

Changemakers: Creativity and Value Creation

08 July 2026 16:52

Module code: ACCA5033

Student Name: Emyr Jones

Student ID: 1701036

Introduction

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This assignment outlines the stages of project management involved in planning a software development project. It identifies and evaluates a range of potential software project ideas before selecting the most suitable option for development. The report then defines the project's scope, identifies the resources and technologies required, discusses the proposed development methodology, considers the potential risks and appropriate mitigation strategies, and presents a project schedule for the successful completion of the project.

Question 1

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In the last 200 years innovation has allowed humanity to increase lifespan and wealth, with notable inventions being made as early as in 1850 with the invention of anaesthesia which has saved 50 million lives to the invention of antibiotics in 1928 saving 200 million lives, to modern day with big data being created in 2004 being used to predict natural disasters being able to save 50 thousand lives a year and 3D printing to allow medical devices being readily available on demand saving 100 thousand lives a year. [1]

Humans have an ability to detect patterns in unrelated events to innovate and create new technologies for example the microwave oven was invented by Percy Spencer when he found his chocolate bar melted when near one of his radar machines. [2]

Currently the world is on the brink of a technological revolution, being coined as the fourth industrial revolution, a summary of the industrial revolutions up until now are, the first revolution used water and steam power to innovate and to power mechanized production, third revolution used electric to create mass production, the third used information technology to automate production. The fourth revolution as it is being named is the digital revolution this is characterized by fusion of technologies between physical, digital and biological spheres.[3]

In the modern world technology is the way of innovation with technology being increasingly more complicated and connected to all parts of the world. Many everyday utilities have technology imbedded like cars, phones and smart watches all relying on more computer software than they have ever before, in some cases making them harder to understand and to control. [4]

The advancement of technology has been able to reach around 50 per cent of the developing world's population in two decades. Through enhancing financial inclusion and access to trade technology can be a great equalizer for all countries. The labour force has changed through the technological revolution creating new forms and patterns of work making others obsolete, leading to wider changes.

Question 2

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Project ideas.

1. An automated data pipeline providing weekly updates on business performance

Pros	Cons
Saves time by automating data collection and reporting.	Can be difficult to set up and connect to data sources.
Reduces human errors in data processing.	Needs regular maintenance if systems or data formats change
Provides regular and consistent business insights.	Requires technical knowledge of databases and automation tools.
Helps managers make faster decisions.	Errors in the pipeline may affect all reports.
Can improve decision-making with up-to-date information.	May need strong security measures to protect business data.

2. Create visualisation of where the most car accidents happen in Wales.

Pros	Cons
Makes accident data easy to understand.	Finding accurate and up-to-date accident data may be difficult.
Helps identify accident hotspots.	Data may need a lot of cleaning before it can be used.
Can support road safety planning and decision-making.	Requires knowledge of visualisation tools or software.
Develops skills in data analysis and data visualisation.	Maps and charts can be misleading if the data is presented incorrectly.
Produces clear and engaging charts or maps.	Limited by the quality and availability of the data.

3. Analysis how living in different areas can affect insurance premiums using visualisation.

Pros	Cons
Shows how location can affect insurance costs.	Insurance data may be difficult to find.
Uses graphs and maps to make data easy to understand.	Other factors (age, driving history, crime rates) also affect premiums, making analysis more complex.
Develops data analysis and visualisation skills.	Data may need a lot of cleaning before it can be used.
Can identify trends and patterns between different areas.	Requires knowledge of data visualisation tools.
Relevant to real-world businesses and consumers.	Results may not be completely accurate if the data is incomplete.

4. Analysis how different cultures and lifestyles can affect life expectancy.

Pros	Cons
Explores an important real-world topic.	Many factors affect life expectancy, making analysis complex.
Develops skills in data analysis and visualisation.	Reliable data may be difficult to find for some countries.
Can identify trends between lifestyle and life expectancy.	Data may not always be up to date.
Uses data from reliable public sources.	Requires careful interpretation to avoid misleading conclusions.
Helps improve understanding of global health differences.	Cultural differences can be difficult to measure accurately.

5. Research the benefits of local storage, cloud storage and a hybrid storage system to house data.

Pros	Cons
Easy to research using reliable sources.	Mostly theory with little practical work.
Helps understand different storage methods.	May not include hands-on experience.
Can compare the advantages and disadvantages of each option.	Research can become outdated as technology changes.
Useful for learning about modern business technology.	Requires comparing several sources to ensure accurate information.
Requires less technical development than building a system.	May be less engaging than creating a working project.

