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.

I. Write a program to create a DataFrame named df from the above dictionary data, using labels as the index.

II. Write a program to display the basic information of the DataFrame, including its summary statistics and data types.

III. Write a program to display every alternate row of the DataFrame (starting from index 0).

IV. Write a program to display only rows at index positions 1st, 3rd, and 7th from columns creatures and weight of the DataFrame.

V. Write a program to select and display the rows where the frequency is less than 4.

VI. Write a program to select and display all rows where there are NaN values in the columns weight or status.

VII. Write a program to fill the NaN values in the DataFrame with the mode (most frequent value) of the respective columns.

VIII. Write a program to find the total number of frequency visits for the bird 'Herons'.

IX. Write a program to count and display the number of each type of creature in the DataFrame.

X. Write a program to remove duplicate rows from the DataFrame df permanently. Display the DataFrame after the changes.

XI. Write a program to replace the status of 'no' to 'not available' for all occurrences in the DataFrame df.

XII. 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'.

XIII. Write a program to sort the DataFrame df by danger_level and height in descending order.

XIV. Write a program to reset the index of the DataFrame df to the default integer index, without affecting the original index.

XV. 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.