IIT Madras

ONLINE DEGREE

Programming in Python
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Different Ways to Import a Library

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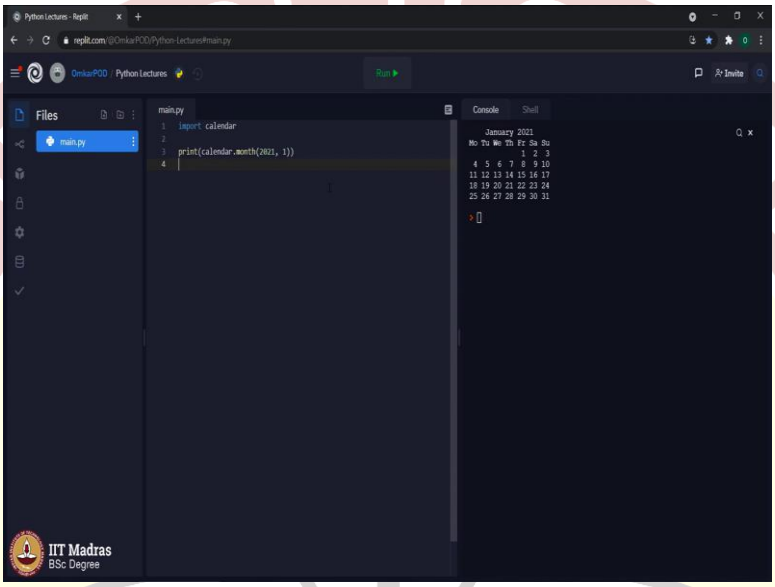

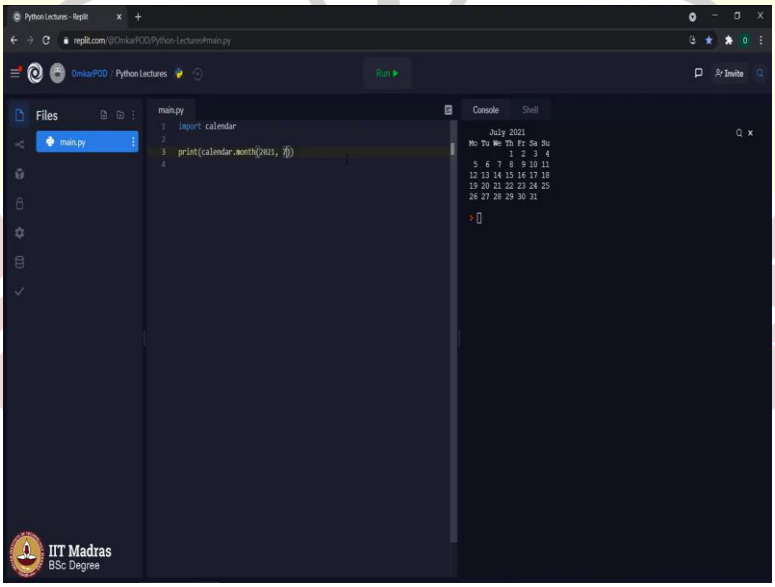

Hello python students. In previous lecture we discussed about import statement and we also saw how to import a particular library into python program. In that same lecture we also talked about two python libraries; math and random. We will introduce one more library called calendar and using that library we will discuss the main concept of this particular

lecture which is different ways to import a library into a python program. Let us start with calendar library.

Import calendar, print calendar dot month, let us say I want to display the calendar of 2021 and month let us say January. Let us execute and see what output we are getting. It displays the entire calendar of month January 2021. Similarly, you can change the month from Jan to let us say July and execute it again, it will display the calendar of month July.

You can always change these values for year and for month to get a calendar of that particular month of that particular year. But what if I do not want to display a calendar of only one month, let us say I want to display calendar of entire year 2021. Of course that is possible, let us see how to do that.

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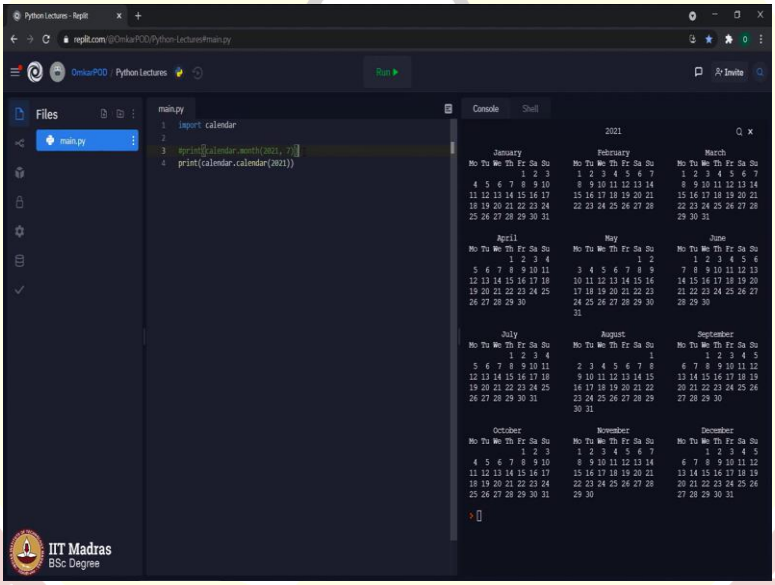

