me say 100, as you can see it displays 100, 101, 102, and 103. Exactly what is happening here? You may be a tad bit confused on what is this ‘int’ here. I will come there soon. It will be very clear to you in a minute’s time.