6. An AI assisted data analyst website.

Pros	Cons
Can analyse data quickly and provide useful insights.	Can be difficult and time-consuming to build.
Helps users understand data more easily.	May require access to AI tools or APIs.
Develops skills in AI, web development, and data analysis.	AI responses are not always accurate.
Can automate repetitive analysis tasks.	Needs careful testing to ensure reliable results.
Has real-world business applications.	May involve extra costs if using paid AI services.

7. Data analyst project to improve the scouting element of the game “football manager”

Pros	Cons
Develops skills in data analysis and statistics.	Finding detailed player data can be difficult.
Can identify talented players using data.	Requires good knowledge of football statistics.

Uses real-world football data and performance metrics.	Data may be incomplete or outdated.
Combines sports and technology in a practical project.	Building accurate scouting models can be challenging.
Will create a better product for the game.	Results may not always reflect real-life player performance.

The project chosen to move Forward and develop further is - An AI assisted data analyst website.

Project brief

This project will develop a web-based AI-assisted data analytics platform that allows users to upload CSV datasets and receive automated exploratory data analysis. The system will perform statistical analysis using Python and Pandas, generate visualisations such as correlation heatmaps and distribution charts, and use a Large Language Model to convert analytical findings into natural-language insights. The effectiveness of the system will be evaluated by comparing generated insights against manual analysis and through user testing focused on accuracy, usability, and usefulness.

Project objectives-

Develop a working website that allows users to upload CSV or Excel files and complete the core features by the end of the project.

Implement an AI assistant that can answer at least 10 different types of data analysis questions (e.g., trends, averages, highest/lowest values) before the final submission.

Create automatic data visualisations (such as bar charts, line graphs, and pie charts) from uploaded datasets with at least 90% accuracy by the testing phase.

Test the website with at least 10 users and collect feedback to improve usability before the final version is submitted.

Reduce the time needed to analyse a dataset by allowing users to generate insights and visualisations in under one minute after uploading their data.

Question 3

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Course/Source	Why it is useful
W3Schools	Learn HTML, CSS, JavaScript, Python, and SQL for building the website.
MDN Web Docs	Official documentation for web development and JavaScript.
OpenAI API Documentation	Learn how to integrate AI features into the website.
AI for data-driven insights(https://www.linkedin.com/learning/using-ai-for-data-driven-insights/overview-of-ai-for-data-driven-insights-25184049?u=77966930)[7]	Teaches how to clean and organize data, use decision trees for strategic choices, and create AI-powered reports.
YouTube (free tutorials)	Step-by-step guides on web development, data visualization, and AI integration.

Question 1

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Project scope -

The solution proposed is developing a web-based AI assisted data analytics platform that allows users to access data analytics without the knowledge or skills of advanced programing or statistical knowledge. Users will be able to upload a CSV file through a web interface which will then analyze the data using Python data science libraries.

The platform will generate statistics and produce a range of visualizations. An integrated large language model will then interpret the analytical results and then summaries the results.

Technologies and Resources

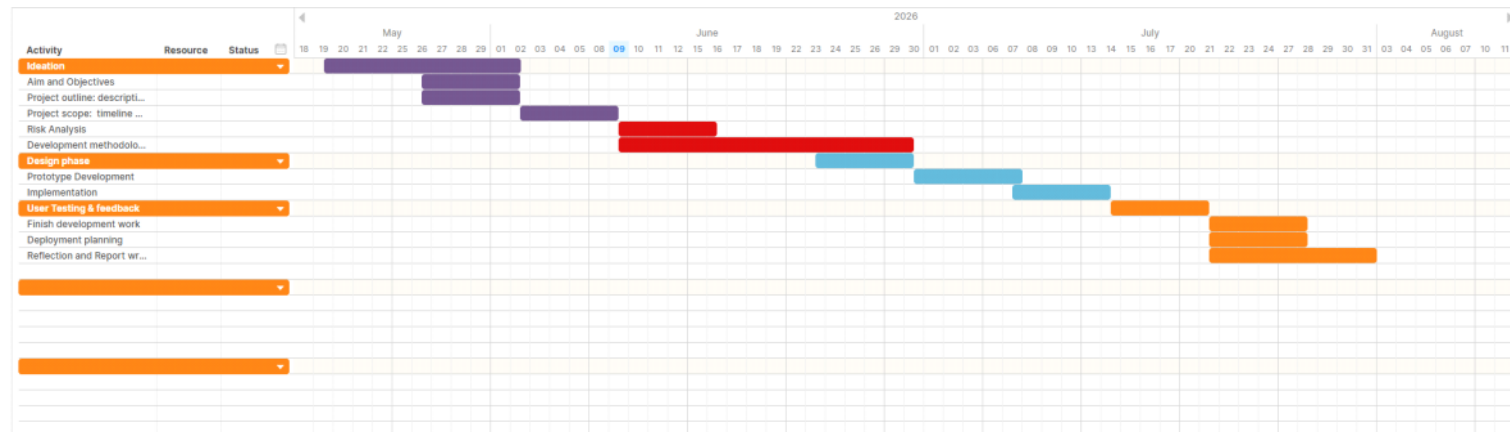
The following technologies and resources will be used during the development of the project.

