Python

ASSIGNMENT 1

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Python Class 1:

1)What is JPython & CPython

Ans: CPython: CPython is the implementation of the language called “Python” in C. not only Cpython, some more are implemented like IronPython and Jython (Python implemented in Java).

JPython: Python is an interpreted programming language. Hence, Python programmers need interpreters to convert Python code into machine code. Where as Cython is a compiled programming language. The Cython programs can be executed directly by the CPU of the underlying computer without using any interpreter.

2)Basic difference between Python2 & python3

Ans:

Basis of comparison	Python2	Python3
Release Date	2008	2000
Function print	print ("hello")	print "hello"
Division of Integers	Whenever two integers are divided, you get a float value	When two integers are divided, you always provide integer value
Unicode	In Python 3, default storing of strings is Unicode.	To store Unicode string value, you require to define them with "u".
Syntax	The syntax is simpler and easily understandable.	The syntax of Python 2 was comparatively difficult to understand.

Leak of variables	The value of variables never changes.	The value of the global variable will change while using it inside for-loop.

3)Difference between ASCII & unicode

Ans:

ASCII	Unicode
ASCII character defines 128 characters	as UNI CODE defines 221 characters
ASCII is not standardized	Unicode is standardized
It is stored as 8-bit byte	Unicode is stored in byte sequence such as UTF-32 and UTF-8
It uses numbers to represent text. Digits (1,2,3, etc.), letters (a, b, c, etc.) and symbols (!) are called characters	It contains representations for letters in languages such as English, Greek, Arabic etc., mathematical symbols, emoji and many more

Python Class 2:

Ques. 1. What should be the output? (3 + 4 ** 6 - 9 * 10 / 2)

Ans. 1054

(3+ 1096 – 9*10/2)

(3+ 1096 – 9*5)

(3+ 1096 – 45)

(1099 – 45)

1054

Ques. 2. Let say I have, some string "hello this side regex" find out the count of the total vowels - ['a','e','i','o','u']

Ans. 7

```
str = "hello this side regex"

s = str.lower()

vowels=0

for i in s:

        if(i=='a' or i=='e' or i=='o' or i=='i' or i=='u'):

                vowels=vowels+1

print (vowels)
```

Ques. 3. Find out the area of triangle

- 1/2 * b * h (formula of area)

- You have to take value from user about the base, & the height

Ans.

```
print("Enter the base of the triangle: ")

base = int(input())

print("Enter the height of the triangle: ")

height = int(input())

area = 0.5*base*height

print("Area: ")
```

print (area)

Ques. 4. Print the calendar on the terminal. If you give the year.

- Allow the user to input the year.

- Then should that calendar of that year

Ans.

```
import calendar

print("Enter year: ")

y = int(input())

print(calendar.calendar(y))
```

Python Class 3:

1. Find the Armstrong Number between the two numbers which are input by user.

Sol.

```
lower = int(input("Enter the lower limit: "))
upper = int(input("Enter the upper limit: "))
for num in range(lower,upper + 1):
   sum = 0
   temp = num
   while temp > 0:
      digit = temp % 10
      sum += digit ** 3
      temp //= 10
   if num == sum:
      print(num)
```

```
Enter the lower limit: 10

Enter the upper limit: 1000
153
370
371
407
```

2. Remove the punctuation like [“@!#$%&*()”] from the string and output the string without them

Sol.

```
punc = '''!()-[]{};:'"\,<>./?@#$%^&*_~'''
my_str = str(input("Enter the string: "))
no_punc = ""
for char in my_str:
   if char not in punc:
      no_punc = no_punc + char
print(no_punc)
```

```
Enter the string: @B$u^n^n%Y]
BunnY
```

3. Sort the list of words in Alphabetical order.

Sol.

```
my_str = ['Apple', 'banana', 'cat', 'REGEX','apple']    #given
my_str.sort()
print(my_str)
```

```
['Apple', 'REGEX', 'apple', 'banana', 'cat']
```

- The reason for this type of order is due the ASCII value. For capital letters its starts from 65 whereas for small letters it starts from 97.