1. Create a 2D array and print the dim and shape
2. Create an array of 20 numbers using arange function and slice the values between 10 to 15
3. Create 2 arrays of 7X5 dimension and broadcast between the 2 arrays using
   1. Addition
   2. Subtraction
   3. Multiplication
   4. Division
4. Create 2 incompatible arrays for broadcast and print out the error
5. Create two arrays of any dimension and perform vstack and hstack
6. Append two arrays using axis = 0 and axis = 1
7. Create a dataframe for 8 X 4 dimension using list of lists and name the columns while dataframe creation
8. Create a dataframe of 4 X 8 dimension using a dictionary
9. Use loc and iloc to subset the data for the above dataframe
10. How to check the total number of not null values in a column?
11. Create a dataframe with missing values and fill them all with 100
12. Create a dataframe with missing values and drop the null records
13. Perform following aggregation task on below table
    1. Get the average age group by Regrion
    2. Get the sum of Age and Validation group by Hair color and then reset the index
    3. Get the man and the median of Age group by Region
14. Split the below table into half and perform merge (inner, left and right) on Region. One example for each type of merge (inner, left and right)
15. Split the below table and perform concat row wise and column wise

|  |  |  |  |
| --- | --- | --- | --- |
| Age | Hair Color | U.S. Region | Validation |
| 25 | Black | Southwest | 1 |
| 30 | Black | Northwest | 1 |
| 45 | Red | Northeast | 1 |
| 35 | Blond | Southwest | 0 |
| 33 | Brown | Southwest | 0 |
| 35 | Brown | Northeast | 0 |
| 25 | Black | Southwest | 0 |
| 52 | Brown | Southeast | 0 |
| 21 | Blond | Southwest | 1 |
| 24 | Blond | Northeast | 0 |
| 48 | Black | Southwest | 1 |
| 22 | Black | Southwest | 0 |
| 27 | Brown | Northeast | 0 |
| 28 | Black | Southeast | 1 |
| 21 | Blond | Southeast | 1 |
| 51 | Black | Northwest | 0 |
| 23 | Brown | Southeast | 1 |