ASSIGNMENT-6

Description:

- This program takes a series of numbers from the user and plots their histogram within a specified range. Additionally, it allows the user to add new numbers upon request and calculates the average, median, and mode values for these added numbers.

drawHistogram Function:

- This function draws the histogram within the specified range.
- The histogram is created using asterisks (*) to represent each value.
- The height of each column is determined by the frequency of values in that column.

add_number Function:

- This function adds new numbers from the user to the array.
- The added numbers must fall within a specific lower and upper bound.

calculateAverage Function:

- This function calculates the average of the numbers within a specified range.
- The average is obtained by dividing the sum of all numbers in the range by the count of numbers.

calculateMedian Function:

- This function calculates the median of the numbers within a specified range.
- The median is the middle value of the sorted numbers or the average of the two middle numbers in case of an even number of data points.

calculateMode Function:

- This function calculates the mode of the numbers within a specified range.
- The mode represents the most frequently occurring value in the dataset.

find_size_of_array Function:

- This function finds the size of an array.
- The array is terminated with a value of -1.

main Function:

- Executes the main operation.
- Takes lower and upper bound values from the user.
- Draws the histogram and prompts the user to add new numbers if desired.
- Calculates and prints the average, median, and mode values for the added numbers.

This program provides users with the opportunity to perform data analysis and computes fundamental statistical properties of the dataset.

```
int arr[] ={
        45,  46,  47,  48,  49,  50,  133,  52,  53,  54,  55,  111,  57,  58,  59,  60,
        61,  62,  63,  64,  65,  66,  55,  55,  69,  70,  55,  45,  73,  55,  75,  76,
        77,  78,  79,  80,  81,  82,  55,  55,  85,  86,  87,  88,  89,  90,  91,  92,
        93,  193, 95,   133,  76,  191,  55, 100, 101, 102, 76, 104, 105, 106, 107, 108,
       120, 110, 111, 112, 113, 114, 115, 116, 117, 118, 163, 120, 121, 122, 193, 124,
       125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140,
       141, 193, 133, 144, 145, 146, 147, 148, 149, 150, 151, 193, 153, 154, 155, 156,
       157, 158, 111, 160, 120, 162, 163, 128, 165, 166, 167, 168, 169, 170, 171, 172,
       173, 174, 175, 176, 177, 111, 179, 180, 181, 111, 120, 184, 133, 186, 187, 188,
       125, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 125, 201, 202, 203, 173,
       205,  61, 128, 173,  76, 111, 133, 45, -1};
```

Outputs :

```
Enter values A nd B values:
83 120
                            *
                            *
                            *         *
                            *         *
                            *         *
  ********** *     *** ***** ********* *
Would you like to add new numbers(Press 1 for yes,Press 0 for no):
```

```
Would you like to add new numbers(Press 1 for yes,Press 0 for no):1
Enter the numbers(-1 to exit):100
101
102
84
84
                            *
                            *
                            *         *
                            *         *
 *                  ***     *         *
 ********** *     *** ***** ********* *
Average:103.93
Median :106.00
Mode:111.00
```

```
Enter values A nd B values:
120 150
             *
             *
*            *
*    *  *    *
*    *  *    *
*** ******************  *******
Would you like to add new numbers(Press 1 for yes,Press 0 for no):
```

```
Would you like to add new numbers(Press 1 for yes,Press 0 for no):1
Enter the numbers(-1 to exit):130
130
-1
             *
             *
*            *
*    *  * *  *
*    *  * *  *
*** ******************  *******
Average:132.57
Median :132.50
Mode:133.00
```