

```
while(True):
    print("MAIN MENU")
    print("-----")
    print("1. List\n2. Tuple\n3. Dictionary\n4. SET\n5. Quit")
    print("-----")

    op=int(input("Enter UR Choice: "))
    if op > 5:
        print("Wrong choice")
    elif op==1:
        # LIST STARTS HERE
        while(True):
            print("-----")
            print("LIST Operations")
            print("-----")

            print("1. Definition\n2. Add elemnts into the list\n3. Deletion\n4. Exit")

            ch=int(input("Enter Your Choice: "))
            print("-----")
            # Definition of list
            if ch==1:
                print("A list is a data structure in Python that is a mutable, or changeable, ordered sequence of elements.")
                print("Each element or value that is inside of a list is called an item.")
                print("Just as strings are defined as characters between quotes.")
                print("Lists are defined by having values between square brackets [ ],")
                print("-----")
                # Addition starts
                ch2=2
                while(True):
                    print("Addition methods")
                    print("-----")
                    list = []
                    n=int(input("Enter numbers of ele: "))
                    for i in range(0, n):
                        ele = int(input())
                        list.append(ele) # adding the element
                    print(list)
                    # 3 addition methods are here below
                    print("1. Do you want to add single element\n2. Do you want to add multiple elements\n3. Do you want to ad element at sprcific index position\n4. Quit")
                    ch2=int(input("Enter Your Choice: "))
                    print("-----")
                    if ch2==1:
                        print(list)
                        list.append(int(input("Enter a number u want to add: ')))
                        print(list)
                    elif ch2==2:
                        list.extend(input("Enter number u want to add: "))
                        print(list)
                    elif ch2==3:
                        list=int(input("Enter the position at which the element needs to be added: "))
                        ele=int(input("Enter the element you want to add: "))
                        list.insert(i,ele)
                        print("After the insertion list will be: ", list)
                    elif ch2==4:
                        print("You have selected the exit button")
                        break
                    else:
                        print("Wrong choice!!!!")
                        print("-----")
                # addition ends
                # deletion starts
                elif ch2==3:
                    print("Deletion Methods")
                    print("-----")
                    list = []
                    n=int(input("Enter numbers of ele: "))
                    for i in range(0, n):
                        ele = int(input())
                        list.append(ele) # adding the element
                    print(list)
                    # 3 deletion methods are here below
                    print("1. Do you want to delete single element\n2. Do you want to delete a specific value in the elements\n3. Do you want to delete element at sprcific index position\n4. Exit")
                    ch2=int(input("Enter UR Choice: "))
                    print("-----")
                    if ch2==1:
                        list.pop(list.pop())
                        print("Element which got removed: ", list.pop())
                        print("After removing the element : ",list)
                    elif ch2==2:
                        ele = int(input("Enter the element that you want to remove: "))
                        for i in list:
                            if i==ele:
                                list.remove(ele)
                                print("After removing the element from the list, new list becomes: ",list)
                                break
                        else:
                            print("Entered number is not in the list")
                            break
                    elif ch2==3:
                        i = int(input("Enter index position where deletion is needed: "))
                        del list[i]
                        print("After deletion: ", list)
                    elif ch2==4:
                        print("You have selected the exit button")
                        break
                    else:
                        print("Wrong choice!!!!")
                        print("-----")
                # deletion ends
                elif ch2==4:
                        print("You have selected the exit button")
                        break
                else:
                        print("Wrong choice!!!!")
                        print("-----")
            # LIST ENDS HERE
            #-----
            # SET STARTS HERE
            elif op==2:
                while(True):
                    print("-----")
                    print("Tuple Operation")
                    print("-----")
                    print("1. Definition\n2. Add elemnts into Tuple\n3. Deletion of elements from Tuple\n4. Exit")
                    print("-----")
                    t=int(input("Enter Your Choice: "))
                    print("-----")
                    # Definition of Tuple
                    if t==1:
                        print("Python Tuple is a collection of objects separated by commas.")
                        print("In some ways, a tuple is similar to a list but in terms of indexing, nested objects,")
                        print("and repetition a tuple is immutable, unlike lists which are mutable.")
