Course: B.Tech CSE/AIML/CSTI/FSD
Subject: Python Programming (CSH108B-T) & (CSH108B-P)

Lab 5

***Course Outcome*:**

CSW108B.1: To **impart** understanding of basic programming concepts in python language.

CSW108B.2: To enable the student to articulate given program scenario and **apply** different programming constructs.

Learning outcome:

Students will be able to do hands-on practice of Loops and Strings in Python

***Blooms Taxonomy Level**: BT3*

1. WAP to demonstrate while loop with else statement.
   Ans:

```
# Initialize a variable
count = 0

# Start a while loop that will run until count reaches 5
while count < 5:
    print("Count:", count)
    count += 1  # Increment count

# The else block will be executed after the while loop completes
else:
    print("While loop ended, count is now", count)
```

2. Print 1st 5 even numbers (use break statement).
   Ans:

```
# Initialize variables
```

```
count = 0
even_number = 2

# Start the while loop
while True:
    print(even_number)
    count += 1
    even_number += 2  # Increment to the next even number

    # If we have printed 5 even numbers, break the loop
    if count == 5:
        break
```

3. Print 1st 4 even numbers (use continue statement).

Ans:

```
# Initialize variables
count = 0
even_number = 2

# Start the while loop
while count < 4:
    # Print the current even number
    print(even_number)

    # Move to the next even number
    even_number += 2

    # Increment the count and continue to the next iteration
    count += 1
```

4. WAP to demonstrate Pass statements.

Ans:

```
# A function to demonstrate the use of pass statement
def check_number(number):
    if number < 0:
        print("Negative number")
    elif number == 0:
        # Use pass to do nothing when number is zero
```

```
        pass
    else:
        print("Positive number")

# Test the function with different values
check_number(-5)
check_number(0)
check_number(10)
```

5. Write a Python program to calculate the length of a string.

   Ans:

```
# Accept a string from the user
text = input("Enter a string: ")

# Calculate the length of the string
length = len(text)

# Display the length
print("The length of the string is:", length)
```

6. Write a Python program to count the number of characters (character frequency) in a string.

   Ans:

```
# Accept a string from the user
text = input("Enter a string: ")

# Initialize an empty dictionary to store character frequencies
char_frequency = {}

# Loop through each character in the string
for char in text:
    if char in char_frequency:
        # If the character is already in the dictionary, increment its count
        char_frequency[char] += 1
    else:
        # If the character is not in the dictionary, add it with a count of 1
        char_frequency[char] = 1

# Display the character frequencies
print("Character frequency in the string:")
```

```
for char, count in char_frequency.items():
    print(f"'{char}': {count}")
```

7. Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead of the empty string.

   Ans:

```
# Accept a string from the user
text = input("Enter a string: ")

# Check if the string length is at least 2
if len(text) < 2:
    result = ""
else:
    # Combine the first 2 and last 2 characters
    result = text[:2] + text[-2:]

# Display the result
print("Result:", result)
```

8. Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '$', except the first char itself.

   Ans:

```
# Accept a string from the user
text = input("Enter a string: ")

# Check if the string is empty or has only one character
if len(text) > 1:
    # The first character
    first_char = text[0]

    # Replace all occurrences of the first character (except the first occurrence itself)
    modified_text = first_char + text[1:].replace(first_char, '$')
else:
    # If the string has one character or is empty, there's nothing to replace
    modified_text = text

# Display the result
print("Modified string:", modified_text)
```

9. Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string.

Ans:

```
# Accept two strings from the user
string1 = input("Enter the first string: ")
string2 = input("Enter the second string: ")

# Check if both strings have at least two characters
if len(string1) > 1 and len(string2) > 1:
    # Swap the first two characters of each string
    swapped_string1 = string2[:2] + string1[2:]
    swapped_string2 = string1[:2] + string2[2:]

    # Combine the two strings with a space in between
    result = swapped_string1 + " " + swapped_string2
else:
    result = "Both strings should have at least two characters."

# Display the result
print("Result:", result)
```

10. Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged.

Ans:

```
# Accept a string from the user

text = input("Enter a string: ")



# Check the length of the string

if len(text) >= 3:

    # If the string already ends with 'ing', add 'ly'

    if text.endswith('ing'):

        result = text + 'ly'

    else:

        result = text + 'ing'
```

```
else:
    # If the length of the string is less than 3, leave it unchanged
    result = text

# Display the result
print("Result:", result)
```