

1. a) Write Python programs to do the following: a) Read a list of elements. Create a new list having all the elements minus the duplicates (Use functions). Use one-line comprehensions to create a new list of 28 even numbers. Create another list reversing the elements.

b) Write a python program to count the frequency of words in a given file.

c) Read a list of numbers. Use a recursive function to find the maximum of “n” numbers.

2. Introduction to Python Functions: Write a temperature converter python program, which is menu driven. Each such conversion logic should be defined in separate functions. The program should call the respective function based on the user's requirement. The program should run as long as the user wishes so. Provide an option to view the conversions stored as list of tuples with attributes - from unit value, to unit value sorted by the user's choice (from-value or to-value).

3. Python Classes: Write a python class to reverse a sentence (initialized via constructor) word by word. Example: “I am here” should be reversed as “here am I”. Create instances of this class for each of the three strings input by the user and display the reversed string for each, in descending order of number of vowels in the string.

4. Python File Handling & List Comprehension: Write a python program to read contents of a file (filename as argument) and store number of occurrences of each word in a dictionary. Display the top 10 words with most number of occurrences in descending order. Store the length of each of these words in a list and display the list. Write a one-line reduce function to get the average length and one-line list comprehension to display squares of all odd numbers and display both.

5. JavaScript –Create and validate a HTML form for entering student details and marks. Use Javascript to calculate the grade from student marks entered.

6. Dynamically loading JSON data - Implement a HTML+JS application that has a JSON Array with details of different kinds of data. Example: Model, Name, Price, Year. Display details of each vehicle dynamically by only showing details of the vehicle that the user has selected (via mouse-over).