OCR A-Level
Computer Science

Unit 3

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3.1. Analysis of the problem

3.1.1 Problem identification

Clevedon School would like a way to enable staff and students to document and record evidence of where student's have acquired specific skills, used their skills, and their development of their skill sets over time. The information recorded should be both academic and non-academic skills ("employability skills") of student's as they progress through their education from Year 7 (aged 11) to Year 11 and beyond (aged 16).

(a) Describe and justify the features that make the problem solvable by computational methods.

One of the main aims of the project is for staff to be able to identify students based on their skill set. As an example, if a teacher wanted to find a student in Year 8 to give a presentation on e-safety to parents, they would require a means to search for a student who had particularly good communication skills, and an understanding of online safety.

For a single person to collect and analyse physical records of this data to find a student up to the task would be extremely time consuming. If a computer system was in place to capture and record every students skills, and evidence of their acquisition of skills from the start of their education, then this would be both an invaluable resource for staff in terms of the time which would be saved in tailoring the teaching of "employability skills" on a 1-to-1 basis, and also an invaluable resource for the students because they would have a resource at the end of their education which they could use to view a record of the opportunities they had in secondary education to develop "employability skills" which would be a massively impactful resource when it comes to writing a personal statement.

Each student could store their record of skill acquisition information themselves and this would be as efficient as a digital system, however to keep this data up-to-date, and to allow the data to be indexable by all staff members, it would be an extreme challenge without a computer system. A digital system would be able to index and return detailed reports on student's skills which a non-electronic system would not be able to compete with.

Summarising on my previously mentioned points, I have broken down the main features below into those required by the main stakeholders which makes this particular problem suitable and most efficient for solving via computational methods. On the following pages, I have also justified why this is the case.

Students	**Staff**	**Senior Leadership**
Recording evidence of skill acquisition.	Searching for a student based on their skills.	Tracking competencies and skills of support staff.
Recording evidence of skill development.	Searching for a student based on their inclusive groups.	Monitoring features overseeing the whole process.
Holding student engagement and ensure committed use.	Creation of overarching skill sets that have relational skills linking two overarching developments together.	Report generation stating teaching assignments.
Exporting a useful list of skills and opportunities at the end of education.	Create extra-curricular resources to aid the teaching of "employability skills" on a 1-to-1 basis.	The ability to browse accreditations in a range of specified and unspecified skills.