                        print("-----")
                    elif t==2:
                        while(True):
                            print("Addition methods")
                            print("-----")
                            tuple=(input("Enter the tuple elements for tuple: "))
                            print(tuple)
                            print(type(tuple))
                            print("-----")
                            # 3 addition methods are here below
                            print("1. Do you want to add single element\n2. Do you want to add multiple elements\n3. Do you want to ad element at sprcific index position\n4. Quit")
                            t2=int(input("Enter Your Choice: "))
                            print("-----")
                            if t2==1:
                                tuple=list(tuple)
                                tuple.append(int(input("Enter a number u want to add: ')))
                                tuple=tuple(tuple)
                                print(tuple)
                            elif t2==2:
                                tuple=list(tuple)
                                tuple.extend(input("Enter number u want to add: "))
                                tuple=tuple(tuple)
                                print(tuple)
                            elif t2==3:
                                tuple=list(tuple)
                                list=int(input("Enter the position at which the element needs to be added: "))
                                ele=int(input("Enter the element you want to add: "))
                                tuple.insert(i,ele)
                                tuple=tuple(tuple)
                                print("After the insertion list will be: ", tuple)
                            elif t2==4:
                                print("You have selected the exit button")
                                break
                            else:
                                print("Wrong choice!!!!")
                                print("-----")
                            # addition ends
                            # deletion starts
                            elif t2==3:
                                print("Deletion Methods")
                                print("-----")
                                tuple=(input("Enter the tuple elements for tuple: "))
                                print(tuple)
                                print(type(tuple))
                                print("-----")
                                # 3 deletion methods are here below
                                print("1. Do you want to remove single element from the list. \n2. Do you want to delete a specific value in the elements. \n3. Do you want to remove element from specific position \n4. Exit")
                                t2=int(input("Enter Your Choice: "))
                                print("-----")
                                if t2==1:
                                    list=list(tuple)
                                    list.pop(list.pop())
                                    print("Element which got removed: ", list.pop())
                                    tuple=tuple(list)
                                    print("After removing the element : ",tuple)
                                elif t2==2:
                                    ele = int(input("Enter the element that you want to remove: "))
                                    list=list(tuple)
                                    for i in list:
                                        if i==ele:
                                            list.remove(ele)
                                            tuple=tuple(list)
                                            print("After removing the element from the list, new list becomes: ",tuple)
                                            break
                                    else:
                                        print("Entered number is not in the list")
                                        break
                                elif t2==3:
                                    i = int(input("Enter index position where deletion is needed: "))
                                    list=list(tuple)
                                    del list[i]
                                    tuple=tuple(list)
                                    print("After deletion: ", tuple)
                                elif ch2==4:
                                    print("You have selected the exit button")
                                    break
                                else:
                                    print("Wrong choice!!!!")
                                    print("-----")
                            # deletion ends
                            elif t2==4:
                                    print("You have selected the exit button")
                                    break
                                else:
                                    print("Wrong choice!!!!")
                                    print("-----")
                            # deletion ends
                            # TUPLE ENDS HERE
                            #-----
                            # DICTIONARY STARTS HERE
                            elif op==3:
                                while(True):
                                    print("-----")
                                    print("Dictionary Operation")
                                    print("-----")
                                    print("1. Definition\n2. Add elemnts into Dictionary\n3. Deletion of elements from Dictionary\n4. Exit")
                                    print("-----")
                                    d=int(input("Enter Your Choice: "))
                                    print("-----")
                                    # Definition of Dictionary
                                    if d==1:
                                        print("Dictionaries are Python's implementation of a data structure that is more generally known as")
                                        print("an associative array. A dictionary consists of a collection of key-value pairs.")
                                        print("Each key-value pair maps the key to its associated value.")
                                        print("-----")
                                        # addition starts
                                        elif d==2:
                                            while(True):
                                                print("Addition methods")
                                                print("-----")
                                                # taking dict input from user
                                                n = int(input("Enter the wished length of Dictionary:"))
                                                d = {}
                                                for i in range(n):
                                                    keys = input("Key: ")
                                                    values = input("Values: ")
                                                    d[keys] = values
                                                    print(d)
                                                    print("-----")
                                                    # 3 addition methods are here below
                                                    print("1. Do you want to add single element\n2. Do you want to add a new element with a key and value\n3. Do you want to add multiple new elements\n4. Quit")
                                                    d2=int(input("Enter Your Choice: "))
                                                    print("-----")
                                                    if d2==1:
                                                        # Take input key and value from the user
                                                        key = input("Enter the key to update: ")
                                                        value = input("Enter the new value: ")
                                                        # Check if the key exists in the dictionary or not
                                                        if key in d:
                                                            # update the value of the key
                                                            d[key] = value
                                                            print("Dictionary updated successfully")
                                                        else:
                                                            print("The key does not exist in the dictionary.")
