**Unit I: -**

**2022-23(CT)**

1. Explain any two sequential data types in python with proper example.

Ans:-

1. **Lists**:
   * A list is an ordered collection of items, where each item can be of any data type (e.g., numbers, strings, other lists, etc.).
   * Key characteristics:
     + **Ordered**: The order of elements in a list matters.
     + **Mutable**: You can modify the elements of a list after its creation.
     + **Indexed**: You can access individual elements using their index (starting from 0).
     + **Dynamic size**: Lists can grow or shrink as needed during program execution.
   * Example:
   * # Creating a list of programming languages
   * programming\_languages = ["Python", "Java", "JavaScript", "C++", "Ruby"]
   * # Accessing elements by index
   * print(programming\_languages[0]) # Output: Python
   * print(programming\_languages[2]) # Output: JavaScript
2. **Tuples**:
   * A tuple is similar to a list, but with a few key differences:
     + **Immutable**: Once you create a tuple, you cannot change its elements.
     + **Used for fixed collections**: Tuples are often used to represent related values that shouldn’t be modified.
   * Example:
   * # Creating a tuple of RGB color values
   * white = (255, 255, 255)
   * black = (0, 0, 0)
   * # Accessing elements by index
   * print(white[0]) # Output: 255
   * print(black[1]) # Output: 0

Remember that choosing between lists and tuples depends on your specific use case. If you need a collection that can be modified, use a list. If you want to ensure immutability, use a tuple. Both data types are powerful tools for organizing and managing data in Python! If you have any more questions or need further clarification, feel free to ask! 😊🐍👍 .

1. Write a program to find largest of three numbers without using max() function.
2. With suitable examples explain the membership and identity operators.

**28 Jul 2022**

1. What is variable? What are the rules and conventions for declaring a variable?
2. ExplaFin in detail the identity and membership operators in python with appropriate example.
3. What is the output of the following expressions
4. 54//17
5. -17//10
6. 2==3-1
7. 4+5\*3//5
8. [1,2,3,4,5][-1]
9. (1,2,3)\*3

**10 Nov 2022**

1. What are list in python? How to define and access the elements of list?
2. Discuss the int(), float(), str() type conversion functions with examples.
3. Write a python program to convert height in feet and inches to cm. [1 feet = 12 inch and 1 inch = 2.54 cm] (Sample input: 2 feet 7 inch Sample output: 78.74cm)

**15 Jul 2023**

1. What are lists in python? What is the difference between the list methods *append and extend*? Explain with suitable example.
2. Explain python logical operators with suitable example.
3. Write a python program that interchanges the first and last character of a given string.

**Unit II:-**

**2022-23**

1. With suitable program explain the working of while loop.

Ans:-

Certainly! Let’s explore the working of a **while loop** in Python.

In Python, a **while loop** is used to execute a block of statements repeatedly until a given condition is satisfied. When the condition becomes false, the line immediately after the loop in the program is executed. Here’s the basic syntax:

while expression:

# Statement(s) to be executed

* The loop will continue executing the statement(s) as long as the specified expression evaluates to True.
* It’s essential to ensure that the expression eventually becomes False, otherwise, the loop will run indefinitely.

Let’s illustrate this with an example. Suppose we want to print numbers from 1 to 3 using a while loop:

count = 1

while count < 4:

print(count)

count += 1

In this example:

1. We initialize the count variable to 1.
2. The while loop checks whether count is less than 4.
3. If count is less than 4, it executes the code block (printing the value of count) and increments count.
4. The loop continues until count becomes 4 (which satisfies the condition).

The output of the above program will be:

1

2

3

Remember to update the loop control variable (count in this case) within the loop to avoid an infinite loop. Otherwise, the loop will never end! 😊

1. Explain the following dictionary methods.
2. dict.clear()
3. dict.items()
4. pop()
5. dict.copy()
6. Write a program to find sum of digits in the string (Read a string alphabets and digits).

**28 Jul 2022**

1. What is the purpose of else clause in a loop? Explain how else works with while and for loops, with examples.
2. Explain the use of break and continue statement in for loop with suitable examples.
3. Write a program to add digits of a number using while loop.

**10 Nov 2022**

1. Difference between continue and pass statements.
2. What are the different loops available in python? Explain in brief.
3. Write a program to display the Fibonacci sequence up to nth term where n is provided by the user.

**15 Jul 2023**

1. Explain if elif else statement in python with syntax, flowchart and example?
2. Write a program to display the Fibonacci sequence up to nth term where n is provided by the user.
3. Write a python program to count the number of vowels in a string provided by the user.

**Unit III:-**

**28 Jul 2022**

1. What is the purpose of else clause in a loop? Explain how else works with while and for loops with examples.
2. Explain the use of break and continue statement in for loop with suitable examples.
3. Write a program to add digits of a number using while loop.

**10 Nov 2023**

1. Differentiate between continue and pass statements.
2. What are the different loops available in python? Explain in brief.
3. Write a program to display the Fibonacci sequence up to nth term where n is provided by the user.

**15 Jul 2023**

1. Describe function with default arguments with suitable program.
2. Explain how to implement multiple inheritance in python.
3. Write a program to find the factorial of given number without recursion and with recursion.

**Unit IV**

**28 Jul 2022**

1. Discuss the following list functions.
2. Len()
3. Sum()
4. Any()
5. All()
6. sorted
7. How to handle an exception using try except block? Explain with the help of a program.
8. Write a python program to check whether a string is palindrome.

**10 Nov 2022**

1. List the various dictionary methods and explain any 3 of them.
2. Explain the except clause with multiple exceptions.
3. Write a program to use max(),min() and sorted() methods in tuples.

**15 Jul 2023**

1. Explain how to create, raise and handle user defined exceptions in python.
2. Write a python function that takes two lists and returns True if they have at least one common member.
3. Write a python program to handle a ZeroDivisionError exception when dividing a number by zero.

**Unit V**

**28 Jul 2022**

1. Discuss the following methods associate with the file object.
   1. Read()
   2. Readline()
   3. Readlines()
2. Write a python block to create the table StudentInfo with suitable attributes/columns in MySQL and then write a python program to insert some records in the table and fetch all rows from the table.
3. Write a program to append one file into another.

**10 Nov 2022**

1. Describe the different access modes of the file manipulation.
2. Write a python program to create a table and insert some records in that table. Then selects all rows from the table and display the records.
3. Write a program to copy contents of one file into another.

**15 Jul 2023**

1. How to perform open, read, write, and close operations on a text file?
2. Write a program to display content of a text file on the monitor by reading it word by word.
3. Write a python program to create a table and insert some records in that table. Finally selects all rows from the table and display the records. Use suitable names for data base and table.