**Pandas Dataframe**

**Assignment 2**

1. Write a Pandas program to create and display a DataFrame from a specified dictionary data which has the index labels.

**Sample DataFrame:**

**exam\_data** = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'],

'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19],

'attempts': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],

'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']}

**labels** = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']

1. Write a Pandas program to display a summary of the basic information about a specified DataFrame and its data.
2. Write a Pandas program to get the first 3 rows of a given DataFrame.
3. Write a Pandas program to select the 'name' and 'score' columns from the DataFrame given in Q1.
4. Write a Pandas program to select the specified columns and rows from a given data frame.
5. Write a Pandas program to count the number of rows and columns of a DataFrame.
6. Write a Pandas program to select the rows where the score is missing, i.e. is NaN.
7. Write a Pandas program to select the rows the score is between 15 and 20 (inclusive).
8. Write a Pandas program to select the rows where number of attempts in the examination is less than 2 and score greater than 15.
9. Write a Pandas program to change the score in row 'd' to 11.5.
10. Write a Pandas program to calculate the sum of the examination attempts by the students.
11. Write a Pandas program to calculate the mean score for the students in DataFrame.
12. Write a Pandas program to append a new row 'k' to DataFrame with given values for each column. Now delete the new row and return the original data frame.
13. Write a Pandas program to sort the data frame first by 'name' in descending order, then by 'score' in ascending order.
14. Write a Pandas program to replace the 'qualify' column contains the values 'yes' and 'no' with True and False.
15. Write a Pandas program to change the name 'James' to 'Suresh' in name column of the data frame.
16. Write a Pandas program to delete the 'attempts' column from the DataFrame.
17. Write a Pandas program to insert a new column in existing DataFrame.
18. Write a Pandas program to iterate over rows in a DataFrame.
19. Write a Pandas program to get list from DataFrame column headers.