PYTHON – WORKSHEET 1

Answer.1 C) %

Answer.2 B) 0

Answer.3 C) 24

Answer.4 A) 2

Answer.5 D) 6

Answer.6 C) the finally block will be executed no matter if the try block raises an error or not.

Answer.7 A) It is used to raise an exception.

Answer.8 C) in defining a generator

Answer.9 C) abc2

Answer.10 D) all of the above

In [3]:
```python
#question no.11 Write a python program to find the factorial of a number

# Function to find factorial using a loop
def factorial(n):
    # Initializing the result to 1
    result = 1
    # Multiply result by each number from 1 to n
    for i in range(2, n + 1):
        result *= i
    return result

# Input from the user
num = int(input("Enter a number: "))

# Check if the input is a negative number
if num < 0:
    print("Factorial is not defined for negative numbers.")
else:
    print(f"The factorial of {num} is {factorial(num)}.")
```

```
The factorial of 5 is 120.
```

In [5]:
```python
#question no.12 Write a python program to find whether a number is prime or composite

# Function to check if a number is prime or composite
def check_prime_or_composite(n):
    # Numbers less than or equal to 1 are neither prime nor composite
    if n <= 1:
        return "neither prime nor composite"
    # Check for prime
    for i in range(2, int(n ** 0.5) + 1):
        if n % i == 0:
            return "composite"
    return "prime"

# Input from the user
num = int(input("Enter a number: "))

# Call the function and display the result
result = check_prime_or_composite(num)
print(f"The number {num} is {result}.")
```

```
The number 10 is composite.
```

In [8]:
```python
#question no.13 Write a python program to check whether a given string is palindrome or not

# Function to check if a string is a palindrome
def is_palindrome(s):
    # Convert string to lowercase and remove spaces
    s = s.replace(" ", "").lower()
    # Check if the string is equal to its reverse
    return s == s[::-1]

# Input from the user
input_string = input("Enter a string: ")

# Check if the input string is a palindrome
if is_palindrome(input_string):
    print(f'"{input_string}" is a palindrome.')
else:
    print(f'"{input_string}" is not a palindrome.')
```

```
"hii sir" is not a palindrome.
```

In [10]:
```python
#question no.14 Write a Python program to get the third side of right-angled triangle from two given sides

import math

# Function to calculate the third side
def find_third_side(a, b, is_hypotenuse=False):
    if is_hypotenuse:
        # If the given sides include the hypotenuse, calculate one of the other sides
        return math.sqrt(a**2 - b**2)
    else:
        # If both sides are not hypotenuse, calculate the hypotenuse
        return math.sqrt(a**2 + b**2)

# Input from the user
side1 = float(input("Enter the first side: "))
side2 = float(input("Enter the second side: "))
hypotenuse = input("Is one of these sides the hypotenuse? (yes/no): ").lower()

if hypotenuse == "yes":
    # Calculate the other side when the hypotenuse is given
    result = find_third_side(side1, side2, is_hypotenuse=True)
    print(f"The third side of the triangle is {result:.2f}")
else:
    # Calculate the hypotenuse
    result = find_third_side(side1, side2)
    print(f"The hypotenuse of the triangle is {result:.2f}")
```

```
The third side of the triangle is 19.36
```

In [11]:
```python
#question no.15  Write a python program to print the frequency of each of the characters present in a given string

# Function to count frequency of each character in a string
def character_frequency(s):
    # Create an empty dictionary to store character counts
    frequency_dict = {}

    # Loop through each character in the string
    for char in s:
        # Update count of the character in the dictionary
        if char in frequency_dict:
            frequency_dict[char] += 1
        else:
            frequency_dict[char] = 1

    # Return the frequency dictionary
    return frequency_dict

# Input from the user
input_string = input("Enter a string: ")

# Get the character frequency
frequencies = character_frequency(input_string)

# Display the frequency of each character
print("Character frequencies:")
for char, count in frequencies.items():
    print(f"'{char}': {count}")
```

```
Character frequencies:
'H': 2
'I': 2
' ': 1
'P': 1
'A': 1
```

```
 'R': 1
 'T': 1
```

In [ ]: