

CMSC 131 Spring 2005 Quiz 6 Solution

One possible solution to this problem is given below. Note that you are required to create a student copy (duplicate) and to add students appropriately when there are no students initially. Addition of a student when there are already some existing students requires finding the correct position for insertion and creation of a new array at the end.

```
public void add(Student student) {
    Student duplicate = new Student(student);
    Student[] newArray = null;
    if (array == null) {
        array = new Student[1];
        array[0] = duplicate;
    }
    else {
        newArray = new Student[array.length + 1];
        int startCopyingIndex = 0;
        if (student.getPriority() < array[0].getPriority()) {
            /* To the end of the list */
            newArray[newArray.length - 1] = duplicate;
        } else {
            /* To the beginning of the list */
            newArray[0] = duplicate;
            startCopyingIndex = 1;
        }

        /* Copying the elements from the original array */
        for (int i=0, k=startCopyingIndex; i<array.length; i++) {
            newArray[k++] = array[i];
        }

        array = newArray;
    }
}
```