Contents

String Operations

Introduction:

String operations are a fundamental aspect of programming as they allow us to manipulate and process string data variables. These operations are commonly used for tasks such as formatting, searching, and comparing strings. In this writeup, we will cover the following string operations: LENGTH, LCASE, UCASE, and SUBSTRING. We will explore their explanations, syntaxes, uses, and examples below.

LENGTH(identifier)

Explanation: LENGTH is a string operation that returns the integer value representing the length of a given string.

Syntax: LENGTH(<identifier>)

Usage: To determine the number of characters in a string.

Example: LENGTH("Happy Days") // will return 10

LCASE(identifier)

Explanation: LCASE is a string operation that returns the input string or character with all its characters converted to lower case.

Syntax: LCASE(<identifier>)

Usage: To convert a string or character to lower case.

Example: LCASE("HApPy") // will return "happy"

UCASE(identifier)

Explanation: UCASE is a string operation that returns the input string or character with all its characters converted to upper case.

Syntax: UCASE(<identifier>)

Usage: To convert a string or character to upper case.

Example: UCASE("Happy") // will return "HAPPY"

SUBSTRING(identifier, start, length)

Explanation: SUBSTRING is a string operation that returns a new string of the specified length, starting at the given position within the original string.

Syntax: SUBSTRING(<identifier>, <start>, <length>)

Usage: To extract a substring from a given string.

Note: Generally, a start position of 1 is the first character in the string.

Example: SUBSTRING("Happy Days", 1, 5) // will return "Happy"

SIMPLE QUESTIONS:

Multiple Choice Questions (MCQ):

1. What is the output of LENGTH("Computer Science")?

a) 10

b) 16

c) 15

d) 14

2. What is the output of LCASE("HELLO WORLD")?

a) "HELLO WORLD"

b) "hello world"

c) "Hello World"

d) "hELLO wORLD"

3. What is the output of UCASE("coding is fun")?

a) "CODING IS FUN"

b) "Coding Is Fun"

c) "coding is fun"

d) "cODING iS fUN"

4. What is the result of SUBSTRING("Introduction to Programming", 1, 12)?

a) "Introduction"

b) "to Programming"

c) "Introductio"

d) "duction to Pr"

5. What is the output of LENGTH(UCASE("abcd"))?

a) 2

b) 4

c) 5

d) 6

1. The LENGTH function returns the _____ of a given string.

2. The function LCASE("GREAT") would return _____.

3. The function UCASE("small letters") would return _____.

4. The function SUBSTRING("JavaScript Language", 12, 8) would return _____.

5. To find the length of the string "Learning is fun!", you would use the function _____.

Complex questions:

Multiple Choice Questions (MCQ):

1. What is the output of LENGTH(UCASE(SUBSTRING("String Operations", 1, 6)))?

a) 4 b) 5 c) 6 d) 7

2. What is the result of SUBSTRING(LCASE("ADVANCED STRING OPERATIONS"), 10, 6)?

a) "string" b) "vanced" c) "STRIN"

3. Which of the following expressions returns the first 5 characters in upper case of the string "Artificial Intelligence"?

a) UCASE(SUBSTRING("Artificial Intelligence", 1, 5))

b) SUBSTRING(UCASE("Artificial Intelligence"), 1, 5)

c) LENGTH(UCASE("Artificial Intelligence"))

d) UCASE(SUBSTRING("Artificial Intelligence", 5, 1))

4. What is the output of

  LENGTH(UCASE(SUBSTRING(LCASE("Multi-Layer Perceptron"), 7, 5)))?

a) 3
b) 5
c) 6
d) 7

5. If LENGTH("abc") + LENGTH("xyz") is equal to LENGTH(SUBSTRING(str, 1, 6)),

  what is the value of 'str'?

a) "abcxyz"
b) "abcdef"
c) "abc123"
d) "xyzabc"
e) Any of the above

1. The output of SUBSTRING(UCASE("deep learning"), 6, 8) is _____.

2. The result of LENGTH(SUBSTRING(LCASE("DATA PROCESSING"), 6, 10)) is _____.

3. The output of LCASE(SUBSTRING("Web Development", 5, 3)) is _____.

4. The result of SUBSTRING(UCASE(LCASE("Neural Networks")), 8, 4) is _____.

5. The LENGTH function applied to the result of

   UCASE(SUBSTRING("Natural Language Processing", 1, 7)) would return _____.

Specimen Paper 2A Q12(b):

The function Length(X) finds the length of a string X.

The function SubString(X,Y,Z) finds a substring of X starting at position Y and Z

characters long. The first character in X is in position 1.

Write pseudocode statements to:

- store the string "Programming is fun" in X
- find the length of the string and output it
- extract the word fun from the string and output it.

ANSWERS:

Simple questions:

Multiple Choice Questions (MCQ):

1. b) 16
2. b) "hello world"
3. a) "CODING IS FUN"
4. a) "Introduction"
5. b) 4

Fill in the Blank Questions:

1. length
2. "great"
3. "SMALL LETTERS"
4. "Language"
5. LENGTH("Learning is fun!")

Complex questions:

Multiple Choice Questions (MCQ):

1. c) 6
2. a) "string"
3. a) UCASE(SUBSTRING("Artificial Intelligence", 1, 5))
   OR
   b) SUBSTRING(UCASE("Artificial Intelligence"), 1, 5)
4. b) 5
5. e) Any of the above

Fill in the Blank Questions:

1. "LEARNING"
2. 10
3. "dev"
4. "NETW"
5. 7

Specimen Paper 2A Q12(b):

X ← "Programming is fun"
OUTPUT "Length of X = ", LENGTH(X)
OUTPUT SubString(X, 16, 3)