25th April 21

Previous Day

- how to print a full pyramid with one loop
- Using break/continue on a nested loop of days and weeks (which you take as user input), skip out on the even days of all odd weeks .
- Write a function to print the factorial of any number.
- Print the pyramid, take input as line number.

Python Function Advance

Lecture Flow

- program
- function chaining
- mcq

Topics and Explanation

User-defined function: the person using python as their programming language has defined these functions.

In-built functions: Functions which are already defined by the developer of the program like:-

print()
input()
int()
str()
bool()
float()
range()
abs() - returns the positive part of the number
max() - max of two numbers
min() - min of two numbers
ascii() - converts unicode to ASCII.

A-65, B-66……

a-97,b-98……..

0-48, 1-49…….

ocd() - gives you the ascii value for a character
chr() - opposite of ocd()
s.isalpha() - checks if all the characters are alphabets and returns true or false

s.isdigit() - checks if the strings contain only numbers and return true and false.
s.lower() - returns all the characters in lowercase
s.upper() - returns all the characters in uppercase
s.title() - returns the 1st letter of the word in uppercase
s.swapcase() - alter the upper into lower and lower into upper
s.isupper() - checks if the string is upper and return true or false
s.islower() - checks if the string is lower and return true or false

Apart from these there are many many more functions which are present in python but not available by default, they need to be used on demand.

```
93  # If we have unused functions in python, right the file size will get
    bloated up by default.
94
95  # so what python developers have done right is bundled together many extra
    functions in the form of libraries.
96
```

Library

it is a collection of functions that can be (imported) as the programmer requires.
Eg,.

```
100  import math
101
102  p = math.sqrt(441)
103  print(p)
```

- line100, we are importing math library
- line102, we are calling sqrt() from the math library like this math.sqrt()
- line103, printing the above line

```
101  import math
102  # importing a single or specific function
103  from itertools import permutations, combinations_with_replacement
104  # import a single function and rename the function
105  from itertools import combinations as comb
106  # datetime, time,  collections, re
107
108  p = math.sqrt(441)
109  pp = math.cos(3.14)
110  ppp = math.sin(3.14)
111  print(p)
112  q = permutations(range(3), 2)
113  r = comb(range(3), 2)
```

Start thread

In line103,104, we are importing function from library itertools

Program

```
134  s = "My Name is Priyesh"
135  print(s.isalpha())
136  t = "MyNameIsPriyesh"
137  print(t.isalpha())
```

Output

```
~/RichBiodegradableLicenses$ python3 lecture15_notes.py
False
True
~/RichBiodegradableLicenses$
```

Program

```
152  s = "21234512"
154  print(s.isdecimal())
```

Output

```
~/RichBiodegradableLicenses$ python3 lecture15_notes.py
True
~/RichBiodegradableLicenses$
```

checks if the strings contain only numbers and return true and false.

Program

```
156   s = "My name is priyesh"
157   print(s.lower())
158   print(s.upper())
159   print(s.title())
160   print(s.swapcase())
161   print(s.isupper())
162   print(s.islower())
```

Output

```
~/RichBiodegradableLicenses$ python3 lecture15_notes.py
my name is priyesh
MY NAME IS PRIYESH
My Name Is Priyesh
mY NAME IS PRIYESH
False
False
~/RichBiodegradableLicenses$
```

line157 returns all the string in lowercase
line158 returns all the string in uppercase
line159 returns only the 1st letter of the word in uppercase
line 160 alter the upper into lower and lower into upper
line 161 checks if the string is upper and return true or false
line 162 checks if the string is lower and return true or false

