Python Week -7

Assignment Questions

PW SKILLS

Theory Assignment:

1. **What is the purpose of file handling in Python, and why is it essential for organizations?**

2. **Explain the concept of a file in Python and its role in storing data permanently.**

3. **Differentiate between text files and binary files in Python, providing examples of each.**

4. **How are text files stored internally, and how does a text editor interpret the contents of a text file?**

5. **Describe the process of opening and closing a text file in Python, including the syntax and optional arguments.**

6. **What are the various file access modes available in Python's open() function, and how do they affect file handling?**

7. **Explain the significance of using the "with" clause when opening files in Python, and how does it simplify file handling?**

8. **Discuss the methods available for writing data to a text file in Python, including write() and writelines().**

9. **How can numeric data be written to a text file in Python, and why is conversion to a string necessary?**

10. **Compare and contrast the write() and append() methods when working with existing text files in Python.**

11. **Describe the methods for reading data from a text file in Python, including read(), readline(), and readlines().**

12. **Explain how the tell() and seek() methods are used to manipulate the position of the file object within a text file.**

13. **Discuss the process of creating a text file and writing data to it in Python, including the implications of different file modes.**

14. **What are some best practices for file handling in Python, including closing files after use and error handling?**

15. **What is the difference between packages and modules ,explain with examples.**

Programming Assignment:

1. Define a Python module named constants.py containing constants like pi and the speed of light.
2. Write a Python module named calculator.py containing functions for addition, subtraction, multiplication, and division.
3. Implement a Python package structure for a project named ecommerce, containing modules for product management and order processing.
4. Implement a Python module named string_utils.py containing functions for string manipulation, such as reversing and capitalizing strings.
5. Write a Python module named file_operations.py with functions for reading, writing, and appending data to a file.
6. Write a Python program to create a text file named "employees.txt" and write the details of employees, including their name, age, and salary, into the file.
7. Develop a Python script that opens an existing text file named "inventory.txt" in read mode and displays the contents of the file line by line.
8. Create a Python program that reads a text file named "data.txt" and calculates the total number of words present in the file.
9. Write a Python script to open a text file named "sales.txt" in append mode and add new sales data at the end of the file.
10. Develop a Python program that reads a text file named "contacts.txt" and extracts email addresses from each line of the file.
11. Write a Python program to open a text file named "grades.txt" and find the average grade of students listed in the file.
12. Create a Python script that reads a text file named "expenses.txt" and calculates the total amount spent on various expenses listed in the file.
13. Create a Python program that reads a text file named "paragraph.txt" and counts the occurrences of each word in the paragraph, displaying the results in alphabetical order.