

Assignment 1

1. Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead of the empty string.
Sample String : 'a1resource'
Expected Result : 'a1ce'
Sample String : 'a1'
Expected Result : 'a1a1'
Sample String : ' a'
Expected Result : Empty String
2. Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '\$', except the first char itself.
Sample String : 'restart'
Expected Result : 'resta\$t'
3. Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, if 'not' follows the 'poor', replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.
Sample String : 'The lyrics is not that poor!'
'The lyrics is poor!'
Expected Result : 'The lyrics is good!'
'The lyrics is poor!'
4. Write a Python function to insert a string in the middle of a string.
Sample function and result :
insert_sting_middle('[]', 'Python') -> [[Python]]
insert_sting_middle('{{}}', 'PHP') -> {{PHP}}
5. Write a Python program to sort a string lexicographically.
6. Write a Python program to count repeated characters in a string.
Sample string: 'thequickbrownfoxjumpsoverthelazydog'
Expected output :
o 4
e 3
u 2
h 2
r 2
t 2
7. Write a Python function that prints out the first 'n' rows of Pascal's triangle. 'n' is user input.
8. Write a Python function that accepts a hyphen-separated sequence of words as input and prints the words in a hyphen-separated sequence after sorting them alphabetically.
Sample Items : green-red-yellow-black-white
Expected Result : black-green-red-white-yellow
9. Write a Python function to merge two sorted arrays.
Sample Items :
m=[1, 4, 8]
n=[2, 3, 7]
Expected Output: mn=[1, 2, 3, 4, 7, 8]
10. Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters.
Sample String : 'The quick Brow Fox'
Expected Output :
No. of Upper case characters : 3
No. of Lower case Characters : 12
11. Write a Python program which accepts a sequence of comma separated 4 digit binary numbers as its input and print the numbers that are divisible by 5 in a comma separated sequence.
Sample Data : 0100,0011,1010,1001,1100,1001
Expected Output : 1010
12. Write a Python program to insert a new item before the second element in an existing array.

13. Write a Python program to print alphabet pattern 'R'.

Expected Output:

```
****
*  *
*  *
****
*  *
*  *
*  *
```

14. Write a Python program to get the number of occurrences of a specified element in an array.

15. Write a Python program to remove a specified item using the index from an array.

16. Write a Python program to convert an array to an ordinary list with the same items.

17. Write a Python program to remove duplicates from a list of lists.

Sample list : [[10, 20], [40], [30, 56, 25], [10, 20], [33], [40]]

New List : [[10, 20], [30, 56, 25], [33], [40]]

18. Write a Python program to find the list in a list of lists whose sum of elements is the highest.

Sample lists: [1,2,3], [4,5,6], [10,11,12], [7,8,9]

Expected Output: [10, 11, 12]

19. Write a Python program to insert a given string at the beginning of all items in a list.

Sample list : [1,2,3,4], string : emp

Expected output : ['emp1', 'emp2', 'emp3', 'emp4']

20. Write a Python program to compute the similarity between two lists.

Sample data: ["red", "orange", "green", "blue", "white"], ["black", "yellow", "green", "blue"]

Expected Output:

Color1-Color2: ['white', 'orange', 'red']

Color2-Color1: ['black', 'yellow']

21. Write a Python program to split a list every Nth element.

Sample list: ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n']

Expected Output: [['a', 'd', 'g', 'j', 'm'], ['b', 'e', 'h', 'k', 'n'], ['c', 'f', 'i', 'l']]

22. Write a Python program to convert a list of multiple integers into a single integer.

Sample list: [11, 33, 50]

Expected Output: 113350

23. Write a Python program to iterate over two lists simultaneously.

24. Write a Python program to create a list by concatenating a given list which range goes from 1 to n.

Sample list : ['p', 'q']

n =5

Sample Output : ['p1', 'q1', 'p2', 'q2', 'p3', 'q3', 'p4', 'q4', 'p5', 'q5']