Print calendar dot calendar in bracket 2021, let me comment this line and let us execute the code, as you can see the entire calendar of year 2021 is displayed over here. Now you must be wondering why it says calendar dot calendar, now do not break your head over this particular way of writing the code, we will come to these concepts slowly in later weeks of this particular course.

Right now let us focus on different ways of input statement. So far we have imported the library calendar and used two different features of that particular library, first allows us to print a calendar for a month and second one allows us to print the calendar for entire year. So far we have discussed only about this kind of a import statement. Let us try another variation of this particular import statement. Let me remove this line.

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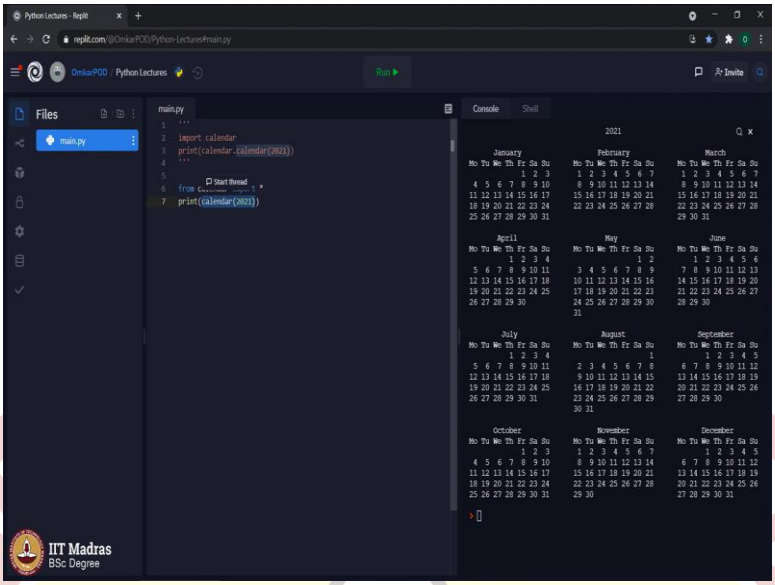

From calendar import star, print calendar 2021, let me comment this code, we all know how to comment a multiline code. Let us execute this, as expected we are getting the output where the computer is printing the calendar for entire year 2021. You must be wondering what is the difference between the earlier code and this new code?

Earlier we were writing import calendar, then we say import calendar brings the entire library calendar into this python program and anything inside that library can be accessed only through this particular word calendar. Due to which we always have to write calendar dot calendar or calendar dot month as we saw earlier.

But in second case, when we said from calendar import star, which means we are telling the computer to bring everything inside the calendar library into this particular python program. Due to which now we do not have to write calendar dot calendar, we can directly access this particular feature called calendar and pass the value for year as 2021.

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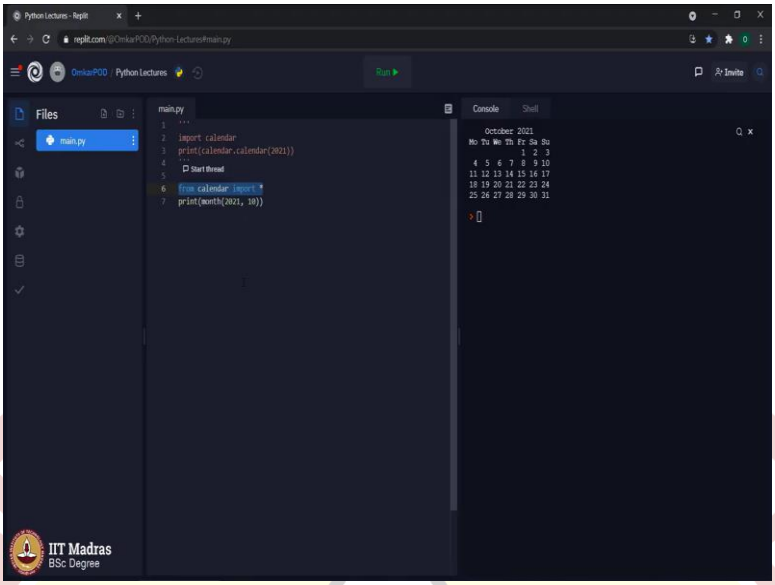

