



IIT Madras

ONLINE DEGREE

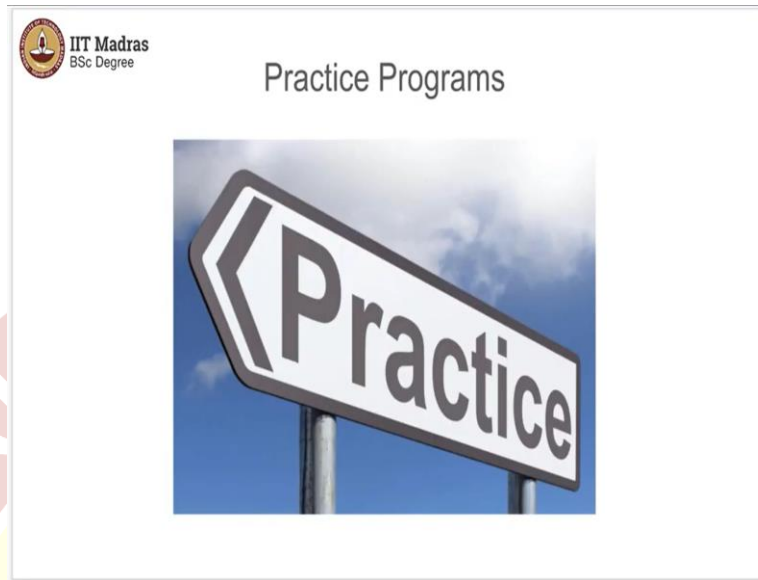
Programming in Python
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Conclusion

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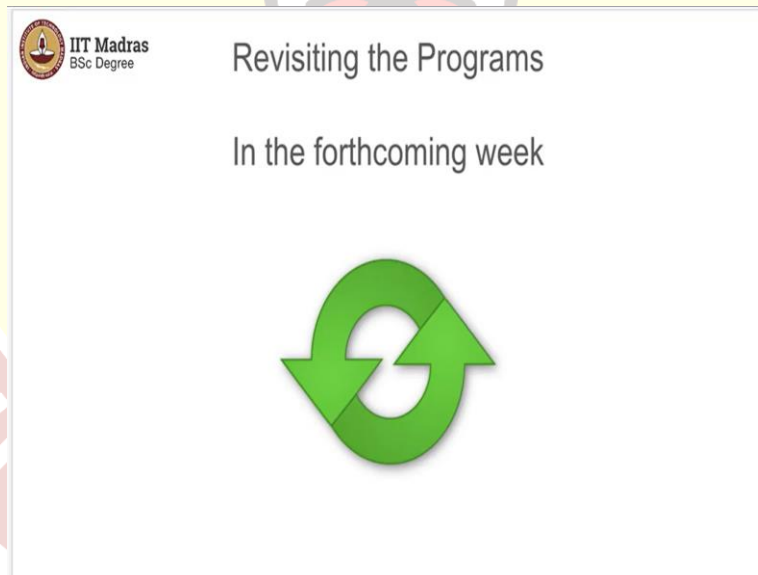
I hope you enjoyed looking at all the coding sessions. It does not matter how much you watch, you must sit and code. I hope you have started coding too and you must be able to type all these codes without seeing, looking into the video or any other reference and most of the python syntax, you should be able to speak. For instance, you can seek help, you can look up online help but then you must be able to do some of the basic things without looking up. That will save your time.

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I am sure you are practicing as we said in the introduction of this week.


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And as we said, we will be revisiting these programs, so you must get familiarized with these programs. If you have any questions, please post on the forum and get it clarified, we will be very happy to redo something for you if something is very confusing. In fact, what we did was very, very basic stuff this week and things are going to get slightly complicated. I am going to

keep more bricks on top of this foundation that I have laid and these bricks are going to be some easy, some medium and some hard and some can be very, very hard.

