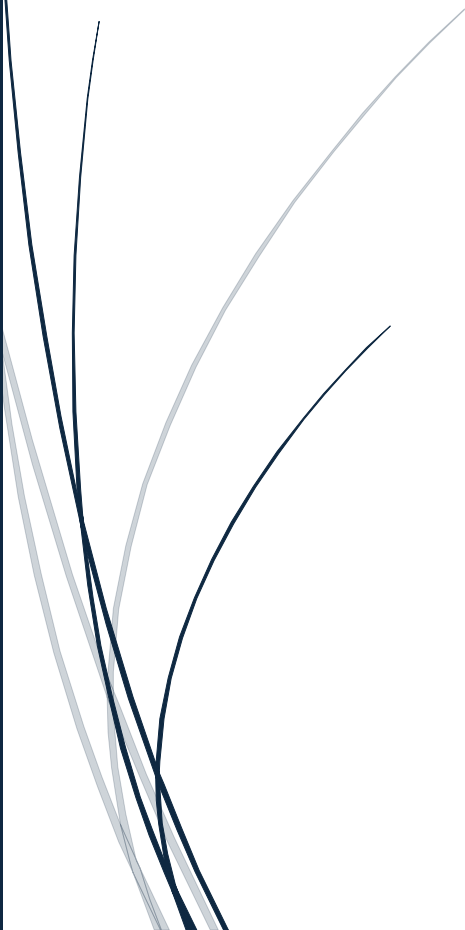


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Changemakers: Creativity and Value Creation

Assessment 2: Project
Management & Innovation



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1. Introduction

The main aim of this assignment is to put into practice some of the material learned all throughout this term. Areas of value creation and creativity such as project management, planning, project design and enterprise (or innovation) will be put to the test to achieve the end goal of taking the role of a project manager and to produce the skeleton of what could be the start of a new venture.

2. Project Management

The first part of this assessment will consist of project management along with the proper planning, schedule, project scope, project timeline and constraints. Additionally, this first part is crucial because it will help project managers understand if the goal of the project is feasible or if it is worth the time, effort and resources.

2.1 Project Management & Planning

2.1.1 Project Scope

The main scope of the project will be related to the first assessment of the “Changemakers: Creativity and Value Creation” subject, the project focuses on exploring modern alternatives to traditional password use in everyday digital authentication. Ultimately, the project aims to investigate current user challenges regarding passwords, identify more secure and user-friendly authentication approaches and find out how people react to passwordless transition, in other words, discover different ways to tackle the world of forgetfulness that is password authentication. The project will gather user insights through surveys and/or short interviews, analyze the findings and propose a practical concept for an improved authentication method.



2.1.2 Proposed Solution

The proposed solution revolves around a user-centered passwordless authentication concept, mainly rooted in evidence collected from users, meaning the fundamental part of the project relies heavily on accurate and quality data collected from online users or real-life participants.

2.1.3 Required Technologies & Resources

The required resources to bring the project to success include but are not limited to survey tools (e.g., Google Forms, Microsoft Forms), data analysis tools like Microsoft Excel or SPSS, literature search tools (e.g., Google Scholar, UWTSD e-Library), prototyping tools like Figma if a design concept is to be produced and optionally, Python or Excel could be used for visuals or simple statistical analysis.

