In this tutorial, we’ll walk through using NumPy to analyze data on wine quality. The data contains information on various attributes of wines, such as pH and fixed acidity, along with a quality score between 0 and 10 for each wine. The quality score is the average of at least 3 human taste testers. As we learn how to work with NumPy, we’ll try to figure out more about the perceived quality of wine.

1. Down load the dataset winequality-red.csv file( each column is separated by a semicolon (;)) from the [UCI Machine Learning Repository](https://archive.ics.uci.edu/ml/)
2. Convert it to numPy array, name it as wines (leave the first row of the list) and specify the data type of array as float.
3. Identify the shape of the array.
4. Display the element at row 3 and column 4.
5. Display the first three items from the fourth column.
6. Display third column from each row.
7. Display fourth row.
8. Assign value 10 to 2nd row and 6th column element.
9. Take the 10th column from wines array and name that slice as slice\_new and assign value 666 to all elements of slice\_new.
10. Display wines array.
11. Find the data type of wines array and Change the data type to int.
12. Add 10 points to each quality score.
13. Find the sum of all the elements in an array
14. Find the sum of all the values in every column.
15. Find the sum of all the values in every row.
16. Add the quality column to itself.
17. Multiply alcohol by quality.
18. Display which wines have a quality rating higher than 5.
19. Check if any wines have a quality rating equal to 10.
20. Select rows in wines where the quality is over 7
21. Display wines with alcohol greater than 10 and quality greater than 7.
22. Change the shape of wines array.