

# Project Proposal (2312801)

*by* Drew McClennon

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# Title Page

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Drew McClennon 2312801

Changemakers: Creativity and Value Creation  
(ACCA5033) Computing (Cyber Security and  
Networking) BS

# Q1 : Innovation

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Innovation plays a critical role in shaping modern society by enabling technological advancement, economic growth, and improved quality of life. It refers to the process of developing new ideas, products, services, or methods that create value or solve problems. Creativity is the foundation of innovation, as it allows individuals and organisations to think differently and generate original ideas that can be developed into practical solutions.

One of the key areas discussed in Topic 1 is the relationship between creativity and innovation. Creativity involves generating novel ideas, while innovation involves implementing those ideas in ways that benefit society or industry. For example, the development of the internet demonstrates how creative thinking and innovation can transform global communication, business, and education. Today, digital technologies allow people to access information instantly, collaborate across continents, and develop entirely new industries.

Innovation also contributes significantly to economic development. Businesses that invest in innovative technologies and processes are often more competitive and better able to respond to changing market demands. Companies such as major technology firms have achieved success by continuously improving products and introducing new technologies that meet user needs.

Another important concept is disruptive innovation, which occurs when new technologies or ideas fundamentally change existing industries. Disruptive innovations often begin as simple or lower cost alternatives but eventually replace established solutions. Examples include cloud computing replacing traditional local servers and streaming services replacing physical media distribution.

Innovation is also essential for solving global challenges. Technological developments in renewable energy, artificial intelligence, and healthcare are helping societies address issues such as climate change, disease prevention and resource management. By encouraging creative thinking and innovation, societies can develop sustainable solutions that improve living standards and support long term progress.

In addition to societal impact, innovation is important for personal development. Individuals who develop creative and innovative thinking are better prepared to solve problems, adapt to change, and contribute to technological advancement. Educational programmes increasingly encourage innovation by promoting experimentation, critical thinking, and project based learning.

Overall, innovation shapes the world by transforming ideas into practical solutions that improve industries, economies, and everyday life. By fostering creativity and encouraging experimentation, individuals and organisations can develop technologies and systems that address both current needs and future challenges.

## Q2 : Ideation

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### 1. Car Show Event Tracker -

This would be a simple web application where I would be able to store information about upcoming car shows that I plan on attending and displaying at. The application could include event details such as the location, date, description, and which of my friends are also attending. #

### 2. Tools & Parts Inventory System -

This would be a similar web application with a database that would track what parts and tools that I own. The system would allow me to add or remove any new parts I buy/use, and tools which I own and require.

### 3. Vehicle Maintenance Tracker -

This would be another web application focusing on a database. It would allow me to record and track any maintenance such as repairs, oil changes, parts replaced, and service intervals. It would also allow me to keep a central record of anything done on the car rather than relying in paper documents.

After reviewing the above ideas, I have chosen to move forward with the latter, Vehicle Maintenance Tracker due to its practical use case, and the combined usage of database management and web development.

## Q3 : Research

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### HTML and CSS Web Development Tutorials

Online tutorials on HTML and CSS will aid me in designing the user interface of the web application. These resources outline the creation of forms, tables and layouts that will allow the user (me) to input and view the maintenance records. Learning these languages would be essential for this project.

### Python Flask Web Development Courses

A course on Python Flask would provide me with the knowledge on building web applications with Python. Flask allows developers to create web servers, process user input, and connect web pages to a database. This will be useful for handling form submissions and displaying stored maintenance data.

### SQL and Database Design Tutorials

Learning resources on SQL and relational database design will help in creating the database structure for storing vehicle maintenance records. This includes understanding tables, primary keys, relationships, and queries used to retrieve stored information.

### SQLite Documentation

Official database documentation will be used to understand how to create and manage databases, insert records, and retrieve data efficiently.

### Software Development and Testing Resources

Guides on software testing and debugging will help to ensure that the system functions correctly. These resources will support identifying errors, improving usability, and ensuring the application works reliably.

# Q1 : Project Scope

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## Proposed Solution

The aim of this project is to develop a vehicle maintenance tracker which allows the user to digitally record and manage maintenance activities for their vehicles. Many vehicle owners currently rely on paper records or memory to track their maintenance history, which can lead to lost information and difficulty remembering when services were completed. The proposed solution is a web based application connected to a database where users can store and manage records.

The system will allow users to add maintenance entries containing information such as the vehicle name service data, mileage, description of work completed, parts used, and cost. Users will also be able to view previously recorded maintenance entries in a structured list. Additional features may be the ability to edit or delete records when updates are required. Additionally, implementing MOT history by integrating the MOT API could give the application more value.

By storing this information digitally, the system will provide an organised and accessible way to track vehicle maintenance history. This could be useful for vehicle owners who regularly maintain their cars and want to keep a reliable service record.

## Technologies and Resources

Several technologies and resources will be required to develop this project.

