

Data Science

Question Bank-1

1. Explain the difference between splitting and partitioning of an array using numpy? How to split two arrays horizontally and vertically.
2. Write a program to flatten the array in 1D,2D and 3D.
3. How do you access elements in a numpy array using Boolean indexing?
4. Write a numpy program to create a 3×3 matrix and then find the maximum and minimum element of the array along the first axis.
5. Create two arrays of size 5×4 then perform operations like stacking, append and concatenate. Specify the difference among these approaches.
6. Discuss the key facets of data in data science and how they influence the overall data analysis process.
7. Explain the Data science process you apply to solve a business problem.
8. Which strategies would you use for effective feature engineering during the data preparation phase of a data science project, and why are they important?
9. Write a Python program to reverse the string in a single dimension array.
10. Write a Python program to print the occurrence of the value of the first element in a single dimension array.
11. Use Python Slicing operator to show the output for the following of a given list:
A = [1,2,3,4,5]
 - a) Get all the items before a specific position.
 - b) Get all the items from one position to another position.
 - c) Get all the items
 - d) Get all the items after a specific position
12. Illustrate the Data Science process in detail, outlining its key steps, methodologies and significance of each phase in extracting meaningful insights.
13. Write a program in python to create two-dimensional array and perform the following operations:
 - a) Display the dimensions
 - b) Print rows and columns
 - c) Total number of elements in array
 - d) Data type of element in array
14. Consider two arrays:
A = [1,2,3,4,5,6]
B = [7,8,9,10,11,12]
15. Perform the following operations using numpy and illustrate its output:
 - a) Concatenate
 - b) hstack
 - c) vstack
 - d) dstack

- e) search even values in array A
- f) sort array B
- 16. What are the different ways of copying an array with an example?
- 17. Differentiate between numpy identity function and eye function with an example.
- 18. Create the following NumPy arrays:
 - a) A 1-D array called vowels having the elements 'a', 'e', 'i', 'o' and 'u'.
 - b) A 2-D array called ones having 2 rows and 5 columns and all the elements are set to 1 and dtype as int.
- 19. What is an array and how is it different from a list?
- 20. What is the name of the built-in array class in NumPy ?
- 21. Create a 2-D array called myarray4 using arange() having 14 rows and 3 columns with start value = -1, step size 0.25 having. Split this array row wise into 3 equal parts and print the result.
- 22. List and explain Characteristics of Data.
- 23. Explicate Data Preparation and Data Exploration and Analysis.