Same thing can be done for month as well, let us see month 2021 and 10th as a month October. We are getting October month of 2021. Once again we did not write calendar dot month, we only wrote month, because as I explained earlier, in first case we are telling computer to bring the entire library called calendar into python program whereas in second case, we are asking computer to bring everything inside that calendar library into this python program. Due to which now computer knows that there is something called as month in that particular library.

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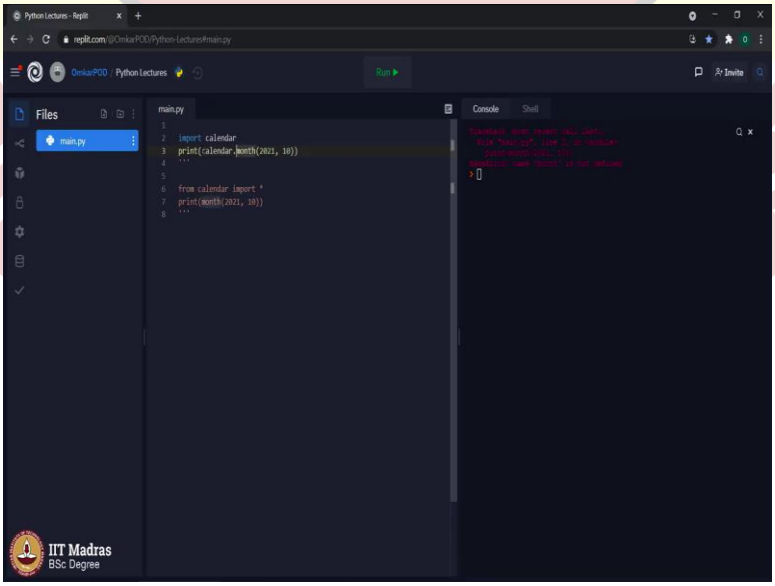

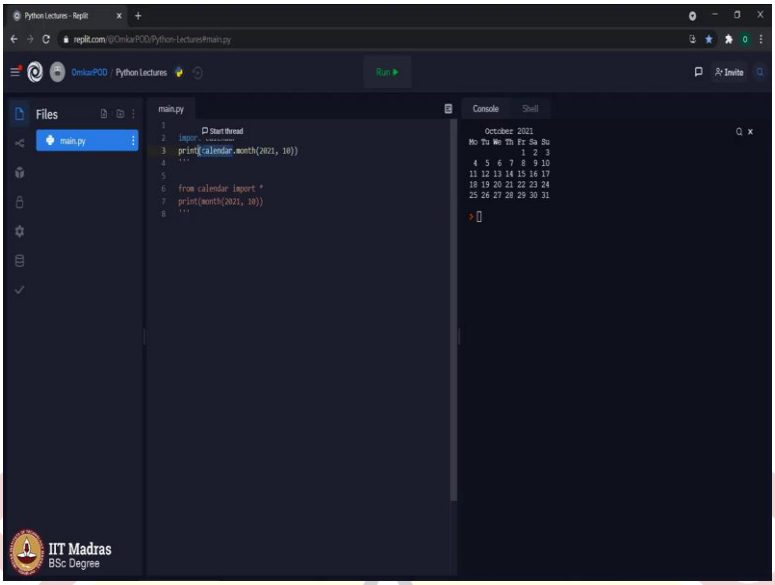

Let us execute a similar code with the first type of import statement; import calendar, print month in bracket 2011 comma 10. It says name error, name month is not defined, as I explained currently computer is able to find that there is a library called calendar. What all things are there inside that library are not known to the computer. That is the reason we explicitly have to mention calendar dot month.

Now come to the knowns, it should look for the specific term month inside library calendar. Then it should be able to execute the code. Once again just to summarize, import calendar statement imports the entire calendar library in this particular python program, whereas from calendar import star, imports the entire content of calendar library into this particular python program.

