**Interview Questions  
python**

26. Implement a program to check if a number is a perfect square or not.

Solution- import math

def is\_perfect\_square(n):

if n < 0:

return False

sqrt\_n = int(math.isqrt(n))

return sqrt\_n \* sqrt\_n == n

# Example usage

number = 49

if is\_perfect\_square(number):

print(f"{number} is a perfect square.")

else:

print(f"{number} is not a perfect square.")

27. Create a Python program to find the second largest element in a list.

Solution- def find\_second\_largest(numbers):

if len(numbers) < 2:

return None

first, second = float('-inf'), float('-inf')

for num in numbers:

if num > first:

second = first

first = num

elif first > num > second:

second = num

return second if second != float('-inf') else None

numbers = [3, 5, 7, 2, 8, 6, 4, 7]

second\_largest = find\_second\_largest(numbers)

if second\_largest is not None:

print(f"The second largest element is {second\_largest}.")

else:

print("There is no second largest element.")

28. Write a program to find the median of a list of numbers.

Solution- def find\_median(numbers):

if not numbers:

return None

numbers.sort()

n = len(numbers)

mid = n // 2

if n % 2 == 0:

# If even, average of the two middle numbers

median = (numbers[mid - 1] + numbers[mid]) / 2

else:

# If odd, the middle number

median = numbers[mid]

return median

# Example usage

numbers = [3, 5, 1, 4, 2]

median = find\_median(numbers)

if median is not None:

print(f"The median is {median}.")

else:

print("The list is empty.")

29. Implement a function to reverse words in a given sentence.

Solution- def reverse\_words(sentence):

words = sentence.split()

reversed\_words = words[::-1]

reversed\_sentence = ' '.join(reversed\_words)

return reversed\_sentence

sentence = "Hello world this is a test"

reversed\_sentence = reverse\_words(sentence)

print(reversed\_sentence) # Output: "test a is this world Hello"

30. Create a program to find the number of words in a given sentence.

Solution- def count\_words(sentence):

words = sentence.split()

return len(words)

sentence = "Hello, world! This is a test."

word\_count = count\_words(sentence)

print(f"The number of words in the sentence is {word\_count}.")