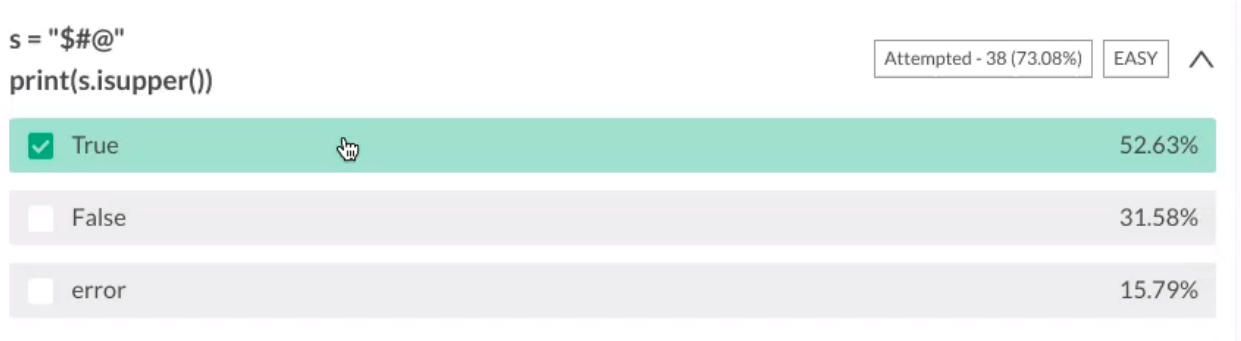
Function chaining

```
175    print(s.upper().isupper())
```

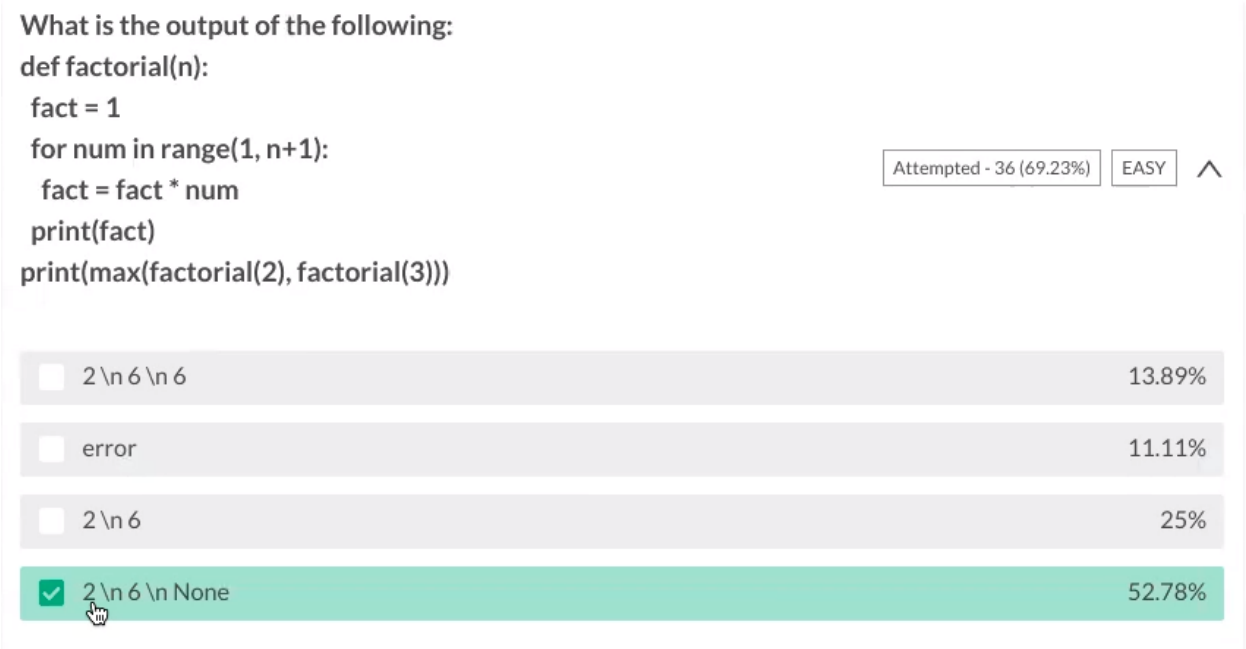
```
True
~/RichBiodegradableLicenses$
```

we can use more than one function together. In the function chaining the output of one function becomes the input of another function.

MCQs



both true and false are correct



What is the output of :

s = "My Name is Priyesh"

print(s.swapcase().upper().isupper())

Attempted - 37 (71.15%) EASY

- [ ] error cannot use more than 2 functions at once 13.51%
- [x] True 78.38%
- [ ] False 2.7%
- [ ] MY NAME IS PRIYESH 8.11%

What is the output of:

```
import math
m = sqrt(441)
print(m)
```

Attempted - 38 (73.08%) EASY

- [ ] 21 28.95%
- [ ] 21.0 5.26%
- [x] Error 65.79%
- [ ] None 2.63%