Will Loughlin
Neil Borde
Forrest Haugaard

A Short Report

Our program is a digital gradebook, similar to canvas or moodle. It uses a vector of Class objects that store information about students and grades. Inside each Class object is a hash table of students with each index of the hash table containing a linked list. Each Student object has an array of GradeType objects that contains a linked list of grade structs. Each grade struct represents one grade in the gradebook and has a name, a designated points possible and points earned.

Our program is designed with efficiency and ease of use in mind. Within the main function a teacher can have as many different classes open as they need. This allows you to manage all of your classes and enter grades quickly and efficiently within one program. The saving and loading functionality of our program also allows you to close and reopen the classes with all of the same data. You can see the basic outline of how our data is stored within each saved file. These files contain each students name with their grades in a list format below them, with each index 0-4 representing homeworks, quizzes, tests, projects, and attendance in that order.

When you enter a grade into our program you must choose one of the 5 types of assignments. This is simply for organizational purposes and does not affect the final grade of the student. If the teacher wishes, they can put every single assignment under the same index.

We used the hash table for easy organization of students and to accelerate the searching process when you have many students in a class. There are several different places where we use linked lists in our program because they have no set length and are very versatile.

In our zipped file we have included several example class files to load into the program to demonstrate its functionality. We have also included text files of various different outputs of our code when used in different ways.