TP 1

1. Write a python program that will confirm if a number is even or odd.

2. Write a python program that will find out if a number is divisible by 7 and a multiple of 5. The number will be entered by the user and the number entered by the user must be between 1500 and 2700 both included.

3. Write a Python Program to convert from celcius to farenheit.

4. Write a Python Program to convert from farenheit to celcius.

5. Write a python program that will accept a word from the user. The program will swap the first and the last character of the word. The First character of the resulting string must be an upper case while the last character of the resulting string must be a lower case character.

6. Write a python program that will accept an alphabet from the user. The program should tell the user if the character is a vowel or a consonant.

7. Write a python program that will accept a number from the user then print 'FIZZ' if it is a multiple of 3, print 'BUZZ' if it is a multiple of 5, print "FIZZBUZZ" if it is a multiple of 3 and 5.

8. Write a Python program to print the alphabet pattern 'E'

9. Write a Python program to print the alphabet pattern 'L'

10. Write a Python program to sum two integers. However, if the sum is between 15 and 20 it will return 20.

11. Write a Python program to create the multiplication table (from 1 to 10) of a number entered by the user.

12. Write a program to type Hello if the number entered by a User is a multiple of 4 otherwise print Bye.

13. Write a program that will accept a number from the user then the program will display

the first and last digit of the number.

14. Write a python program that will accept percentage score from the user then will display the grade according to the following criteria.
    a. More than 100 - Error
    b. Between 90 and 100 - A3
    c. Between 80 and 90 - A2
    d. Between 70 and 80 - A1
    e. Between 65 and 70 - B2
    f. Between 60 and 65 - B1
    g. Between 50 and 60 - C
    h. Between 45 and 50 - D
    i. Between 40 and 45 - E
    j. Below 40 - Tufiakwa
       NOTE - The upper bound of the ranges are exclusive.

15. Write a python program that will accept the cost price of a bike then calculate the amount to be paid as tax based on the following criteria.
    a. More than 100000 - 23.25 percent
    b. Between 80000 and 100000 - 20.05 percent
    c. Between 60000 and 80000 - 18.50 percent
    d. Between 40000 and 60000 - 15.75 percent
    e. Between 10000 and 40000 - 12.5 percent
    f. Between 5000 and 10000 - 10.35 percent
    g. Below 5000 - 8.75 percent
       NOTE - The upper bound of the ranges are exclusive.

16. Write a python program that will check if a year is a leap year or not.

17. Write a python program to check if a number entered is 3 digit or not.

18. Write a python program to check whether a number entered by the user is positive, negative or zero.

19. Write a program that will accept the age of 4 people then display the youngest one and the oldest one.

20. Write a python program to accept the following from the user then calculate the percentage of days the user went to work.
    a. Total number of Working days

b. Total number of days absent

21. A company decides to give bonus to employees according to the following criteria based on their period of service.
    a. Above 10 Years - 10%
    b. Between 6 and 10 years - 8%
    c. Less than 6 Years - 5%
       The user is to give their salary and their period of service. The program should print their Bonus.

22. Write a program to accept 2 numbers and and a mathematical operator and perform operations accordingly.

23. Write a python program to accept percentage and display the category according to the criteria below:
    a. Below 40 - Failed
    b. Between 40 and 55 - Fair
    c. Between 55 and 65 - Good
    d. Above 65 - Excellent

24. Accept the marks of Maths, English, Science and Social Studies from the user then display the allotted stream according to the following criteria.

    a. All subjects > 80 each - Science Batch
    b. English > 80, Maths and Science > 50 each - Commercial Batch
    c. English > 80, Social Studies > 80 - Humanities Batch

TP 2

Lists and Tuples
1. Python Program to Find the Largest Number in a List
2. Python Program to Find the Second Largest Number in a List
3. Python Program to Put Even and Odd elements in a List into Two Different Lists
4. Python Program to Merge Two Lists and Sort it
5. Python Program to Sort the List According to the Second Element in Sublist
6. Python Program to Find the Second Largest Number in a List Using Bubble Sort
7. Python Program to Sort a List According to the Length of the Elements
8. Python Program to Find the Union of two Lists
9. Python Program to Find the Intersection of Two Lists
10. Python Program to Create a List of Tuples with the First Element as the Number and Second Element as the Square of the Number
11. Python Program to Find all Numbers in a Range which are Perfect Squares and Sum of all Digits in the Number is Less than 10
12. Python Program to Find the Cumulative Sum of a List where the ith Element is the Sum of the First i+1 Elements From The Original List
13. Python Program to Generate Random Numbers from 1 to 20 and Append Them to the List
14. Python program to Sort a List of Tuples in Increasing Order by the Last Element in Each Tuple
15. Python Program to Swap the First and Last Value of a List
16. Python Program to Remove the Duplicate Items from a List
17. Python Program to Read a List of Words and Return the Length of the Longest One
18. Python Program to Remove the ith Occurrence of the Given Word in a List where Words can Repeat
19. Python Program to Remove All Tuples in a List of Tuples with the USN Outside the Given Range
20. Python Program to solve Maximum Subarray Problem using Divide and Conquer
21. Python Program to solve Maximum Subarray Problem using Kadane's Algorithm
22. Python Program to Find Element Occurring Odd Number of Times in a List

Sets
1. Python Program to Count the Number of Vowels Present in a String using Sets
2. Python Program to Check Common Letters in Two Input Strings
3. Python Program that Displays which Letters are in the First String but not in the Second
4. Python Program that Displays which Letters are Present in Both the Strings

5. Python Program that Displays which Letters are in the Two Strings but not in Both

Dictionaries
1. Python Program to Add a Key-Value Pair to the Dictionary
2. Python Program to Concatenate Two Dictionaries Into One
3. Python Program to Check if a Given Key Exists in a Dictionary or Not
4. Python Program to Generate a Dictionary that Contains Numbers (between 1 and n) in the Form (x,x*x).
5. Python Program to Sum All the Items in a Dictionary
6. Python Program to Multiply All the Items in a Dictionary
7. Python Program to Remove the Given Key from a Dictionary
8. Python Program to Form a Dictionary from an Object of a Class
9. Python Program to Map Two Lists into a Dictionary
10. Python Program to Count the Frequency of Words Appearing in a String Using a Dictionary
11. Python Program to Create a Dictionary with Key as First Character and Value as Words Starting with that Character

Lambda Functions
1. Write a lambda function that takes a number as input and returns its square.
2. Create a lambda function that takes two numbers as input and returns their sum.
3. Use a lambda function to sort a list of strings in alphabetical order.
4. Sort a list of tuples based on the second element of each tuple using the sorted() function and a lambda.
5. Write a lambda function that takes a number as input and returns "Even" if it's even and "Odd" if it's odd.
6. Create a lambda function that takes three numbers as input and returns the maximum of the three.
7. Write a function that takes a list of numbers and a lambda function. Use the lambda function to square each element in the list.