Pandas Assignment – 2

**Note**: Consider the following Python dictionary data and Python list labels

data = {'creatures': ['Eagles', 'Eagles', 'Ducks', 'Herons', 'Herons', 'Eagles', 'Ducks', 'Eagles', 'Herons', 'Herons', 'Eagles'],

'weight': [2.0, 5, 3.0, np.nan, 7, 2.5, 6, np.nan, 9, 3, 2.0],

'frequency': [1, 3, 2, 5, 2, 3, 1, 3, 4, 2, 1],

'status': ['no', 'no', 'yes', np.nan, 'yes', 'yes', 'yes', 'no', 'yes', 'yes', 'no'],

'height': [1.2, 2.5, 1.8, 3.0, 2.2, 1.9, 2.6, 1.4, 2.8, 2.3, 1.1],

'region': ['North', 'South', 'East', 'West', 'North', 'South', 'East', 'West', 'North', 'East', 'South'],

'danger\_level': ['low', 'medium', 'high', 'low', 'high', 'medium', 'high', 'low', 'medium', 'high', 'low']}

labels = ['x', 'y', 'z', 'w', 'v', 'u', 't', 's', 'r', 'q', 'p']

**Note**: Solve the given question below on the basis of above dictionary.

1. Write a program to create a DataFrame named df from the above dictionary data, using labels as the index.
2. Write a program to display the basic information of the DataFrame, including its summary statistics and data types.
3. Write a program to display every alternate row of the DataFrame (starting from index 0).
4. Write a program to display only rows at index positions 1st, 3rd, and 7th from columns creatures and weight of the DataFrame.
5. Write a program to select and display the rows where the frequency is less than 4.
6. Write a program to select and display all rows where there are NaN values in the columns weight or status.
7. Write a program to fill the NaN values in the DataFrame with the mode (most frequent value) of the respective columns.
8. Write a program to find the total number of frequency visits for the bird 'Herons'.
9. Write a program to count and display the number of each type of creature in the DataFrame.
10. Write a program to remove duplicate rows from the DataFrame df permanently. Display the DataFrame after the changes.
11. Write a program to replace the status of 'no' to 'not available' for all occurrences in the DataFrame df.
12. Write a program to add a new column size to the DataFrame df, where the values are based on the height column: label any bird taller than 2.5 as 'Large', otherwise label as 'Small'.
13. Write a program to sort the DataFrame df by danger\_level and height in descending order.
14. Write a program to reset the index of the DataFrame df to the default integer index, without affecting the original index.
15. Write a program to create a new DataFrame df\_copy by selecting only the rows where weight is greater than 5, and include only the columns creatures, weight, and region.