Python

Assignment – 1

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Class 1:-

Q1. What is JPython & CPython?

Answer:

- **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.

Q2. Basic difference between Python2 & python3

Answer:

Basis of comparison	**Python 3**	**Python 2**
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.
Rules of ordering Comparisons	In this version, Rules of ordering comparisons have been simplified.	Rules of ordering comparison are very complex.
Iteration	The new Range() function introduced to perform iterations.	In Python 2, the xrange() is used for iterations.
Exceptions	It should be enclosed in parenthesis.	It should be enclosed in notations.
Leak of variables	The value of variables never changes.	The value of the global variable will change while using it inside for-loop.

Backward compatibility	Not difficult to port python 2 to python 3 but it is never reliable.	Python version 3 is not backwardly compatible with Python 2.
Library	Many recent developers are creating libraries which you can only use with Python 3.	Many older libraries created for Python 2 is not forward-compatible.

Q3. Difference between ASCII & Unicode

Answer:

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

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Class 2:-

Q1. What should be the output? (3 + 4 ** 6 - 9 * 10 / 2)

Answer:

1054

(3+ 1096 – 9*10/2)
(3+ 1096 – 9*5)
(3+ 1096 – 45)
(1099 – 45)
1054

Q2. Let say I have, some string "hello this side regex" find out the count of the total vowels - ['a','e','i','o','u']

Answer:

```
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)
```

Q3. 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

Answer:

```
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)
```

Q4. 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

Answer:

```
import calendar
print("Enter year: ")
y = int(input())
print(calendar.calendar(y))
```

Class 3:-

Q1. Find the Armstrong Number between the two numbers which are input by user.

Answer:

```
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)
```

Q2. Remove the punctuation like [“@!#$%&*()”] from the string and output the string without them

Answer:

```
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)
```

Q3. Sort the list of words in Alphabetical order.

Answer:

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