

1. Write a python program to print personal information like Name, Father's Name, Class, School Name.

```
# Collect personal information from the user
name = input("Enter your Name: ")
fathers_name = input("Enter your Father's Name: ")
class_name = input("Enter your Class: ")
school_name = input("Enter your School Name: ")

# Print the collected information
print("\nPersonal Information:")
print(f"Name: {name}")
print(f"Father's Name: {fathers_name}")
print(f"Class: {class_name}")
print(f"School Name: {school_name}")
```

2. To Find the Square of Number 7

```
number = 7
square = number ** 2
print("The square of", number, "is", square)
```

3. To Find the Sum of Two Numbers 15 and 20

```
num1 = 15
num2 = 20
sum_of_numbers = num1 + num2
print("The sum of", num1, "and", num2, "is", sum_of_numbers)
```

4. To Convert Length Given in Kilometers into Meters

```
kilometers = float(input("Enter the length in kilometers: "))
meters = kilometers * 1000
print(f"{kilometers} kilometers is equal to {meters} meters")
```

5. To Print the Table of 5 up to Five Terms

```
number = 5
terms = 5
print(f"Multiplication table of {number} up to {terms} terms:")
for i in range(1, terms + 1):
    print(f"{number} x {i} = {number * i}")
```

6. To Calculate Simple Interest

```
principal_amount = 2000
rate_of_interest = 4.5
```

```
time = 10
# Simple Interest formula: SI = (P * R * T) / 100
simple_interest = (principal_amount * rate_of_interest * time) / 100
print(f"The Simple Interest is: {simple_interest}")
```

7. Write a python program to print as follows:

```
*****
****
***
**
*
# Number of rows in the pattern
rows = 5
# Loop through each row
for i in range(rows, 0, -1):
    # Print '*' characters for each column in the current row
    print('*' * i)
```

8. Write a python program to print as follows:

```
*
**
***
****
*****
# Number of rows in the pattern
rows = 5
# Loop through each row
for i in range(1, rows + 1):
    # Print '*' characters for each column in the current row
    print('*' * i)
```

9. To Calculate Area and Perimeter of a Rectangle

```
# Program to calculate Area and Perimeter of a rectangle
# Input the length and width of the rectangle
length = float(input("Enter the length of the rectangle: "))
width = float(input("Enter the width of the rectangle: "))

# Calculate area and perimeter
area = length * width
perimeter = 2 * (length + width)

# Print the results
print(f"Area of the rectangle: {area}")
print(f"Perimeter of the rectangle: {perimeter}")
```

10. To Calculate Area of a Triangle with Base and Height

Program to calculate Area of a triangle

Input the base and height of the triangle

base = float(input("Enter the base of the triangle: "))

height = float(input("Enter the height of the triangle: "))

Calculate the area

*area = 0.5 * base * height*

Print the result

print(f"Area of the triangle: {area}")

11.To Calculate Average Marks of 3 Subjects

Program to calculate average marks of 3 subjects

Input marks for three subjects

mark1 = float(input("Enter the marks for subject 1: "))

mark2 = float(input("Enter the marks for subject 2: "))

mark3 = float(input("Enter the marks for subject 3: "))

Calculate the average

average = (mark1 + mark2 + mark3) / 3

Print the result

print(f"Average marks: {average}")

12. To Calculate Discounted Amount with Discount %

Program to calculate discounted amount

Input the original price and discount percentage

original_price = float(input("Enter the original price: "))

discount_percentage = float(input("Enter the discount percentage: "))

Calculate the discounted amount

*discount_amount = (discount_percentage / 100) * original_price*

discounted_price = original_price - discount_amount

Print the results

print(f"Discount amount: {discount_amount}")

print(f"Discounted price: {discounted_price}")

13. To Calculate Surface Area and Volume of a Cuboid

Program to calculate Surface Area and Volume of a Cuboid

Input the dimensions of the cuboid

*length = float(input("Enter the length of the cuboid: "))**width = float(input("Enter the width of the cuboid: "))**height = float(input("Enter the height of the cuboid: "))*

