

This program is based on a discussion in class to clarify the use of arrays. In particular, we use arrays to store **frequency data** for student quiz marks between 0 and 5.

In addition, the number of students in the class have been limited to 30 (in response to another question from class).

```
class BasicArrayDemo
{
    public static void main (String[] args)
    {
        int[] values = new int[6]; // valid marks are from 0 to 5
        int maxClassSize = 30; // restrict entry to 30 valid marks
        int countStudents = 0; // track number of valid marks
        int numMarks = 0; // a second count of valid marks using
        // the frequency data
        int sumMarks = 0; // the sum of all marks, required for mean
        int mark; // the individual mark entered by user

        do
        {
            System.out.println("Enter a mark between 0 and 5 - negative to quit");
            mark = In.getInt();
            if (0 <= mark && mark <= 5)
            {
                // only keep frequency data for valid marks
                values[mark]++;
                countStudents++;
            }
            else
            {
                if (mark > 5)
                {
                    System.out.println("Invalid mark: " + mark);
                }
            }
        } while (mark >= 0 && countStudents < maxClassSize);

        // use the frequency data in the array
        for (int index = 0; index < values.length; index++)
        {
            System.out.println("index: " + index + " value: " + values[index]);
            numMarks = numMarks + values[index];
            sumMarks = sumMarks + index * values[index];
        }
        System.out.println("Num Marks: " + numMarks + " Sum Marks: " + sumMarks);
    }
}
```