**PYTHON DEEP DIVE – ASSIGNMENT QUESTIONS**

1. For the string "Monty Python's Flying Circus", replace the 'y' with 'i'
2. For the string "Sea shells on the sea shore", find how many times 's' occurs
3. For the string "Monty Python's Flying Circus", tokenise the string on words
4. Define the string that contains "I am writing the python code" - Split the sentence based on 'space character'
5. Input a String from the user and print the string in reverse order. Eg: If the user is entering "Python", then print the output as "nohtyP"
6. Get the input from the user until user provides some input
7. Define the string that contains "I am writing the python code" and perform the following tasks:
   1. Split the sentence based on 'space character'
   2. Print each and every index using 'WHILE LOOP'
   3. Print each and every value of index using 'FOR LOOP'
8. For the string "Monty Python's Flying Circus", tokenise the string on words and print each word along with its length
9. Get the number from the user and Create the list contains the square of numbers (eg): If the user enters the number ‘5’ and create the list that contains the square of numbers until 5 – [1, 4, 9, 16, 25]
10. Create the list with some 10 locations. Check whether the location is starting with "N". If the location is starting with 'N' -> Display "location -> length" i.e., Noida -> 5
11. Demonstrate the below concepts by writing the PYTHON Script:
    1. Create the List that holds the numbers from 1 to 10 and the list should be named ‘numbers’
    2. Add the number ‘11’ to the end of ‘numbers’ list
    3. Add the number ‘0’ to the beginning of ‘numbers’ list
    4. Print the contents of ‘numbers’ list in descending order
    5. Find the count and maximum index of ‘numbers’ list
    6. Print the contents of ‘numbers’ list using ‘for’ and ‘while’ loop
    7. Print only the even elements
12. Demonstrate the below concepts by writing the PYTHON Script:
    1. Create the Dictionary that holds the software details named “software\_det”
       1. Key should be the software name
       2. Value should be the version of software
    2. Print only the keys from the dictionary “software\_det”
    3. Print only the values from the dictionary “software\_det”
    4. Print the contents in the below format from the dictionary “software\_det”
       1. The Software “<software\_name>” has been installed with the version “<version>”
13. Write the python function to perform the following tasks:
    1. Create the function to count the number of given character in the string save it in a module
    2. Arguments are as follows:
       1. String (Mandatory)
       2. Character that needs to be counted (Mandatory)
       3. Starting position (Optional - if not passed it has to be taken as '0')
       4. Ending position (Optional - if not passed it has to be taken as [length of string])
14. Write the script to achieve the following tasks:
    1. Create the empty file
    2. Input the string from the user
    3. Append the line entered by the user in a file "inputs.txt"
    4. If the string entered by the user is "EOF", stop writing the contents to the file
    5. Read all the lines from the file and print only the even numbers of lines
15. Demonstrate the below concepts by writing the PYTHON Script:
    1. Input a Number
    2. Define Two Exceptions "TooSmall" and "TooLarge"
    3. If the number is less than 10, handle the exception "TooSmall"
    4. If the number is greater than 100, handle the exception - "TooLarge"
    5. If the valid input is provided, just print the number
16. Demonstrate the below concepts by writing the PYTHON Script:
    1. Create the Class Account
       1. Variables - Account Name, Account Number and Balance
       2. Balance should be the private variable
    2. Create the Methods "Withdraw" and "Deposit"
    3. If Withdraw happens, account balance should be reduced
    4. If Deposit happens, account balance should be increased
    5. Create the Method -> "displayAccountDetails" to display the account details
17. Demonstrate the Regular Expressions for the below text formats:
    1. Create the list of email ids
    2. Rule for email id format - starts with an alphabet followed by any 3 alphabets, followed by any three numbers – in between 3 alphabets and 3 numbers, there should be any of these special characters "\_."
    3. If the format is matched, then print the username and domain name seperately.
18. Write a Python program to replace maximum 2 occurrences of space, comma, or dot with a colon using Regular Expressions.
19. Write a Python program to find all three, four, five characters long words in a string using Regular Expressions.
20. Write a Python program to remove all whitespaces from a string using Regular Expressions.
21. Write a Python program to find urls in a string using Regular Expressions.
22. Define a class which has at least two methods:
    1. getString: to get a string from console input
    2. printString: to print the string in upper case.
    3. Also, please include simple test function to test the class methods.
23. Write a program that accepts a comma separated sequence of words as input and prints the words in a comma-separated sequence after sorting them alphabetically.
    1. (eg): If the input is ‘without,hello,bag,world’ and then the output should be ‘bag,hello,without,world’
24. Write a program that accepts a sentence and calculate the number of letters and digits.
25. A website requires the users to input username and password to register. Write a program to check the validity of password input by users. Following are the criteria for checking the password:
    1. At least 1 letter between [a-z]
    2. At least 1 number between [0-9]
    3. At least 1 letter between [A-Z]
    4. At least 1 character from [$#@]
    5. Minimum length of transaction password: 6
    6. Maximum length of transaction password: 12
    7. Your program should accept a sequence of comma separated passwords and will check them according to the above criteria. Passwords that match the criteria are to be printed, each separated by a comma.