

Applied Machine Learning Workshop (CSE 3193)

ASSIGNMENT-1: BASIC OF PYTHON PROGRAMMING

- Evaluate the following expressions involving arithmetic, relational and logical operators:
 - $5 \% 10 + 10 < 50$ and $29 \geq 29$
 - $7 ** 2 \leq 5 // 9 \% 3$ or `'bye' < 'Bye'`
 - $5 \% 10 < 8$ and $-25 > 1 * 8 // 5$
 - $7 ** 2 // 4 + 5 > 8$ or $5 != 6$
 - $7/4 < 6$ and `'I am fine' > 'I am not fine'`
 - $10 + 6 * 2 ** 2 != 9//4-3$ and $29 \geq 29/9$
 - `'hello' * 5 > 'hello'` or `'bye' < 'Bye'`
- Write a python function to input the height of three friends Rahul, Raj and Ramesh and find the friend with smallest height using conditional statement.
- Write a python function to check a year inputted by the user is a leap year or not.
- Write a program that reads three integers from the user and displays them in sorted order (from smallest to largest). Use the min and max functions to find the smallest and largest values. The middle value can be found by computing the sum of all three values, and then subtracting the minimum value and the maximum value.
- Write a function areaTriangle that takes the lengths of three sides: side1, side2, and side3 of the triangle as the input parameters and returns the area of the triangle as the output. Also, assert that sum of the length of any two sides is greater than the third side. Write a function main that accepts inputs from the user interactively and computes the area of the triangle using the function areaTriangle.
- Observe carefully the below function

```
def fun(a=0, b=1):  
    return (a**2 + b**2)
```

What will be the output for each call made below?

 - `fun(2,a=3)`
 - `fun(b=3,2)`
 - `fun(3,b=2)`
 - `fun(a=4,5)`
- Write a program that takes two numbers as input and check whether they are co-primes.
[Hint :Two numbers are said to be co-prime if they do not have any common divisor other than one.]
- Study the program segments given below. In each case, give the output produced, if any.
 - ```
total = 0
count = 20
while count > 5:
 total += count
 count -= 1
print(total)
```
  - ```
total = 0  
N = 5  
for i in range (1,N+1):  
    for j in range (1,i+1):
```

```
total += 1  
print(total)
```

9. Write a python program to find the sum of the digits of a number. If a number is 314 then sum of the digits are 10.
10. What will be the output on executing each of the following assignment statements:
address = 'B-6, Lodhi road, Delhi'
 - a. len(address)
 - b. address[17:-1]
 - c. address[-len(address): len(address)]
 - d. address[:-12] + address[-12:]
 - e. address.find('delhi')
 - f. address.swapcase()
 - g. address.split(',')
 - h. address.isalpha()
11. Write a python program to input a list of n elements and return a list having no duplicate elements without using any built-in function.
12. Write a python program to generate a list which contains the cubes of first 10 natural number using list comprehension.
13. Write a python program to find the occurrence of each character present in a string use the concept of python dictionary.
14. Write a python function that takes a number as an input parameter and returns the correspond text in words. Use a dictionary for mapping digits to their string representation.
[Example : On input 452, the function should return 'Four Five Two'.]