<u>PYTHON INTERNSHIP TASK – ASSESSMENT 1</u>

1) write a single program to handle the following arithmetic operations for addition, subtraction, multiplication, division, floor division, modulus and Exponentiation.
2)Write a program to check the validity of a password. Primary conditions for password validation
- minimum 8 charecters
- The alphabet must be between [a-z]
- At least one alphabet should be of Upper Case [A-Z]
- At least 1 number or digit between [0-9].
- At least 1 character from [_ or @ or \$].
Examples:
Input : R@m@_f0rtu9e\$
Output : Valid Password
Input : Rama_fortune\$
Output : Invalid Password
Explanation: Number is missing
Input : Rama#fortu9e
Output : Invalid Password
Explanation: Must consist from _ or @ or \$
3) print the following patterns:
a)
0
00
000

0000

b)

*

* * *

* * * * *

* * * * * * *

c)

0

11

222

3333

44444

555555

d)

1

12

123

1234

12345

e)

* * * * * *

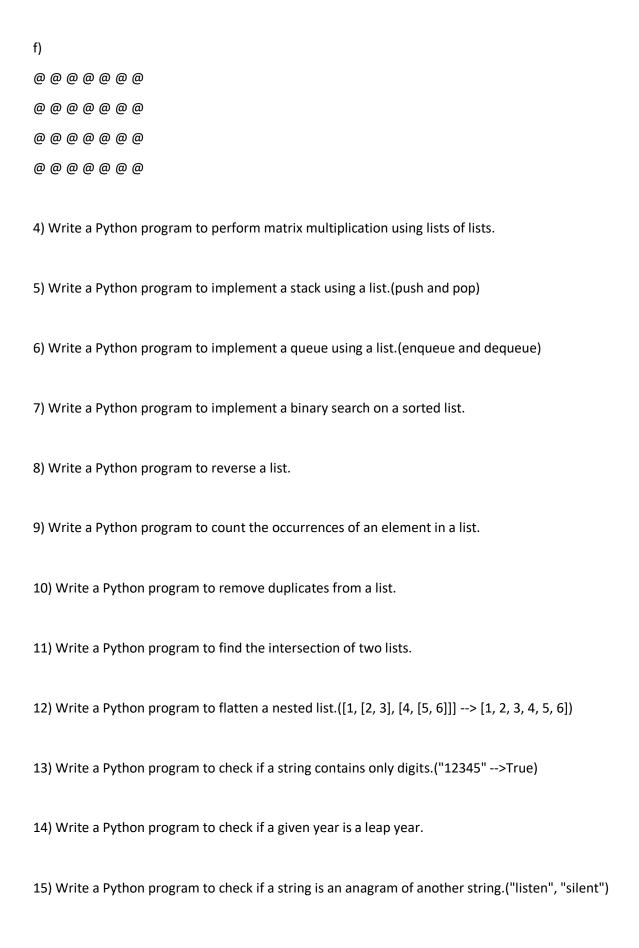
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16) Write a Python program to merge two sorted lists into a single sorted list.
17) Write a Python program to find the sum of all even numbers in a list.
18) Write a Python program to find the second largest number in a list.
19) Write a Python program to count the number of vowels in a string.
20) Write a Python program to remove all occurrences of a given element from a list.
21) Write a Python program to remove all whitespace characters from a string.
22) Write a Python program to check if a given number is a perfect number.
23) Write a Python program to find the GCD (Greatest Common Divisor) of two numbers.(gcd(48, 60)=12)
24) Write a Python program to calculate the sum of all elements in a list recursively.
25) Write a Python program to count the number of occurrences of each element in a tuple.