# List of Data Science Programs

## Python Programs

1. Write a script to get the largest number from a list.
2. Write a program to remove duplicates from a list.
3. Write a script to convert a tuple to a dictionary.
4. Write a script to merge two python dictionaries.
5. Write a function that takes two lists and returns true if they have at least one common member.
6. Write a program to determine which one is the earlier date from the two given dates.
7. Write a script to subtract 5 days from current date.
8. Write a program to open a file and copy the contents to another file.
9. Write a program to capitalise each word in a file.
   ***Hint - Use str.upper() method***
10. Write a program to search a word in a file and replace with another word.
    ***Hint - Use str.replace("old text","new text") method***
11. Write a program to count number of lines in a file.
12. Write a program to retrieve lines having two consecutive 1's.
13. Write programs to perform the following matrix operations. (Use matrices of order 3 X 3 )
    (a) addition
    (b) subtraction
    (c) multiplication
    (d) scalar multiplication
    (e) transpose
14. Create the following matrices for various 2D geometric transformations.
    (a) translation matrix
    (b) rotation matrix
    (c) scaling matrix
15. Create the following matrices for various 3D geometric transformations.

(a) translation matrix

(b) rotation matrix

(c) scaling matrix

16. Write a program to perform SVD (Singular Value Decomposition) of a square matrix of order 3. Reconstruct the original matrix from the components.

17. The marks obtained by students in a class are given below.

    22,87,5,43,56,73,55,54,11,20,51,5,79,31,27

    Draw a histogram of these marks for intervals 0 - 10, 10 - 20,..., 90 - 100.

18. Draw a histogram of sepal length in the iris data set (given).

19. Draw a scatterplot that shows the relationship between rollnos and marks of students (given below) in a class.

    rollnos = [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15]

    marks = [22,87,5,43,56,73,55,54,11,20,51,5,79,31,27]

20. Draw a scatterplot that shows the relationship between sepal length and sepal width in the iris data set (given).

# R Programs

21. Given a data set of 15 food items having 4 features - ingredient, sweetness, crunchiness and food type. Write a R program to predict the food type of tomato using kNN algorithm.