

**With the given dictionary code:**

```
data = {
    'Name': np.random.choice(['Alice', 'Bob', 'Charlie', 'David', 'Eva'],
size=50),
    'Age': np.random.randint(20, 40, size=50),
    'Gender': np.random.choice(['Male', 'Female'], size=50),
    'Score': np.random.randint(60, 100, size=50),
    'City': np.random.choice(['New York', 'Los Angeles', 'Chicago',
'Houston', 'Miami'], size=50)
}
```

### **Exercise 1: Data Exploration**

Create a DataFrame using the previous Dictionary with the name of {df} and Display the first 5 rows of the DataFrame and show summary information.

### **Exercise 2: Data Filtering and Selection**

Display the names of female individuals who are older than 30.

### **Exercise 3: Data Cleaning and Transformation**

Replace the city names with abbreviated city codes, for example {New York → NY}

(Hint: use the following abbreviation 'New York': 'NY', 'Los Angeles': 'LA', 'Chicago': 'CH', 'Houston': 'HO', 'Miami': 'MI' )

**Exercise 4:** Given a DataFrame df [[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]] display summary statistics (count, mean, min, max, etc.) for each column.

**Exercise 5:** Given a DataFrame df {'A': [4,5,7,1,10,4], 'B': [5,2,1,9,23,5], 'C': [1,2,3,4,5,6]} calculate the sum of values in column 'B'.