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Birthday Paradox, Search, Sort, Matrix Operations

```
1 r1=[1,2,3]
2 r2=[4,5,6]
3 r3=[7,8,9]
4
5 s1=[1,2,1]
6 s2=[6,2,3]
7 s3=[4,2,1]
8
9 A=[]
10 B=[]
11 A.append(r1)
12 A.append(r2)
13 A.append(r3)
14
15 B.append(s1)
16 B.append(s2)
17 B.append(s3)
18
19 C=[[0,0,0],[0,0,0],[0,0,0]]
20
21 dim=3
22
23 AC[2][1] is the dot product of the 2nd row of A
24 # and the 1st column of B
25
26 for i in range(dim):
```

```
IPython 7.19.0 -- An enhanced Interactive Python.
In [1]: runfile('/Users/srsiyengar/.spyder-py3/temp.py', wdir='/Users/srsiyengar/.spyder-py3')
In [2]: runfile('/Users/srsiyengar/.spyder-py3/temp.py', wdir='/Users/srsiyengar/.spyder-py3')
Out[2]: [[25, 12, 10], [58, 30, 25], [91, 48, 40]]
In [3]: (1+1)*(2+2)*(3+3)
Out[3]: 25
In [4]: import numpy
In [5]: A
Out[5]: [[1, 2, 3], [4, 5, 6], [7, 8, 9]]
In [6]: B
Out[6]: [[1, 2, 1], [6, 2, 3], [4, 2, 1]]
In [7]: X=numpy.mat(A)
In [8]: Y=numpy.mat(B)
In [9]: print(X*Y)
[[25 12 10]
```


So, we covered these topics as we discussed.

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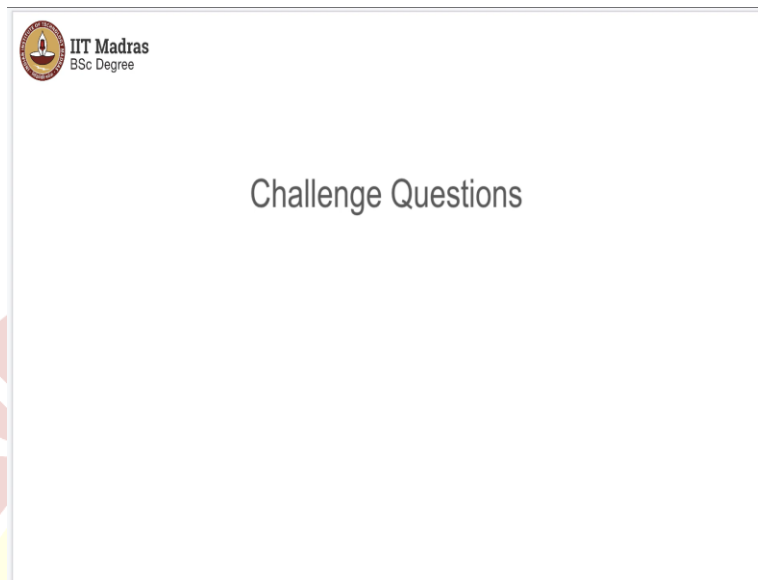
Tip

Code the same program multiple times



And the pro tip always has been, code, as much as possible, the same program multiple times.

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And finally, I have to mention this, there are many, many people, I am sure you are finding it boring because we are doing very straightforward program which you probably learnt in your high school days. So, exclusively for you, what we will do is me and the instructors will post three to four challenging questions which you may want to attempt without looking up online. Independently do it, if you can do it, please write to us separately or over a separate thread that you could do it and we will be very happy to congratulate you that you are going good.

But in case you cannot take up this challenge questions, please do not worry, we have exclusively meant, we have exclusively dedicated these questions for those people who are really fast. If you have understood all the code that we did this week, that should be more than enough. I hope you are enjoying. More coming next, in fact, a lot more. As we advance with more and more python ideas, you will see programming gets easier and easier and programming gets less and less complex as you learn more and more of python. What am I trying to say? Let us see next week.