Category	Technology/Resource	Purpose
Programming Language	Python	Data processing, statistical analysis, backend logic
Data Analysis	Pandas	Data cleaning, manipulation and exploratory analysis
Numerical Computing	NumPy	Mathematical and statistical operations
Data Visualisation	Matplotlib, Seaborn	Generate graphs, charts and correlation heatmaps
AI Integration	OpenAI API (Large Language Model)	Generate natural-language explanations from analytical results
Web Framework	Flask	Backend web application and API development
Front-end	HTML, CSS, JavaScript (Bootstrap optional)	User interface and file upload functionality
Data Storage	Local file storage	Store uploaded datasets during analysis
Development Environment	Visual Studio Code	Software development and debugging
Version Control	Git and GitHub	Source code management and project version control
Testing	Manual testing and user evaluation	Verify functionality, usability and system performance

Project Stage & key tasks	Start Date & End Date
Ideation	19/05/2026 – 02/06/2026
Aim and Objectives	26/05/2026 – 02/06/2026
Project outline: description & Key sources	26/05/2026 – 02/06/2026
Project scope: timeline & resources	02/06/2026 – 09/06/2026
Project Planning: Task schedule & Gantt chart	09/06/2026 – 16/06/2026
Risk Analysis	09/06/2026 – 16/06/2026
Development methodology selection	09/06/2026 – 30/06/2026
Design phase	23/06/2026 – 30/06/2026
Prototype Development	30/06/2026 – 07/07/2026
Implementation	07/07/2026 – 14/07/2026
User Testing & feedback	14/07/2026 – 21/07/2026
Finish development work	21/07/2026 – 28/07/2026
Deployment planning	21/07/2026 – 28/07/2026
Reflection and Report writing	21/07/2026 – 31/07/2026

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As this project isn't a large project, the advantages outweigh the limitations and makes using the Gantt chart to outline the project deadlines and to track progress a valuable recourse for this project.



Question 3

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Risk no.	Risks	Impact	Contingencies
1.	Missing Data / lost device	High	Regular back up all project files
2.	Skills set	High	Allocate time for self-learning for relevant skills
3.	AI knowledge	Medium	Research LLM and AI integration
4.	Scope	Medium	Define a clear project objective and requirements from the start.
5.	AI integrity / AI creating its own information giving inaccurate data to the user	High	Validate AI-generated and test multiple data sets before deploying project.
6.	Time management	Low	Have a realistic project schedule with weekly targets
7.	Visualization tool knowledge	Low	Learn the required visualisation tools
8.	The product may not be adopted by end users following production.	Medium	Conduct user testing throughout development.

Question 1

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Development method-

The development methodology chosen for this project will be the agile methodology, as agile project management is highly adaptable using a nonlinear approach. It centers on dividing large projects into more manageable tasks. The methodology allows the team to re-evaluate their work and adjust in short increments. [5]

Agile methodology has five primary stages; this runs from ideation, development, testing, development and operations.[6]

Here is an overview of the stages-

1. Ideation- The product owner pieces the project vision together by; defining the purpose and goal, determining and documenting the business requirements and prioritizing tasks and recourses. [6]
2. Development- The development stage includes production tasks in the software development lifecycle.[6]
3. Testing – Testing is crucial for the agile methodology and is performed in iterations to help identify issues as early as possible.[6]
4. Deployment – once development and testing are complete the software is ready for deployment and will go live to the customers.[6]
5. Operations – Ongoing maintenance and operations will continue after the product is deployed to the customers.[6]

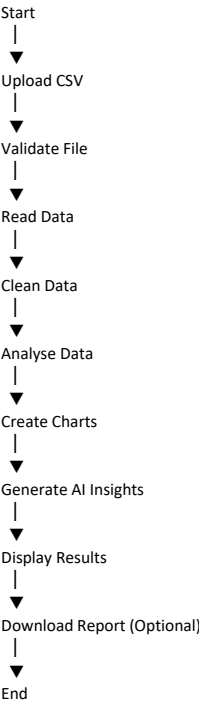
Question 2

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Below are a list of requirements needed for the project to reach its intended goal.

