**Psuedo code-:**

**1**. Import pandas library

**2**. Load the dataset "Data.csv" into a DataFrame

NOTE-: Bootstrap sampling is used in this case to perform data augmentation by generating synthetic data that resembles the original dataset. It involves randomly selecting rows from the dataset with replacement until we have the desired number of samples3. Define a function for bootstrap sampling:

a**. Input**: DataFrame (data.csv file), integer num\_samples (50,000 agents)

b. **Output**: frequencies.text file

c. Initialize an empty list synthetic\_data

d. While the length of synthetic\_data is less than num\_samples:

i. Sample a row randomly with replacement from the original dataset

ii. Append the sampled row to synthetic\_data

e. Return the concatenated synthetic\_data DataFrame

**3.** Generate synthetic data using the bootstrap sampling function with num\_samples = 50,000

**4.** Print the number of rows in the synthetic dataset

**5**. Save the synthetic dataset to a CSV file named "Synthetic\_Data\_Bootstrapping.csv"

**6.** Compute the frequencies of unique values in the synthetic dataset:

a. Use the value\_counts() function to compute frequencies

**7.** Print the computed frequencies to the console

**8**. **Validation step (Optional) -:** You can also compare the proportions of table 2 and your final synthetic\_data, even they should be close to each other.