Calculate surface area and volume

*surface_area = 2 * (length * width + width * height + height * length)**volume = length * width * height*

Print the results

*print(f"Surface Area of the cuboid: {surface_area}")**print(f"Volume of the cuboid: {volume}")***14. Create a list in Python of children selected for science quiz with following names- Arjun, Sonakshi, Vikram, Sandhya, Sonal, Isha, Kartik****Perform the following tasks on the list in sequence-**

- Print the whole list
- Delete the name "Vikram" from the list
- Add the name "Jay" at the end
- Remove the item which is at the second position.

Create a list of children selected for the science quiz

children = ["Arjun", "Sonakshi", "Vikram", "Sandhya", "Sonal", "Isha", "Kartik"]

Print the whole list

*print("Original List:")**print(children)*

Delete the name "Vikram" from the list

*if "Vikram" in children:**children.remove("Vikram")**else:**print("Vikram is not in the list")*

Add the name "Jay" at the end

children.append("Jay")

Remove the item which is at the second position (index 1)

*if len(children) > 1:**removed_item = children.pop(1)**print(f"Removed item at second position: {removed_item}")**else:**print("The list does not have enough items to remove the second position.")*

```
# Print the updated list
print("Updated List:")
print(children)
```

Explanation:

1. *Create a List: Initializes the list children with the names provided.*
2. *Print the Whole List: Displays the original list.*
3. *Delete Name "Vikram": Uses the remove() method to delete the name "Vikram" from the list if it exists.*
4. *Add Name "Jay": Uses the append() method to add "Jay" at the end of the list.*
5. *Remove Item at Second Position: Uses the pop() method to remove and retrieve the item at the second position (index 1). It also checks if the list has enough items to perform this operation to avoid index errors.*
6. *Print the Updated List: Displays the final list after performing all the operations.*

16. Create a list num=[23,12,5,9,65,44]

- Print the length of the list
- Print the elements from second to fourth position using positive indexing
- Print the elements from position third to fifth using negative indexing

```
# Create the list
num = [23, 12, 5, 9, 65, 44]
```

```
# Print the length of the list
print("Length of the list:", len(num))
```

```
# Print the elements from the second to fourth position using positive indexing
# Positive indexing: 1 (second) to 3 (fourth)
print("Elements from second to fourth position (positive indexing):", num[1:4])
```

```
# Print the elements from the third to fifth position using negative indexing
# Negative indexing: -4 (third) to -2 (fifth)
print("Elements from third to fifth position (negative indexing):", num[-4:-1])
```

Explanation:

1. *Print Length of the List: len(num) calculates the number of elements in the list and prints it.*
2. *Print Elements from Second to Fourth Position:*
 - a. *Positive Indexing: Elements from index 1 to 3 (inclusive). The slice num[1:4] retrieves elements at positions 2, 3, and 4 (0-based index).*
3. *Print Elements from Third to Fifth Position:*
 - a. *Negative Indexing: Elements from index -4 to -2 (inclusive). The slice num[-4:-1] retrieves elements starting from the third last position up to the second last position (negative indexing).*

17. Create a list of first 10 even numbers, add 1 to each list item and print the final list.

- Create a list List_1=[10,20,30,40]. Add the elements [14,15,12] using extend function. Now sort the final list in ascending order and print it.