HTML and CSS will be used to design the front end interface of the application. These languages allow the creation of web pages that include forms for entering maintenance information and tables for displaying stored records.

A back end programming language such as Python using the Flask framework will be used to process user input and connect the web interface to the database. Flask is a lightweight web development framework that simplifies the process of building web applications.

A database management system such as SQLite will be used to store vehicle and maintenance data. Databases allow structured storage of information and enable efficient retrieval of records using SQL queries.

Additional resources will include online tutorials, documentation, and programming guides to support the development process. Version control tools such as GitHub may also be used to manage project files and track development process.

## Project Timeline and Task Schedule

A clear timeline will be created to ensure the project is completed within the available timeframe. The project will be divided into several stages.

The first stage will involve research and planning, where information about database design, web development technologies, and project requirements will be gathered.

The second stage will focus on system design, including creating the database structure and planning the layout of the web interface.

The third stage will involve development, where the database will be implemented and the web application will be programmed. This stage includes creating forms for data entry and displaying maintenance records.

The final stage will involve documentation and final improvements, there the project report will be completed and screenshots of the working system will be prepared for submission.

Organising the project into stages helps to ensure that the work is completed efficiently and will reduce the risk of missing the deadlines set.

## Q2 : Gantt Chart

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| Task                                    | Duration |        |        |        |        |        |        |
|-----------------------------------------|----------|--------|--------|--------|--------|--------|--------|
|                                         | Week 1   | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 |
| Project research and planning           |          |        |        |        |        |        |        |
| System design (database and interface)  |          |        |        |        |        |        |        |
| Development of database structure       |          |        |        |        |        |        |        |
| Development of web interface            |          |        |        |        |        |        |        |
| Integration of database and application |          |        |        |        |        |        |        |
| Testing and Debugging                   |          |        |        |        |        |        |        |
| Documentation                           |          |        |        |        |        |        |        |

Above is the Gantt chart I made within Microsoft Excell due to my prior familiarity with the software. It presents the project timeline in an easy to understand format.

## Q3 : Risks & Challenges

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Several potential risks and challenges may affect the development of my project.

One possible risk is technical difficulty when connecting the web application to the database. If the connection is not configured correctly, the application may fail to store or retrieve maintenance records. This risk can be reduced by following official documentation and testing the database connection early in the development process.

Another challenge is limited programming experience with web frameworks such as Flask. Learning new technologies may take additional time and could delay development. To reduce this risk, online tutorials and documentation will be used to guide the development process.

There is also a risk of data input errors, where users may enter incorrect or incomplete maintenance information. This issue can be reduced by implementing basic form validation to ensure required fields are completed correctly before data is stored in the database.

Finally, time management can be a potential challenge. If tasks are not completed according to the schedule, the project may fall behind. Creating and following a structured project timeline, such as the Gantt chart, will help manage time more effectively and ensure that the project is completed before the deadline.

# Q1 : Development Method

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To successfully plan and complete my project, an Agile development approach will be used. Agile is a flexible software development methodology that focuses on iterative development, continuous testing, and gradual improvement of a system. Instead of building the entire application at once, the project is divided into smaller stages known as iterations where small parts of the system are developed, tested, and improved over time.

Using Agile is suitable for my project because it allows the system to be developed step by step. For example, the first stage of development will focus on creating the database structure and basic web interface. Once this is working correctly, additional features such as editing records or displaying previous MOT history records can be added.

Another advantage of Agile is that it allows for problems to be identified early in the projects development. Each stage of the project can be tested and before moving onto the next step which reduces the likelihood of major issues appearing later in the project. Agile also encourages regular evaluation and improvements, ensuring that the project continues to meet its original aim.

For my project, the development stages will include planning, design, development, testing, and evaluation. During the planning stage, the project goals and requirements will be defined. The design stage will involve creating the system structure, including the database layout and interface design. The development stage will focus on programming the application using the selected technologies. Testing will ensure that the system functions correctly, while evaluation will review whether the project successfully meets my original objectives.

Overall, using an Agile development method will allow the vehicle maintenance tracker to be developed gradually, tested regularly, and improved throughout the project lifecycle. This approach increases the chances of producing a reliable and functional application.

## Q2 : Design Work

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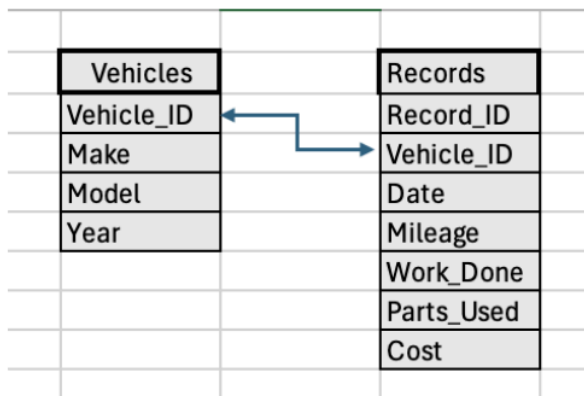
### Requirements Specification