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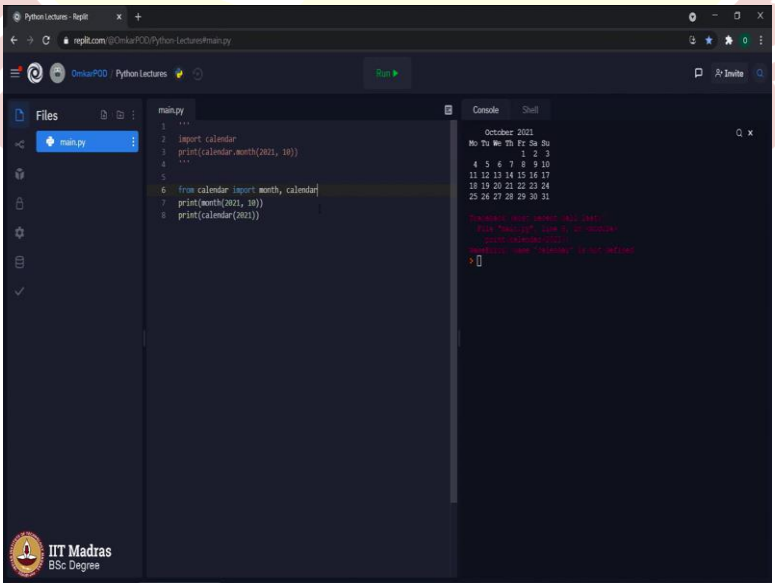

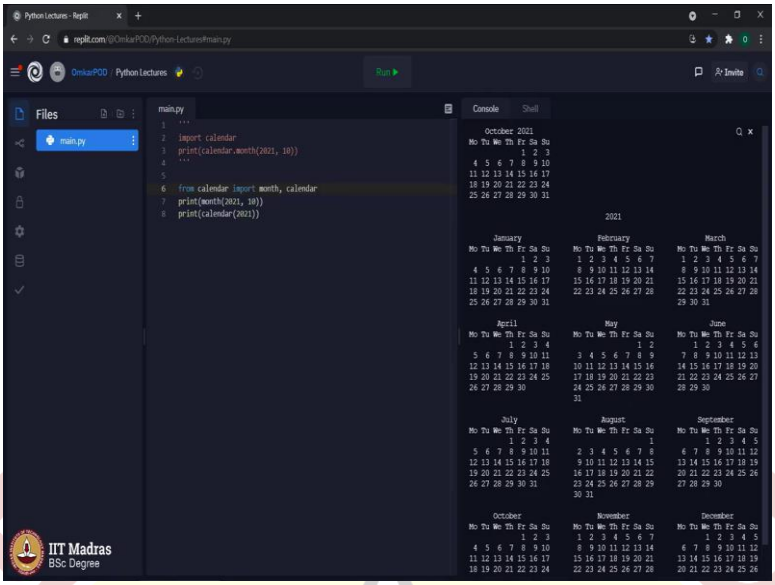

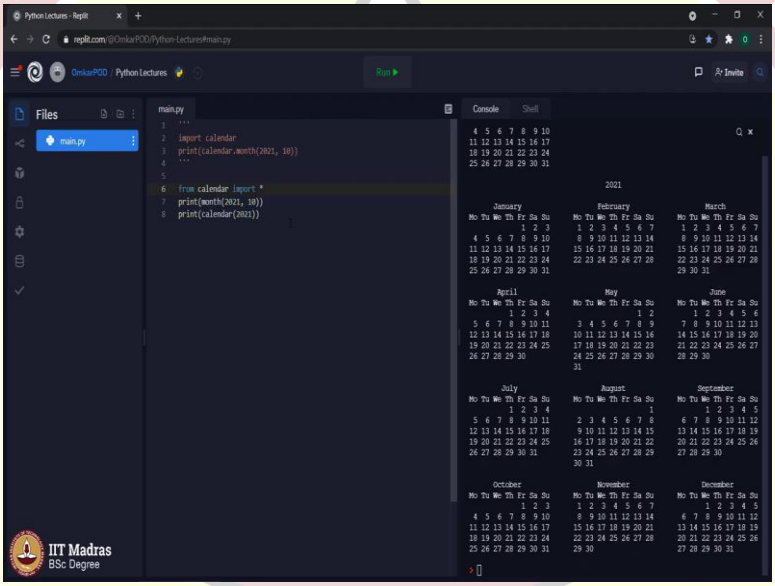

Now we will see the third variation of this particular import statement. Let us comment this code first. As I explained earlier, in this case we are importing the entire content of library calendar into this particular program. But ultimately we are using only one feature of that library which is month. In this case, do not you think it is not an optimum way where we are importing everything, but using only one feature of the library?

Unnecessarily we are asking computer to bring all those things, but we are using only one feature out of all those things, hence to avoid all that trouble, we will simply say from calendar import month. Still we will get the same output. Only problem with this kind of import statement is now if we try to execute something like calendar 2021, then it will not execute, it will say name calendar is not defined.