                                                        # Print the updated dictionary
                                                        print("-----")
                                                        print(d)
                                                        print("-----")
                                                    elif d2==2:
                                                        # Take input key and value from the user
                                                        key = input("Enter the key to add: ")
                                                        value = input("Enter the value to add: ")
                                                        # Check if the key already exists in the dictionary or not
                                                        if key in d:
                                                            print("The key already exists in the dictionary.")
                                                        else:
                                                            # Add the new element to the dictionary
                                                            d[key] = value
                                                            print("The new element has been added to the dictionary.")
                                                        # Print the updated dictionary
                                                        print("-----")
                                                        print(d)
                                                        print("-----")
                                                    elif d2==3:
                                                        # Take input from the user for the number of elements they want to add
                                                        new_elements = int(input("Enter the number of elements to add: "))
                                                        for i in range(new_elements):
                                                            key = input("Enter the key to add: ")
                                                            value = input("Enter the value to add: ")
                                                            # Check if the key already exists in the dictionary or not
                                                            if key in d:
                                                                print("The key already exists in the dictionary.")
                                                            else:
                                                                # Add the new element to the dictionary
                                                                d[key] = value
                                                                print("The new element has been added to the dictionary.")
                                                            # Print the updated dictionary
                                                            print("-----")
                                                            print(d)
                                                            print("-----")
                                                    elif d2==4:
                                                        print("You have selected the exit button")
                                                        break
                                                    else:
                                                        print("Wrong choice!!!!")
                                                        print("-----")
                                                    # addition ends
                                                    # deletion starts
                                                    elif d==3:
                                                        while(True):
                                                            print("Deletion Methods")
                                                            print("-----")
                                                            # taking dict input from user
                                                            n = int(input("Enter the wished length of Dictionary:"))
                                                            d = {}
                                                            for i in range(n):
                                                                keys = input("Key: ")
                                                                values = input("Values: ")
                                                                d[keys] = values
                                                                print(d)
                                                                print("-----")
                                                                # deletion methods are here below
                                                                print("1. Deletion of element(s)\n2. Exit")
                                                                d2=int(input("Enter Your Choice: "))
                                                                print("-----")
                                                                if d2==1:
                                                                    # Take input from the user for the key(s) of the element(s) they want to delete
                                                                    keys_to_delete = input("Enter the key(s) to delete (separated by comma: ' , ')"
                                                                    # Split the input string into a list of keys
                                                                    keys_to_delete = keys_to_delete.split(',')
                                                                    # Using a loop, check if each key exists in the dictionary or not
                                                                    for key in keys_to_delete:
                                                                        if key in d:
                                                                            # Delete the element from the dictionary
                                                                            del d[key]
                                                                            print("The elemnt with key',key',has been deleted from the dictionary.")
                                                                        else:
                                                                            print("The key',key',does not exist in the dictionary.")
                                                                            # Print the updated dictionary
                                                                            print("-----")
                                                                            print(d)
                                                                            print("-----")
                                                                        elif d2==2:
                                                                            print("You have selected the exit button")
                                                                            break
                                                                        else:
                                                                            print("Wrong choice!!!!")
                                                                            print("-----")
                                                                    # deletion ends
                                                                    elif d==4:
                                                                            print("You have selected the exit button")
                                                                            break
                                                                            else:
                                                                            print("Wrong choice!!!!")
                                                                            print("-----")
                                                                    # deletion ends
                                                                    # DICTIONARY ENDS HERE
                                                                    #-----
                                                                    # SET STARTS HERE
                                                                    elif op==4:
                                                                        while True:
                                                                            print("-----")
                                                                            print("Set Operations")
                                                                            print("-----")
                                                                            print("1. Definition\n2. Add elements into Set\n3. Deletion\n4. Exit")
                                                                            print("-----")
                                                                            s=int(input("Enter your choice"))
                                                                            if s1==1:
                                                                                print("-----")
                                                                                print("Definition of Set")
                                                                                print("A set is an unordered collection data type that is iterable, mutable, and has no duplicate elements")
                                                                                print("Set are represented by { }")
                                                                            elif s1==2:
                                                                                while True:
                                                                                    print("Addition Methods")
                                                                                    print("-----")
                                                                                    print("1. Definition\n2. Add elements into Set\n3. Deletion\n4. Exit")
                                                                                    user_input = input("Enter a set of numbers separated by commas: ")
                                                                                    s = set(user_input.split(','))
                                                                                    print(s)
                                                                                    print("1. Do you want to add single element\n2. Do you want to add multiple elements\n3. Exit")
                                                                                    s2=int(input("Enter your choice: '))
                                                                                    if s2==1:
                                                                                        print("Set before adding element: ", s)
                                                                                        a = int(input("Enter a value u want to add into set: '))
                                                                                        s.add(a)
                                                                                        print("Set after adding element", s)
                                                                                    elif s2==2:
                                                                                        print("Set before adding element: ", s)
                                                                                        new_list=[]
                                                                                        n=int(input("Enter numbers of ele you want to add: "))
                                                                                        for i in range(0, n):
                                                                                            ele = input()
                                                                                            new_list.append(ele)
                                                                                            s.update(new_list)
                                                                                            print("Set after adding multiple elements:",s)
                                                                                    elif s2==3:
                                                                                        break
                                                                                    else:
                                                                                        print("Wrong choice!!!!")