Task 1: Working with the List num

Create the list

```
num = [23, 12, 5, 9, 65, 44]
```

Print the length of the list

```
print("Length of the list:", len(num))
```

Print the elements from the second to fourth position using positive indexing

```
print("Elements from second to fourth position:", num[1:4])
```

Print the elements from the third to fifth position using negative indexing

```
print("Elements from third to fifth position (negative indexing):", num[-4:-1])
```

Task 2: Modify and Print List of First 10 Even Numbers

Create a list of the first 10 even numbers

```
even_numbers = [2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
```

Add 1 to each list item

```
incremented_numbers = [x + 1 for x in even_numbers]
```

Print the final list

```
print("List after adding 1 to each item:", incremented_numbers)
```

Task 3: Modify and Sort 'List_1'

Create the initial list

```
List_1 = [10, 20, 30, 40]
```

Add elements [14, 15, 12] using extend function

```
List_1.extend([14, 15, 12])
```

Sort the final list in ascending order

```
List_1.sort()
```

Print the sorted list

```
print("Sorted List:", List_1)
```

Explanation:**Task 1:**

- *Length of List: Uses len(num) to get the number of elements.*

- *Elements from Second to Fourth Position: Uses slicing num[1:4] to get elements from index 1 to 3.*
- *Elements from Third to Fifth Position (Negative Indexing): Uses slicing num[-4:-1] to get elements from the third to the fifth position using negative indexing.*

Task 2:

- *Create List of Even Numbers: Initializes the list even_numbers with the first 10 even numbers.*
- *Add 1 to Each Item: Uses a list comprehension [x + 1 for x in even_numbers] to increment each item by 1.*

Task 3:

- *Create Initial List: Starts with List_1 containing [10, 20, 30, 40].*
- *Extend List: Uses extend() to add [14, 15, 12] to List_1.*
- *Sort List: Uses sort() to sort the list in ascending order.*

18. Program to Check if a Person Can Vote

```
# Program to check if a person can vote
```

```
# Input age
```

```
age = int(input("Enter your age: "))
```

```
# Check if the person can vote
```

```
if age >= 18:
```

```
    print("You are eligible to vote.")
```

```
else:
```

```
    print("You are not eligible to vote.")
```

19. To Check the Grade of a Student

```
# Program to check the grade of a student
```

```
# Input the marks
```

```
marks = float(input("Enter your marks: "))
```

```
# Determine the grade
```

```
if marks >= 90:
```

```
    grade = 'A'
```

```
elif marks >= 80:
```

```
    grade = 'B'
```

```
elif marks >= 70:
```

```
    grade = 'C'
```

```
elif marks >= 60:
```

```
    grade = 'D'
```

```
else:
```

```
    grade = 'F'
```

```
print(f"Your grade is: {grade}")
```

20. Input a Number and Check if it is Positive, Negative, or Zero

```
# Program to check if a number is positive, negative, or zero
# Input the number
number = float(input("Enter a number: "))
# Determine and display the type of number
if number > 0:
    print("The number is positive.")
elif number < 0:
    print("The number is negative.")
else:
    print("The number is zero.")
```

21. To Print the First 10 Natural Numbers

```
# Program to print the first 10 natural numbers
print("First 10 natural numbers:")
for i in range(1, 11):
    print(i, end=' ')
print() # for a newline after printing numbers
```

22. To Print the First 10 Even Numbers

```
# Program to print the first 10 even numbers
print("First 10 even numbers:")
for i in range(2, 21, 2):
    print(i, end=' ')
print() # for a newline after printing numbers
```

23. To Print Odd Numbers from 1 to n

```
# Program to print odd numbers from 1 to n
# Input the value of n
n = int(input("Enter the value of n: "))

print(f"Odd numbers from 1 to {n}:")
for i in range(1, n + 1, 2):
    print(i, end=' ')
print() # for a newline after printing numbers
```

24. To Print Sum of First 10 Natural Numbers

```
# Program to print the sum of the first 10 natural numbers

# Calculate the sum
```



```
sum_of_numbers = sum(range(1, 11))  
print("Sum of the first 10 natural numbers is:", sum_of_numbers)
```

25. Program to Find the Sum of All Numbers Stored in a List

Program to find the sum of all numbers stored in a list

Example list

```
numbers = [10, 20, 30, 40, 50]
```

Calculate the sum

```
sum_of_numbers = sum(numbers)  
print("Sum of all numbers in the list is:", sum_of_numbers)
```