Because we explicitly said from calendar import month. So now computer will bring only month feature from calendar library into this program. In this case, we explicitly have to mention month comma calendar. Now both those features month as well as calendar will be available in this particular program. Hence we got the output first the month October, because of first print statement and then the entire calendar of year 2021 to second print statement.

If we are using one or two features from a specific library, then this is the most ideal way to write the program. And if you are using almost all the features of the library, then it is better to use star like we saw earlier. Output will always be same, moving on to the next and the last type of import statement.

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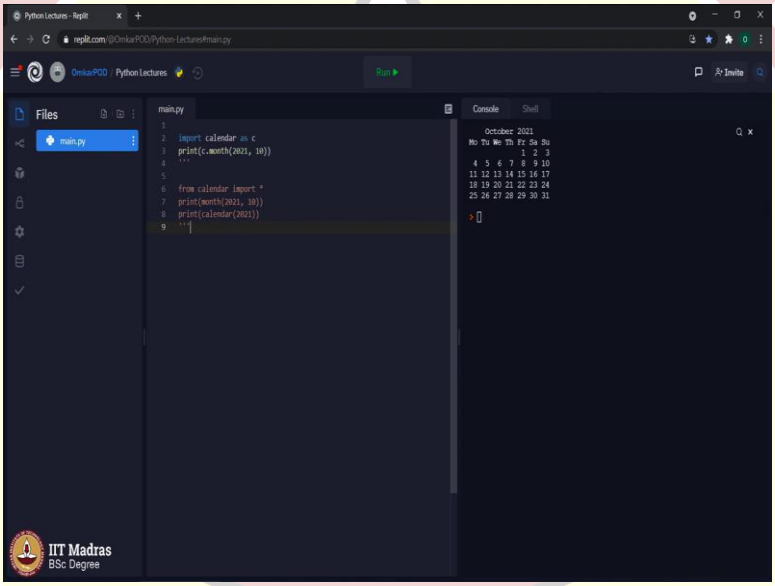

In which we can import a specific library or a specific feature of the library and store it in a variable. Let us see how that works with import calendar first. Import calendar as, this is one more key word says as let us say c. Now the entire calendar library is accessible using this particular variable c. We can say c dot month and the specific month which is October of 2021 will be displayed. This particular feature helps us in saving some time writing some lengthy library names. Same thing can be done using the next type of import statement as well.

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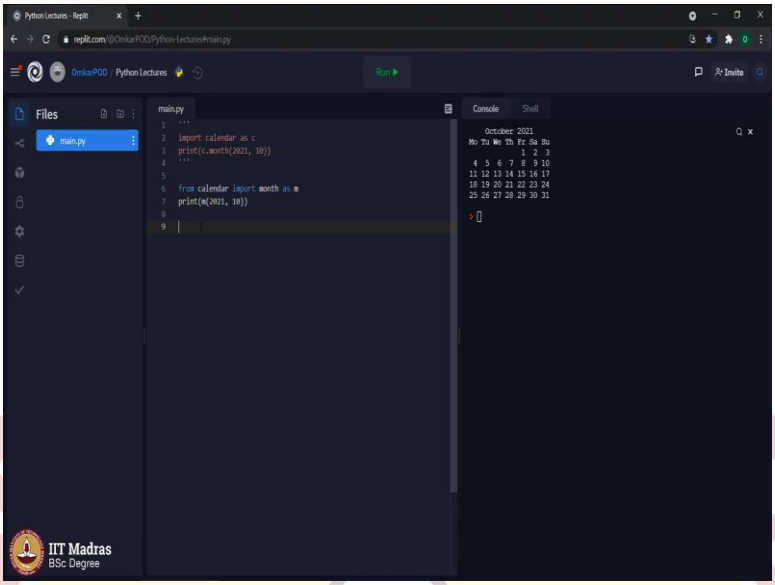

We can say from calendar import month as let us m, let us remove this line and in this case, instead of month we can use this variable m. Because now computer knows that this particular calendar library has a feature month and it is stored in variable m. Let us execute, October 2021. Before closing let us revise what all things we saw in this particular lecture.

First we saw a normal import calendar statement, then we saw something where we used from calendar import star, then we saw from calendar import a specific feature either it can be a month or calendar or something else. And then we saw how to store a specific feature in a variable or a library itself in a variable using a key word ‘as’.

All these different types of import statements are not that critical, we are teaching you all these concepts to complete the python course. As a python programmer, you should know that there are multiple ways to import a library. Thank you for watching this lecture. Happy learning!