

Filename: wk6\_GradesHelpers

Objective: Demonstrate use of helper functions

Specifications:

Define, implement and test a class that will be used to hold grades on up to 4 tests and compute the average.

Private member variables should include:

- a static constant for the maximum size of the array,
- an array of integers to hold up to 4 test scores,
- the lowest score (determined at runtime),
- the average (a float), and
- the number of tests entered into the array.

Private member functions (helper functions) should include:

- void computeAverage(); // computes the average every time a new test is added
- void checkLowest(int); // called from addTest(int) function (public member function) - checks to see if test added has lowest score - updates lowestScore, as needed
- bool validScore(int); // before a test is added to the array, its value is checked to make sure the score is in the range 0 - 100, inclusive
- bool checkNumTests(); // used to make sure the array is not full before adding a score
- void defaultTests(); // initializes values in the array of tests to zero

Average is computed as follows:

- if there are fewer than 4 test scores, the average is computed by dividing the total score by 3 (one less than SIZE)
- if there are 4 test scores, the average is computed by subtracting the lowest score from the total, then dividing the total by 3 (one less than SIZE)

Your program should be written in such a way that this driver file fully tests your Grades class:

```
int main()
{
    Grades cs162;

    cs162.addTest(80);
    cs162.addTest(70);
    cs162.addTest(90);
    cs162.addTest(10);

    cout << cs162.getAverage() << endl;

    return 0;
}
```

NOTE: To fully test the class, you will need to comment out 1 - 3 of the instantiations of the addTest( ) function.