Text

Description automatically generated

Graphical user interface, text, application

Description automatically generated

A list of 10 student’s ages are sorted in an order given ages=[ 19, 22, 19, 24, 20, 25, 26, 24, 25, 24] it is sorted list is : [19, 19, 20, 22, 24, 24, 25, 25, 26] by using sort() function i.e. ages.sort()

For finding maximum age from the given list by using max(ages), and is printed as 26  
Similarly minimum age from the given list is 19 by using mix(ages).

Adding minimum and maximum

ages of students to the already given list by using .extend([minimum (ages)]) and the .extend([maximum(ages)]).   
Output is [19, 19, 20, 22, 24, 24, 25, 25, 26, 19]

Output is [19, 19, 20, 22, 24, 24, 25, 25, 26, 19, 26] respectively  
  
Then statistics is used to get the median age like one middle items divided by two   
with the statistics.median([ages]) median function is used. As one middle items is printed from given ages list. Output is [19, 22, 19, 24, 20, 25, 26, 25, 24]

To Find the average age as sum of all items divided by their number , def is used def Average(ages):  
return sum(ages) / len(ages)

And with average formula   
average = Average(ages) it gives output as 22.667   
  
To find the range of ages (min minus max) , get the max[ages] and mix[ages] and apply formula  
range1 = maximum\_value - minimum\_value

Output is 7

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Text

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Graphical user interface, text, application

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First to Create an empty dictionary called dog as dog = {}  
Add name, color, breed, legs, age to the dog dictionary are assigned   
Create a student dictionary and add first\_name, last\_name, gender, age, marital status, skills, country, city and address as keys for the dictionary  
entered as keys and values and assigned variable as ‘student’  
length of the student of the dictionary is len(student).   
To Get the value of skills and check the data type, it should be a list  
(type(student["skills"]))

Modify the skills values by adding one or two skills. student["skills"]="Collaboration talent,Leadership experience".   
Get the dictionary keys as a list. student = {"first\_name":"ayesha","last\_name":"farhana","gender":"female","age":"24","marital status":"married","skills":"Collaboration talent","country":"india","city":"warangal","address":"#731 st"}.   
keyslist =(student.keys()).   
dict\_keys(['first\_name', 'last\_name', 'gender', 'age', 'marital status', 'skills', 'country', 'city', 'address'])  
To Get the dictionary values as a list. keyslist = (student.values())   
  
{'name': 'Blondie', 'colour': 'Golden brown', 'breed': 'Golden Retriever', 'legs': 'Four', 'age': 'Eight years'}  
  
dict\_values(['ayesha', 'farhana', 'female', '24', 'married', 'Collaboration talent', 'india', 'warangal', '#731 st'])

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Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

To Create a tuple containing names of your sisters and your brothers (imaginary siblings are fine) with the use of string

bros\_tuple1 = ('adil', 'awez', 'mohtadun') are names of your brothers

sisters\_tuple2 = ('shaziya', 'amena', 'zeba') are names of your sisters then prints both brother and sister tuple  
Join brothers and sisters tuples and assign it to siblings , siblings = bros\_tuple1+sisters\_tuple2  
How many siblings do you have? count=len(siblings)

Modify the siblings tuple and add the name of your father and mother and assign it to family\_members  
family\_members = list(siblings)  
family\_members = siblings + ('rasheed','sulthana') modifying with father and mother by names as rasheed and sulthana  
siblings = tuple(family\_members) and prints the sibling tuple. As  
('adil', 'awez', 'mohtadun', 'shaziya', 'amena', 'zeba', 'rasheed', 'sulthana')  
  
