

List (Creation, Modification and Access):

1.Creating the List

```
In [36]: #creating the two list
age_list = [24, 25, 26, 27, 28]
name_list = [ "Nandhini", "Saranya", "Shruthi", "Rohit", "Hardik"]
print(age_list)
print(name_list)

[24, 25, 26, 27, 28]
['Nandhini', 'Saranya', 'Shruthi', 'Rohit', 'Hardik']
```

2.List Operations / Modifications:

```
In [48]: # append
name_list.append("Yazhini")
#Insert
age_list.insert(2,30)

In [49]: #Remove
name_list.remove("Yazhini")

In [50]: #Pop
age_list.pop()
#Extend
age_list.extend(["29", "30", "26"])
```

3. Accessing List Elements:

```
In [51]: #printing the first element
first_name = name_list[0]
print(f"first name of the name list: ",first_name)
#printing the first element
last_name = name_list[len(name_list)-1]
print(f"last name of the name list: ",last_name)

first name of the name list: Nandhini
last name of the name list: Hardik

In [57]: #Print the elements from index 2 to index 4 in name_list.
second_fourth_name = name_list[2:5:2]
print(f"Second and fourth name: ", second_fourth_name)
#print the elements of name_list in reverse order.
Rev_ord = name_list[::-1]
print(f"Names in reverse order: ", Rev_ord)

Second and fourth name: ['Shruthi', 'Hardik']
Names in reverse order: ['Hardik', 'Rohit', 'Shruthi', 'Saranya', 'Nandhini']
```

Dictionary (Creation, Modification and Access):

```
In [8]: # creating the Dictionary
std_mark = {'Hardik':99,'Rohit':98,'Surya':97,'Smriti':96,'harman':95}
print(f"Student name and mark ",std_mark)

Student name and mark {'Hardik': 99, 'Rohit': 98, 'Surya': 97, 'Smriti': 96, 'harman': 95}

In [9]: #adding the student name
std_mark['Janani']= 80
#updating the two student name
std_mark['Hardik'] = 98
std_mark['Smriti']= 90
print(f"updated data",std_mark)

updated data {'Hardik': 98, 'Rohit': 98, 'Surya': 97, 'Smriti': 90, 'harman': 95, 'Janani': 80}

In [11]: #print all the keys
std_mark.keys()

Out[11]: dict_values([98, 98, 97, 90, 95, 80])

In [12]: #printing all the values
std_mark.values()

Out[12]: dict_values([98, 98, 97, 90, 95, 80])

In [13]: #printing all the keys-values
std_mark.items()

Out[13]: dict_items([('Hardik', 98), ('Rohit', 98), ('Surya', 97), ('Smriti', 90), ('harman', 95), ('Janani', 80)])
```

3.Sets (Operations):

```
In [15]: #creating the set
my_set = ['a', 'e', 'i', 'o', 'u', 'a', 'a', 'i']
print(my_set)

['a', 'e', 'i', 'o', 'u', 'a', 'a', 'i']

In [20]: #change the value in the index of 4
my_set[4] = 's'
print(my_set)

['a', 'e', 'i', 'o', 's', 'a', 'a', 'i']

In [24]: #Create two sets:
set1 = {1, 3, 5, 7, 9}
set2 = {2, 3, 5, 8, 10}
#union of two sets
union = set1 | set2
intersection = set1 & set2
print(f"union of this two set ",union)
print(f"intersection of this two set ",intersection)

union of this two set {1, 2, 3, 5, 7, 8, 9, 10}
intersection of this two set {3, 5}
```

Operators & Conditional Statements :

```
In [35]: #Prompt user for Input.
#for Above average
scores = []
score = int(input("Enter the scores (0 to 10): "))
if 0 <= score <= 10:
    scores.append(score)
    if score>7:
        print(f"Above Average: Excellent work! Keep it up.")
    elif 4 <= score <= 7:
        print(f"Average: Good effort! Keep practicing, there's room for improvement ")
    else:
        print(f"Below Average: Need to Improve your performance, consistent practice will lead to better results")
else:
    print("Invalid score! Enter between 0 and 10.")

Above Average: Excellent work! Keep it up.
```

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In [ ]:
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In [ ]:
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