

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 program to predict the food type of tomato using k-NN algorithm.
- data set - food.csv*
22. As per a survey conducted in an institution, students are classified based on the two attributes of academic excellence(X) and other activities(Y). Write a program to identify the classification of a student with $X = 5$ and $Y = 7$ using k-NN algorithm(choose k as 3).
- data set - survey.csv*