#### Functional Requirements:

- Add new vehicle maintenance records
- Store maintenance data in the database
- View previously recorded maintenance history
- Edit or delete existing maintenance records
- Display maintenance records in an organised format

#### Non Functional Requirements:

- Be simple and easy to use
- Store data reliably within the database
- Allow quick access to maintenance records
- Provide clear and readable information on the web interface



|            | Description                        |
|------------|------------------------------------|
| Vehicle_ID | Unique identifier for each vehicle |
| Make       | Vehicle manufacturer               |
| Model      | Vehicle model                      |
| Year       | Vehicle production year            |

|            | Description                        |
|------------|------------------------------------|
| Record_ID  | Unique identifier for each entry   |
| Vehicle_ID | Unique identifier for each vehicle |
| Date       | Entry date                         |
| Mileage    | Vehicle mileage at entry           |
| Work_Done  | Description of maintenance done    |
| Parts_Used | Parts replaced or installed        |
| Cost       | Cost of the maintenance done       |

## Q3 : Initial Practical Application

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The screenshot shows a mobile application interface titled "Vehicle Maintenance Log". It features a form for adding new records and a table for viewing history. The form includes fields for Vehicle, Date (dd/mm/yyyy), Mileage, Work done, and Cost (£), followed by a Save button. The History table is currently empty.

| Vehicle | Date | Mileage | Work | Cost |
|---------|------|---------|------|------|
|---------|------|---------|------|------|

This is the first iteration of the maintenance tracker app working.

The screenshot shows the same application interface, but the History table now contains one record. The form fields are identical to the previous screenshot.

| Vehicle                   | Date       | Mileage | Work            | Cost  |
|---------------------------|------------|---------|-----------------|-------|
| Eunos Roadster - N435 JHK | 2026-02-10 | 123456  | Alternator Belt | £20.0 |

Above you can see the app has recorded an entry and stored it to its database.

### Vehicle Maintenance Log

#### Add Record

Save

#### History

| Vehicle                   | Date       | Mileage | Work            | Cost  |
|---------------------------|------------|---------|-----------------|-------|
| Eunos Roadster - N435 JHK | 2026-02-10 | 123456  | Alternator Belt | £20.0 |

Here you can see the fields being filled in.

### Vehicle Maintenance Log

#### Add Record

Save

#### History

| Vehicle                   | Date       | Mileage | Work            | Cost   |
|---------------------------|------------|---------|-----------------|--------|
| Eunos Roadster - N435 JHK | 2026-02-16 | 123456  | Welding         | £450.0 |
| Eunos Roadster - N435 JHK | 2026-02-10 | 123456  | Alternator Belt | £20.0  |

And the data being stored in the database after the form has been saved.

# Project Proposal (2312801)

## GRADEMARK REPORT

FINAL GRADE

GENERAL COMMENTS

40/100

**Total:** Lat  
e:  
40  
- 53

### 1. Engagement with Literature Skills

- No use of citations included. 0
- No IEEE reference list.

### 2. Knowledge and Understanding Skills 5, 5, 5

**T1Q1 Innovation:** + Good knowledge and understanding of some unit 1 topic 1 concepts. 17

**T1Q2 Ideation:** + Several project ideas documented. And 1

## project area selected.

Note: Ensure additional skills are developed and progress is made from yr1 Web and current yr2 web modules. This will need to be stated in Task 3 of Assignment 2. I'm sure it will, just a mention now to ensure you plan for this.

**T1Q2 T-A&Os:** + A project title, single Aim, several Objectives and brief description clearly documented.

**T1Q3 Research:** + Some general **course and source areas** documented. – The relevance is briefly described. – However specific **courses and sources with URLs could be documented.**

**3. Cognitive and Intellectual Skills** 5, 5, 5, 5

### T2Q1:

10

+ Project **solution and required technologies/resources** documented. Good.

- **Project timeline and task schedule not** documented.

**T2Q2:** + **Gantt chart** created and documented. –dates should be set for project stages and tasks.

**T2Q3:** + **Risks/challenges** and contingencies documented. – could be documented in a table format to enhance readability.

**4. Practical Application Skills** 5, 10, 5

### T3Q1: + A suitable

16

**Development method** to plan and complete the project is clearly described.

**T3Q2:** + Evidence of x2 **design work** documented. –

Requirements specification could include a unique number and priority status for each requirement. – Data schema could be titled/briefly described.

**T3Q3:** + Use of several screenshots with brief description to show some **initial practical implementation** is documented. Good.

**5.**  
**Transferable Skills for Life and Professional Practice** 10, 5, 5

+ Format, structure and presentation. Good. 10

Appendix:

- Evidence of engagement with 1 relevant course not documented.

- Evidence of use of a tool for Project Planning / Management tool not documented.

On-time/Late: Late.

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