1.3 System Description

1.3.1 System Design

The project we will create is an academic tracker website, similar to existing websites such as Classroom Monitor and Insight but tailored to meet the needs of the stakeholder, Elemore Hall. It will be simple and easy-to-use.

Below is a summary of the key features that the end system will have:

* A **steps tracker** that allows the student’s current and previous progression of the ‘Elemore steps’ to be tracked
  + Users (teaching staff) will be able to view and add to the mark book of students in their classes
  + Users will be able to add evidence to new entries in a student’s mark book
  + Each student will have a steps tracker for each subject they are taking
* A **progress overview**, either a line graph or bar chart that visually represents progress of either an individual or a group within a selected timeframe in a specific subject
  + Users will be able to select the timeframe in which the progress overview summarises
  + Users will be able to select whether they would like to see the progress overview of an individual or of a class
* **Pupil progress report**, this report will highlight the level that each student is working at, at key points of the academic year, allowing teachers to track pupil growth term by term
  + Users will be able to view the step that each student is on for each subject at the start of the year and at the end of every academic term (Autumn, Spring, Summer)
* **Literacy/Numeracy Tracker**, will contain data such as reading age, spelling age etc.
  + Users will be able to input, change and view the literacy and numeracy level of students
* **Target overview**, the target overview will allow targets to be set for students to meet at the end of their academic year
  + The overview will contain data about what level a student is working at, at the start of the year and at the end of each term
  + The overview will state what each student’s target for the end of the year is and whether they have met it
* We plan to build a database to hold student’s data and other relevant data

**System Design Details**

* Front end
  + We plan to implement the front end of the website using JavaScript, CSS and HTML. As the system is an academic tracker, we want the website to react quickly to user input/interaction - JavaScript will be good for this
* Server side (Back end)
  + We plan to implement the back end of the website using JavaScript
* Database
  + We will implement a database to store data, which will mostly be data regarding the students at Elemore School

1.3.2 Existing Solutions, 1.3.3 Advantages and Disadvantages of Solutions

**Classroom Monitor**

Our client currently uses Classroom Monitor (CM) to keep track of student progress, for this reason our planned system will have similarities to CM because the client would like to keep a lot of the functionality of classroom monitor.

CM has a markbook in which the current STEPs of each student can be viewed and updated, we plan to implement a similar markbook as the client has stated that both teachers and students find the current format of the markbooks easy to read and understand. The client described CM as being quick and easy to use when inputting and gathering evidence and we should aim to replicate this in our system.

Similar features we will implement in our system:

CM allows you to add evidence for each STEP, e.g., if a student is marked as being secure (S) for being able to use kitchen equipment safely in food tech evidence can be added to support this. CM also has a lot of report features, allowing users to view whole school, year group and class overviews. You can also compare data sets. The client was quite happy using Classroom Monitor but there were a few features the client felt were missing such as a separate literacy/numeracy tracker and being able to view the progress overview as a bar chart/ line graph as well as being able to view two data sets in this way in order to compare them.

**Educater**

The Educater assessment tracker has features that are similar to what we plan to implement in our own system. In particular, it has a steps tracker with a similar visual format to the Elemore Steps that states whether a student is working below, on, or above a specific level. Spreadsheets and files can be uploaded to their system which is useful for uploading test scores. This is a feature that we plan to implement in our system as the client has stated that the ability to add evidence to a student’s report is an important feature.

One positive feature of Educater is its data filtering, it allows users to filter data by features like gender, school year, ethnicity, FSM, SEN etc. and generate reports from specific groups of students, there are also different formats of reports and different types such as cumulative progress, progress snapshots, pupil targets out of many other reports.

Educater has a lot of features that are useful to have, e.g., attendance reports, but are out of our project scope and our client has only asked for the features detailed in 1.3. We should aim to focus on implementing these features well and robustly and prevent scope creep. Our client has stated they liked Classroom Monitor because of how simple and easy to use it was and so while Educater has some good features we should use as inspiration; we do not want to implement all of it’s features and functionality to prevent our system being too complex.

One of the features we would like to implement from Educater is that the system can pull data from SIMS which is a feature our client would like implemented.

1.3.4 Integration into Existing Systems

We will need to find a way to pull the data the client currently has stored on Classroom Monitor into our database/system. It is likely we will have to do this using an API for data retrieval.

The client also uses SIMS alongside CM currently so we will also need to setup a way to pull data from SIMS into our database/system, SIMS appear to have APIs to achieve this so we plan to retrieve student data using API keys.