                                                                                        print("-----")
                                                                                    elif s1==3:
                                                                                        while True:
                                                                                            print("Deletion Methods")
                                                                                            print("-----")
                                                                                            user_input = input("Enter a set of numbers separated by commas: ")
                                                                                            s = set(user_input.split(','))
                                                                                            print(s)
                                                                                            print("Do you want to delete specific value from the set\n2. Do you want to delete all the elements from the set\n3. Exit")
                                                                                            d2.delete(int(input("Enter your choice: '))
                                                                                            if d2==1:
                                                                                                print(s)
                                                                                                remove=int(input("Enter element u want to remove from the above Set: '))
                                                                                                print("Set after deletion:", s)
                                                                                            elif s2==2:
                                                                                                print(s)
                                                                                                s.clear()
                                                                                                print("Set after deletion:",s)
                                                                                            elif s2==3:
                                                                                                print("You have selected the exit button")
                                                                                                break
                                                                                            else:
                                                                                                print("Wrong choice!!!!")
                                                                                                print("-----")
                                                                                            elif s1==4:
                                                                                                print("You have selected the exit button")
                                                                                                break
                                                                                                else:
                                                                                                print("Wrong choice!!!!")
                                                                                                print("-----")
                                                                                            # deletion ends
                                                                                            # SET ENDS HERE
                                                                                            #-----
                                                                                            elif op==5:
                                                                                                print("Thank you :)")
                                                                                                break
                                                                                            else:
                                                                                                print("Wrong Choice")
                                                                                                print("-----")
                                                                                            # SET ENDS HERE
                                                                                            #-----
                                                                                            # MAIN MENU
                                                                                            print("-----")
                                                                                            print("1. List\n2. Tuple\n3. Dictionary\n4. SET\n5. Quit")
                                                                                            print("-----")
                                                                                            Enter UR Choice: 4
                                                                                            -----
                                                                                            Set Operations
                                                                                            -----
                                                                                            1. Definition
                                                                                            2. Add elements into Set
                                                                                            3. Deletion
                                                                                            4. Exit
                                                                                            -----
                                                                                            Enter your choice2
                                                                                            -----
                                                                                            Addition Methods
                                                                                            -----
                                                                                            Enter a set of numbers separated by commas: safasf,asfasf,saff
                                                                                            -----
                                                                                            1. Do you want to add single element
                                                                                            2. Do you want to add multiple elements
                                                                                            3. Exit
                                                                                            -----
                                                                                            Enter your choice3
                                                                                            -----
                                                                                            Set before adding element ('asfasf', 'safasf', 'saff')
                                                                                            Enter a value u want to add into set12
                                                                                            Set after adding element ('asfasf', 'safasf', 'saff', 12)
                                                                                            -----
                                                                                            Addition Methods
                                                                                            -----
                                                                                            Enter a set of numbers separated by commas: xsdf,asfdas,
                                                                                            -----
                                                                                            1. Do you want to add single element
                                                                                            2. Do you want to add multiple elements
                                                                                            3. Exit
                                                                                            -----
                                                                                            Enter your choice3
                                                                                            -----
                                                                                            Set Operations
                                                                                            -----
                                                                                            1. Definition
                                                                                            2. Add elements into Set
                                                                                            3. Deletion
                                                                                            4. Exit
                                                                                            -----
                                                                                            Enter your choice4
                                                                                            You have selected the exit button
                                                                                            -----
                                                                                            MAIN MENU
                                                                                            -----
                                                                                            1. List
                                                                                            2. Tuple
                                                                                            3. Dictionary
                                                                                            4. SET
                                                                                            5. Quit
                                                                                            -----
                                                                                            Enter UR Choice: 5
                                                                                            Thank you :)
                                                                                            -----
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