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Text

Description automatically generated

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text

Description automatically generated

it\_companies = {'Facebook', 'Google', 'Microsoft', 'Apple', 'IBM', 'Oracle', 'Amazon'} to Find the length of the set it\_companies by using  
count=len(it\_companies) i.e. 7  
To Add 'Twitter' to it\_companies , A variable is used as newTuple to assign for Twitter and then tuple is used to combine Twitter in the given it\_companies  
newTuple = ('Twitter',) it\_companies = tuple(it\_companies) + newTuple and printed it the output is ('Facebook', 'Google', 'IBM', 'Microsoft', 'Apple', 'Amazon', 'Oracle', 'Twitter').  
To Insert multiple IT companies at once to the set it\_companies added few companies ('Tata Consultancy service' , 'HCL', 'Cognizant', 'Infosys', 'Atmacs', )  
adding this multiple compies to it\_companies and output is ('Facebook', 'Google', 'IBM', 'Microsoft', 'Apple', 'Amazon', 'Oracle', 'Twitter', 'Tata Consultancy service', 'HCL', 'Cognizant', 'Infosys', 'Atmacs')  
To Remove one of the companies from the set it\_companies, First list of it\_companies are assigned to varaiable and then it convinent to remove one company among all.   
z = list(it\_companies) z.remove('Google') . it\_companies\_remove = tuple(z) . tuple has been used to collect  
What is the difference between remove and discard   
The discard() method removes the specified item from the set. This method is different from the remove() method, because the remove() method will raise an error if the specified item does not exist, and the discard() method will not. Joining both set and A and B  
A = {19, 22, 24, 20, 25, 26} is the set given B = {19, 22, 20, 25, 26, 24, 28, 27} , #Join A and B . J = tuple(A) + tuple(B) .Find A intersection B z = A.intersection(B) Is A subset of B, Disjoint sets are false  
Join A with B and B with A , AB= tuple(A) + tuple(B) , BA= tuple(B) + tuple(A) , ABA = AB + BA   
What is the symmetric difference between A and B and the formula is symmetric\_dif= A.symmetric\_difference(B) . To Delete the sets completely  
c = A.clear() d = B.clear()   
To Convert the ages to a set and compare the length of the list and the set.  
Converting the ages to a set is age\_set = set(age) . The length of the list is len(age) . the length of the set is len(age\_set)

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Text

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Graphical user interface, text, application

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Assigned radius is 10 variable as radius\_of\_circle = 30, then to Calculate the area of a circle and assign the value to a variable name of \_area\_of\_circle\_ , it is given in question pi value as pi = 3.14 ,the formula for area of circle as \_area\_of\_circle\_= pi \* radius\_of\_circle \* radius\_of\_circle , and to Calculate the circumference of a circle and assign the value to a variable name of \_circum\_of\_circle ;   
 \_circum\_of\_circle = 2 \* pi \* radius\_of\_circle  
 radius as user input and calculate the area. it is enter as 10   
area = pi \* radiusOfCircle \* radiusOfCircle is 314.00  
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Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

The solution for the given sentence “I am a teacher and I love to inspire and teach people” it is assigning to the variable as ‘sentence’ and printd it. To find unique words in this sentence , first words have to be separated , by using split() function it will be easier to separate the words and assigned to one variable here as ‘allWords’ i.e. allWords = sentence.split(). Unique words printed by using set i.e. unique\_words = set(allWords) then the length of the unique\_words is len(unique\_words) , that is 10.

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Text, letter

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

By using \t here for tab escape sequence by assigning string1 and string2 variables   
divided the above given Sequence as Name Age Country City in one variable and   
Asabeneh 250 Finland Helsinki in another variable by using \t to the each word. Output shows as expected.

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Graphical user interface, text

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, chat or text message

Description automatically generated

Given radius as 10 and formula for area of circle is area =3.14\*radius\*\*2   
By using string format as by using {} like, value =”The area of a circle with radius 10 is {area\_of\_circle:.2f} meters square.”

And it is printed in the output ”The area of a circle with radius 10 is 314 meters square.”

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Graphical user interface, text

Description automatically generated with medium confidence

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

In this problem, assigning variable as ‘s’ to read the number of students into the list   
s = int(input("Enter the number of students: ")) . To read the weights of students , a variable is assigned as ‘a’ i.e. a = list(map(int,input("\nEnter the weights: ").strip().split()))[:s] by using map() functions   
and enters weights of the students then using for loop to get the iteration of ‘a list’ with ‘i’ variable and assigning it to ‘x’ variable i.e. 1pound=0.453592, multiplying 0.453592 with i(weight in pounds)  
it is given with the split then it printed in list L1: [150, 155, 145, 148] then another separate array is created to print the conversion of weight in pounds to weights in kilograms  
['68.04', '70.31', '65.77', '67.13']