Requirement ID	Requirement	Priority	Requirement description
PR-001	User input	High	The project would require a way for the user to input their CSV file and also prompt the system to produce a summary or a visualisation e.g a graph.
PR-002	AI generated outputs	High	The project would require AI generated output to give the user a summary of what they have inputted in and to generate visualisations of graphs and charts.
PR-003	User interface	Low	The User interface will need to be simplistic and user friendly.
PR-004	Accuracy	High	The AI output will need to be accurate, to test this during production the output will need to be tested against human data analytics of the same inputs
PR-005	Privacy and ethical considerations.	High	The system should automatically delete any files or data inputted after the user has finishes using to ensure privacy and avoid using the data outside of the application.
PR-006	Knowledge base structure	Medium	The AI should have a knowledge base structure of data analytics to be able to support the user.
PR-007	Testing & Validation	Medium	To test that the system is working correctly this can be tested against the accuracy of regular human data analytics, the speed of how long a human vs AI and cost.
PR-008	Chatbot	Low	A want for this project is to be able to have a chat bot to be able to discuss the data being inputted rather than just one output being generated by the AI system.

Below is the flow chart that the program will follow once created, this goes from uploading the CSV file from the user, initial validating and cleaning, the program will analyse the data and produce charts and insights based on the data and allow the user to download the information if needed.

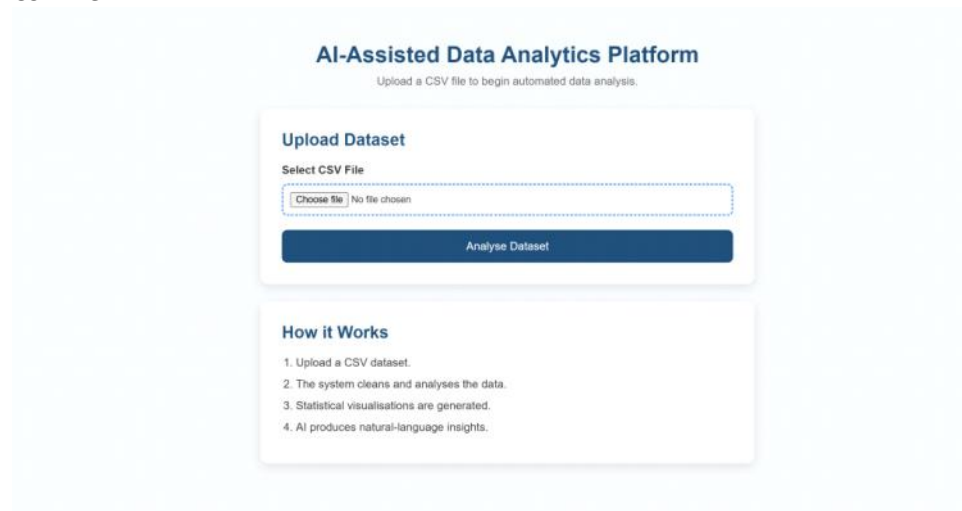


Question 3

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For the initial implementation for this project the initial web page needs to be created first, using HTML and CSS to create the page where the user can upload the CSV file for the program to perform the data analysis. The image shown below is the page where the user can upload the CSV file, the page has simple instructions on how to upload the file and explains the program simplistically.

The next step for implementation will be to use Python and Pandas to perform data analysis on the CSV file.



The screenshot displays a web interface for the "AI-Assisted Data Analytics Platform". At the top, the title "AI-Assisted Data Analytics Platform" is centered, followed by the instruction "Upload a CSV file to begin automated data analysis." Below this, there is a section titled "Upload Dataset". Under the heading "Select CSV File", there is a file selection area with a "Choose file" button and the text "No file chosen". A dark blue button labeled "Analyse Dataset" is positioned below the file selection area. Further down, a section titled "How it Works" contains a numbered list of four steps: 1. Upload a CSV dataset, 2. The system cleans and analyses the data, 3. Statistical visualisations are generated, and 4. AI produces natural-language insights.

