

8. Array & Strings

1. Code, execute and debug programs to perform string manipulation.

```
str1 = 'Python'
str2 = "is fun "
str3 = """Hello world,
        How are you?
        String with Triple quotes"""
print(str1, "\n", str2, "\n", str3)
print(str2 * 2)      # printing str2 two times
print(str1 + str2)   # printing concatenated str1 & str2
# Iterating through a string
count = 0
for letter in 'Hello World':
    if(letter == 'l'):
        count += 1
print(count, "times found ")
# enumerate()
list_enumerate = list(enumerate(str1))
print('list(enumerate(str1)) = ', list_enumerate)
#character count
print('string length = ', len(str1))
print(' '.join(reversed(str1))) # to reverse the string
s1= "  Python Is Fun  "
print(s1.strip())
print(s1.lstrip())
print(s1.rstrip())
print(s1.upper())
print(s1.lower())
print(s1.find('Is'))
print(s1.replace('Fun','Fan'))
print(s1.split())
```

Output:

```
Python
is fun
Hello world,
    How are you?
    String with Triple quotes
is fun is fun
Pythonis fun
3 times found
list(enumerate(str) = [(0, 'P'), (1, 'y'), (2, 't'), (3, 'h'), (4, 'o'), (5, 'n')]
```

string length = 6

n o h t y P

Python Is Fun

Python Is Fun

Python Is Fun

PYTHON IS FUN

python is fun

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Python Is Fan

['Python', 'Is', 'Fun']

2.Code, execute and debug programs to perform array manipulation

```
import array as arr
a = arr.array('d', [1.1, 3.5, 4.5])
print(a)
a = arr.array('i', [2, 4, 6, 8, 5, 34, 67, 33, 2, 7, 6, 12, 67, 99 ])

#Accessing the elements using indexing, negative indexing and slicing
print("First element:", a[0])
print("Second element:", a[1])
print("Last element:", a[-1])

print(a[2:5]) # 3rd to 5th
print(a[:5]) # beginning to 4th
print(a[5:]) # 6th to end
print(a[:]) # beginning to end

# changing first element
a[0] = 0
print(a)

# changing 3rd to 5th element
a[2:5] = arr.array('i', [4, 6, 8])
print(a)

# updating the arrays
a.append(4)
print(a)

# extend() appends iterable to the end of the array
a.extend([5, 6, 7])
print(a)

del a[2] # removing third element
print(a)

a.remove(12) # removes the element that is mentioned
print(a)

a.pop() # removes last element in the array
print(a)

print("Element 99 is in ",a.index(99), "location in the array")

a.reverse()
print("Reverse order in the array is ",a)

for x in a:
    print(x)
```

Output:

```
array('d', [1.1, 3.5, 4.5])
```

First element: 2

Second element: 4

Last element: 99

array('i', [6, 8, 5])

array('i', [2, 4, 6, 8, 5, 34, 67, 33, 2])

array('i', [34, 67, 33, 2, 7, 6, 12, 67, 99])

array('i', [2, 4, 6, 8, 5, 34, 67, 33, 2, 7, 6, 12, 67, 99])

array('i', [0, 4, 6, 8, 5, 34, 67, 33, 2, 7, 6, 12, 67, 99])

array('i', [0, 4, 4, 6, 8, 34, 67, 33, 2, 7, 6, 12, 67, 99])

array('i', [0, 4, 4, 6, 8, 34, 67, 33, 2, 7, 6, 12, 67, 99, 4])

array('i', [0, 4, 4, 6, 8, 34, 67, 33, 2, 7, 6, 12, 67, 99, 4, 5, 6, 7])

array('i', [0, 4, 6, 8, 34, 67, 33, 2, 7, 6, 12, 67, 99, 4, 5, 6, 7])

array('i', [0, 4, 6, 8, 34, 67, 33, 2, 7, 6, 67, 99, 4, 5, 6, 7])

array('i', [0, 4, 6, 8, 34, 67, 33, 2, 7, 6, 67, 99, 4, 5, 6])

Element 99 is in 11 location in the array

Reverse order in the array is array('i', [6, 5, 4, 99, 67, 6, 7, 2, 33, 67, 34, 8, 6, 4, 0])

6

5

4

99

67

6

7

2

33

67

34

8

6

4

0