



Abertay University

Honours Project Feasibility Demonstration

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Gantt Chart

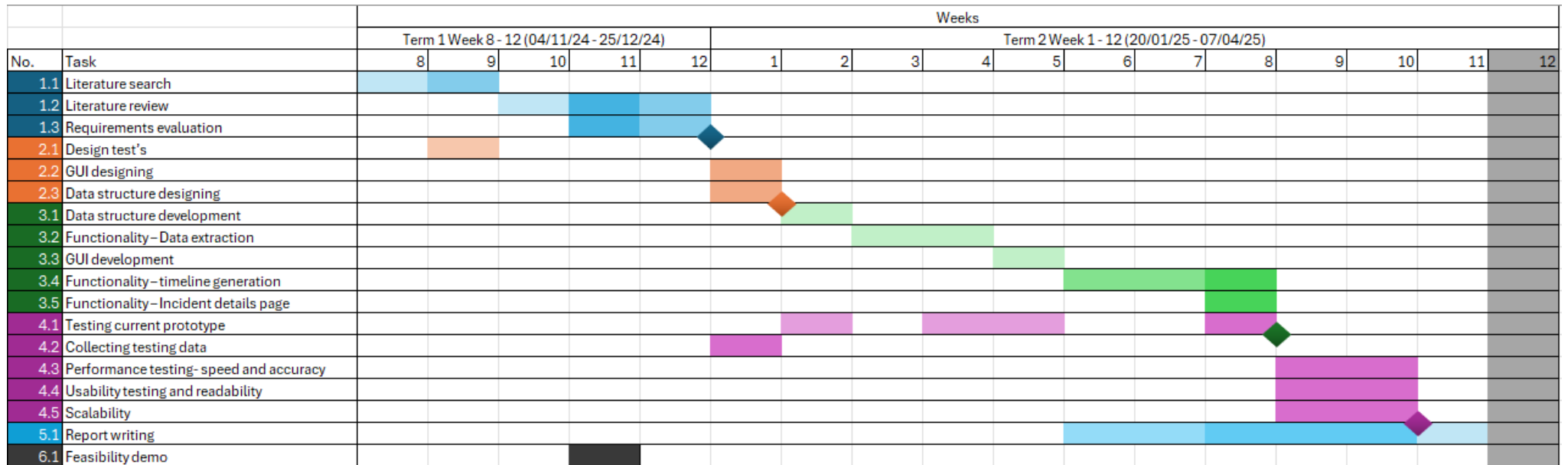


Table 1 Gantt chart.





	This represents milestone one. End of research phase
	This represents milestone two. End of design phase
	This represents milestone three. End of development phase
	This represents milestone four. End of testing phase

Table 2 Gantt chart keys.

Risk Analysis

Technical Risks

Software defects

As this project is development heavy a risk which is likely to happen is bugs and defects from programming. These can arise at any stage of the development process. These could be issues with data handling, inaccurate timelines or functions not correctly running and there are many other defects which could arise. Without proper mitigations, this could impact the project by delaying the completion of the application. Additionally, without correctly addressing these issues this could affect user experience and possibly affect scalability. To reduce the chances of defects regular testing throughout the prototyping will be done. This will detect bugs and defects early on before they become harder to fix. Once bugs or defects have been identified an appropriate fix will be found and applied.

Performance issues

The current prototype is not complex, so performance does not struggle. However, as the application's complexity increases, so will the resources needed to run the application. This will be easily seen once a full extraction of Autopsy's database file has been completed and plotted on the GUI. Performance risks could impact the application's speed, making it unusable or impractical to use. Regular performance testing will reduce this risk. If performance starts to struggle, another approach will have to be taken to reduce the number of resources needed. Additionally, parallelisation to accelerate the program might be needed.

Data loss

Data loss could happen if any of the files become corrupted or lost, possibly affecting progress and the completion date. Additionally, poor version control could cause the current prototype to be misplaced or lost. This risk will be eliminated by performing regular backups to OneDrive or GitHub after any changes to the application have been made. The backups will be stored on Github, as it is a cheap and reliable option.

Hardware issue

The programming will be completed in an integrated development environment (IDE) on a laptop and if the laptop malfunctions, is lost or stolen the IDE will be lost. This is a minor risk as the university can provide computers which can be used to continue the development, however, setting up the computer and installing any dependencies could result in slowing down the development.

Inadequate knowledge

As this project will be testing the parameters of current knowledge it is expected to have several knowledge gaps. An extensive literature review will ensure majority of knowledge is captured to progress the project reducing this risk. However, some knowledge gaps may remain. These have been mitigated by allowing additional time within the Gantt chart for any setbacks which could occur due to improper knowledge. Furthermore, this risk covers inadequate requirements gathering, this risk covers unknown requirements for the project, the chance of this occurring is low and should not create a massive impact. The literature review before the project starts will identify any major requirements.

Non-technical Risks

Scope creep

This risk has a medium chance of occurring. As the project progresses, scope creep could increase as the developer adds more to the original project's scope. To prevent this, the Gantt chart will be used with regular supervisor meetings to ensure no unnecessary additional development is done.

Burnout

Burnouts are common among university students, and they could negatively affect the overall finished project. This can be mitigated by spreading the workload throughout the week and ensuring the work is done as told in the Gantt. This can prevent too much work from being done too fast without having time to unwind causing an individual to burnout.

Unpredictable external factors

There are many other factors which could occur these include: natural disasters, war, electrical outages, sickness, pandemics and many more. These can be considered unlikely, but they are still factors that should be considered. As most of this work can be done online, there is no major risk. These factors will have to be accepted and monitored throughout the project.

Risk matrix grading criteria

The likelihood of the risk will be rated on a scale between 1 (Low) and 3 (High), the risk consequence is based on a scale from 1 (Low) and 5 (High). To determine the risk grade for each identified risk the above grading system will be used. To assign a specific grade, the two numbers will be multiplied and then assigned a colour. (Red, Amber, Green) based on the total number. (Red = 11-15, Amber = 6-10, Green = 1-5)

Identified risks and their total grade after mitigation has been applied. (likelihood * risk consequence)

1. Software defects = $2 * 2 = 4$
2. Performance Issues = $2 * 2 = 4$
3. Data loss = $1 * 4 = 4$
4. Hardware issues = $1 * 2 = 2$
5. Inadequate knowledge = $2 * 3 = 6$
6. Scope creep = $2 * 3 = 6$
7. Burnout = $2 * 3 = 6$
8. Unpredictable external factors = $1 * 2 = 2$

Risk Matrix

Below is a plotted risk matrix after the risk mitigations have been applied, the numbers represent the risk shown above, As displayed no high risks are identified.

Likelihood	Very low impact	Low impact	Medium impact	High impact	Very high impact
Low				3	
Medium	4, 8	1, 2	5, 6, 7		
High					

Table 1 Plotted Risk Matrix with identified risks.

Research Questions

How could temporal data be processed and visualised on an interactive timeline for users to easily understand and analyse?

This question suggests that the application is

- Developed using a preferred approach to displaying data in a timeline fashion.
- Easy to use for low-technical users.
- Easy to read and analyse the information displayed.
- Promotes the use of an interactive design in the user interface.

Statement of Change

Nothing from the proposal has significantly changed.

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