

CG2.2 Software Development

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Introduction

During the AS Computing course we undertook many different programming activities, some of which enabled the development of a solution to this problem.

In particular, we used an Excel file that contained data about students and staff at college, converting to a variable length record file (csv) for input into a Visual Basic 2010 program. We also considered how to save this file as a fixed length direct access file. This proved useful, since some of the data from these exercises were used as sample data in this project.

We also reviewed and completed a number of different solutions based around accessing data directly from files, editing the data, validating the record before rewriting the data to the file, which allowed us to understand the techniques and code required. Also, the code and techniques developed could be easily adapted to aid the solution of this coursework.

In addition, we studied the use of lists, combo boxes and data grids for selected and accessing data, which impacted on the change between the design and final product – see later.

Some code was copied directly from class exercises, for example code for “encrypting and decrypting string in Visual Basic 2010” from msdn (i.e. Microsoft) for ensuring passwords were protected from being.

Some functions we developed in class also proved useful such as IsAlpha() which determines if a string only contains letters, and IsName() which extends this to spaces and a hyphen, used for validating data entry.

Also, during the development it was interesting to review the solution developed by other students, and this made me review the solution. What follows is a brief outline of the changes made with some justification.

Changes to Data Structures

Changes to the student file structure

I have removed form and year sections to their file structure for students as I felt they were not necessary and I was not going to do anything that that they might be used for such as allowing staff to see specifically the students in their form.

Changes to the staff file structure

None as they met all my needs

Changes to the rewards file structure

None as they met all my needs

Changes to the pointsprocedure file structure

I removed the points of the student and teacher from the structure as they were not necessary and were quite irrelevant to what the points procedure is to achieve which who, how much and why.

Changes to the rewardsprocedure file structure

I removed the points of the student from the structure as it was not necessary and was quite irrelevant to what the rewards procedure is to achieve which is who and what.

General Changes to forms

I removed all the pictures from the forms as they were not necessary and they were very early on adding up to more than the rest of the program put together.

Instead of doing the adding and editing of students, staff and rewards on their respective admin forms I created whole new forms that would pop up just for that job as it make the code more efficient and elegant.

Specific Changes to Forms

Admin-rewards

I removed the search for it as it was not required as the list of rewards was never going to get very big.