Reference List

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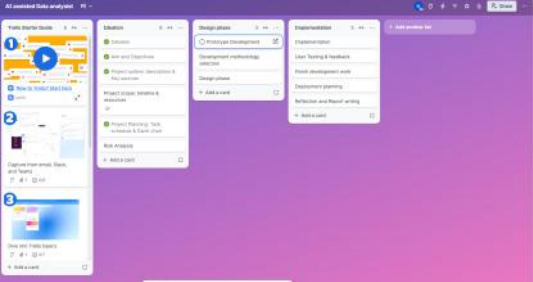
- [1] Aperion Care, "How Medical Inventions Increased Life Expectancy," n.d. [Online]. Available: <https://aperioncare.com/blog/inventions-life-expectancy/>. [Accessed: 8-Jul-2026].
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- [7] LinkedIn Learning, "Using AI for Data-Driven Insights: Overview of AI for Data-Driven Insights," n.d. [Online]. Available: <https://www.linkedin.com/learning/using-ai-for-data-driven-insights/overview-of-ai-for-data-driven-insights-25184049?resume=false&u=77966930>. [Accessed: 8-Jul-2026].
- [8] OpenAI, "ChatGPT conversation," ChatGPT, Jul. 8, 2026. [Online]. Available: <https://chatgpt.com/c/6a4e5486-ca88-83eb-a1a9-93a278f6f982>. [Accessed: Jul. 8, 2026].

Appendices

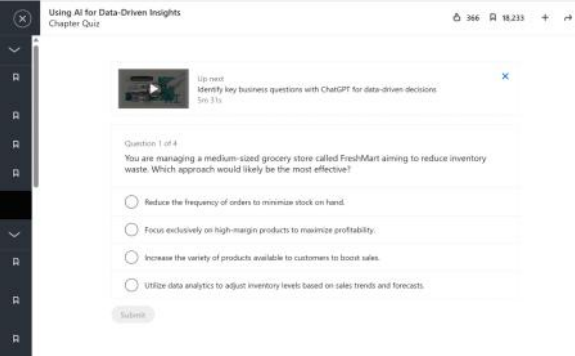
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Here is Trello the software chosen to keep track of progress week by week following along the Gantt chart.



CPD evidence of engagement with an online certified course. [7]



HTML-

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>AI Data Analytics Platform</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>

  <div class="container">

    <header>
      <h1>AI-Assisted Data Analytics Platform</h1>
      <p>Upload a CSV file to begin automated data analysis.</p>
    </header>

    <section class="upload-card">

      <h2>Upload Dataset</h2>

      <form>

        <label for="csvFile" class="upload-label">
          Select CSV File
        </label>

        <input
          type="file"
          id="csvFile"
          accept=".csv"
        >

        <button type="submit">
          Analyse Dataset
        </button>

      </form>

    </section>

    <section class="info-card">

      <h2>How it Works</h2>

      <ol>
        <li>Upload a CSV dataset.</li>
        <li>The system cleans and analyses the data.</li>
        <li>Statistical visualisations are generated.</li>
        <li>AI produces natural-language insights.</li>
      </ol>

    </section>

  </div>
```

CSS-

```
/* Reset */

*{
  margin:0;
  padding:0;
  box-sizing:border-box;
  font-family:Arial, Helvetica, sans-serif;
}

body{
  background:#f4f7fa;
  color:#333;
  display:flex;
  justify-content:center;
  align-items:center;
  min-height:100vh;
}

.container{
  width:90%;
  max-width:700px;
}

header{
  text-align:center;
  margin-bottom:30px;
}

header h1{
  color:#1f4e79;
  margin-bottom:10px;
}

header p{
  color:#666;
}

/* Cards */

.upload-card,
.info-card{
  background:white;
  padding:30px;
  margin-bottom:25px;
  border-radius:10px;
  box-shadow:0 5px 15px rgba(0,0,0,0.1);
}

.upload-card h2,
.info-card h2{
```

```
</section>

</div>

</body>
</html>
```

```
    width: 100%;
    height: 100px;
    background-color: #f4f4f4;
    border: 1px solid #ccc;
}

.upload-card h2,
.info-card h2{

    margin-bottom: 20px;
    color: #1f4e79;
}

/* Upload */

.upload-label{

    display: block;
    margin-bottom: 10px;
    font-weight: bold;
}

input[type=file]{

    width: 100%;
    padding: 10px;
    margin-bottom: 20px;
    border: 2px dashed #4d90fe;
    border-radius: 8px;
    background: #fafafa;
    cursor: pointer;
}

button{

    width: 100%;
    padding: 14px;
    border: none;
    border-radius: 8px;
    background: #1f4e79;
    color: white;
    font-size: 16px;
    cursor: pointer;
    transition: 0.3s;
}

button:hover{

    background: #163c5c;
}

/* Instructions */

.info-card ol{

    padding-left: 20px;
}

.info-card li{

    margin-bottom: 12px;
}

>
```