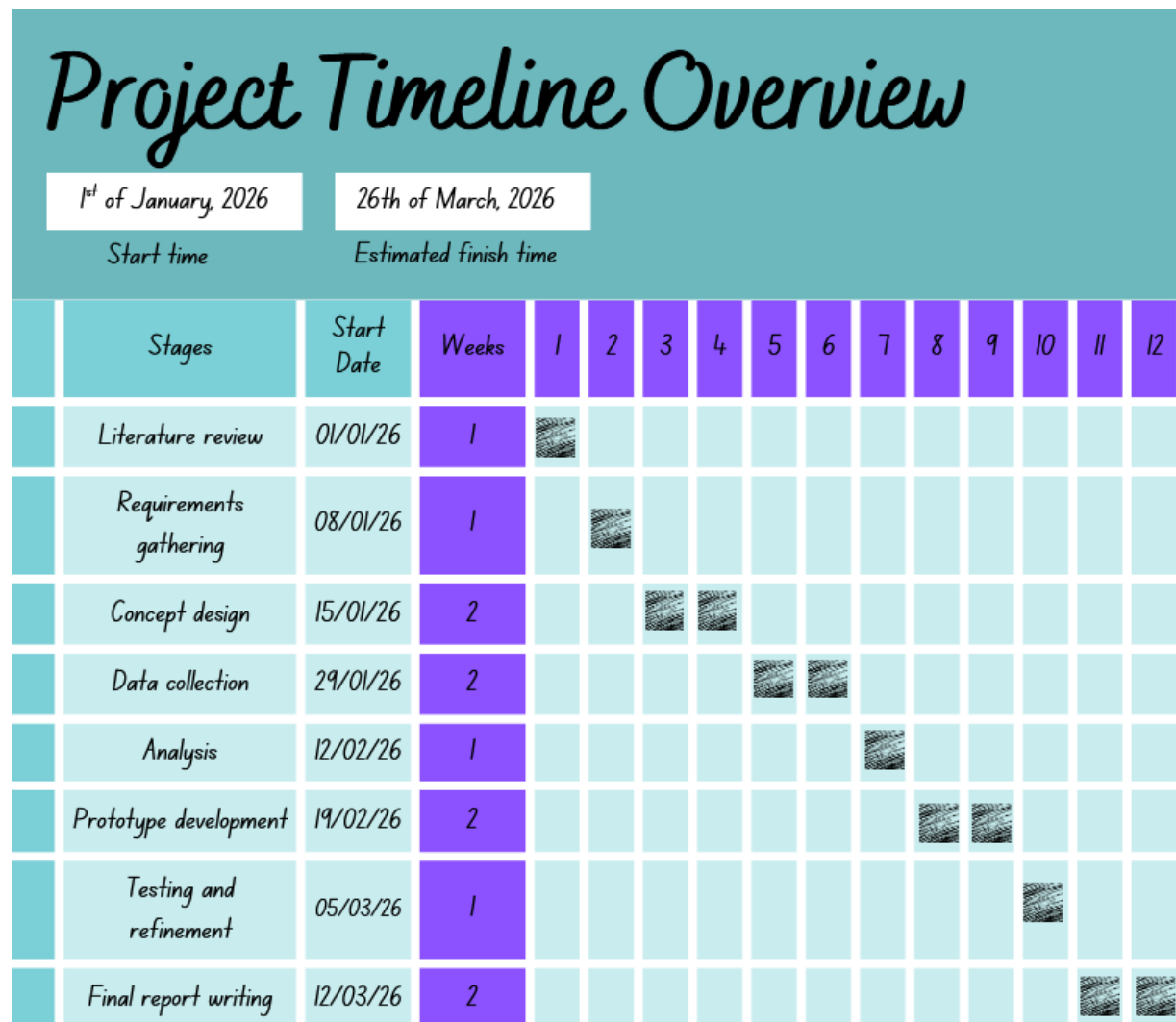
2.1.4 Project Constraints

Project constraints are known to hinder progress; therefore, it is important to plan and find a solution to the issue before it becomes a bigger problem. Limited access to cybersecurity professionals for feedback might be one of the project constraints, however, it can be countered by having professors from the university give feedback. Time restrictions for collecting user data could be another constraint, which can be deflected by running data collection campaigns at all stages of the project and not just during a designated period. Ensuring ethical handling of sensitive data is a major constraint due to the nature of the project, therefore, additional time will have to be appointed to ensure a smooth operation.



2.1.5 Project Timeline Overview

Setting deadlines for the different stages of the project is key to achieving an end goal in a timely manner. The project is separated into 8 different parts: literature overview (1 week), requirements gathering (1 week), concept design (2 weeks), data collection (2 weeks), analysis (1 week), prototype development (2 weeks), testing and refinement (1 week) and final report writing (2 weeks).

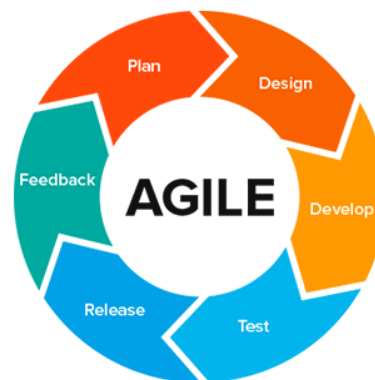
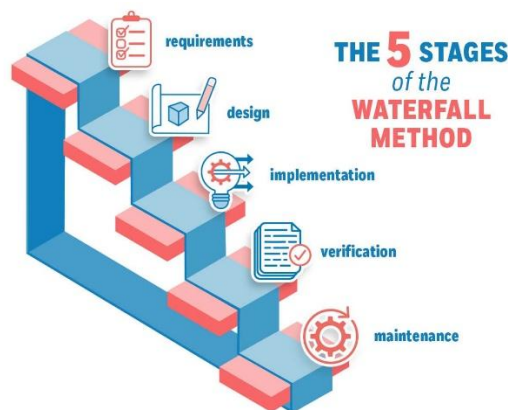


This is the Gantt chart created for the purpose of the project timeline overview. Courtesy of canva.com [1].

2.1.6 Development Method

The waterfall methodology is often criticized for its rigid character due to its lack of certainty and flexibility. It was initially introduced by Winston Royce in 1970 and later adopted and further developed by software project managers [2]. Due to its flaws, I personally believe it is best to implement a waterfall-style hybrid method combining

agile and waterfall to create the perfect development method which will help elevate the project to the next level. This type of methodology is suitable for the project because the stages naturally follow one another: research, data collection, analysis and design. However, small iterative cycles can be applied during the design and prototype stages to refine ideas based on the feedback received, which means, the project will change sporadically due to its nature of heavily depending on the results from data collection [3].



2.2 Project Design

2.2.1 Design Piece 1: Requirements Specification

The first design piece chosen for the project is a requirements specification inspired by a template created by University College London [4].

Functional Requirements Table

Req. ID	Requirement Name	Requirement Description
Req. 1	User Authentication Input	The system must allow users to authenticate without entering a traditional password
Req. 2	Support for Passwordless Methods	The solution must support at least one passwordless option, such as biometrics, passkey or device-based authentication

Req. 3	User Profile Management	Users must be able to register their preferred authentication method during setup
Req. 4	Secure Data Handling	Any stored authentication information must be encrypted and processed securely
Req. 5	Feedback During Login	The user interface must show clear messages (e.g., “Authentication Successful”, “Try Again”, or “Login Attempts Remaining: X”

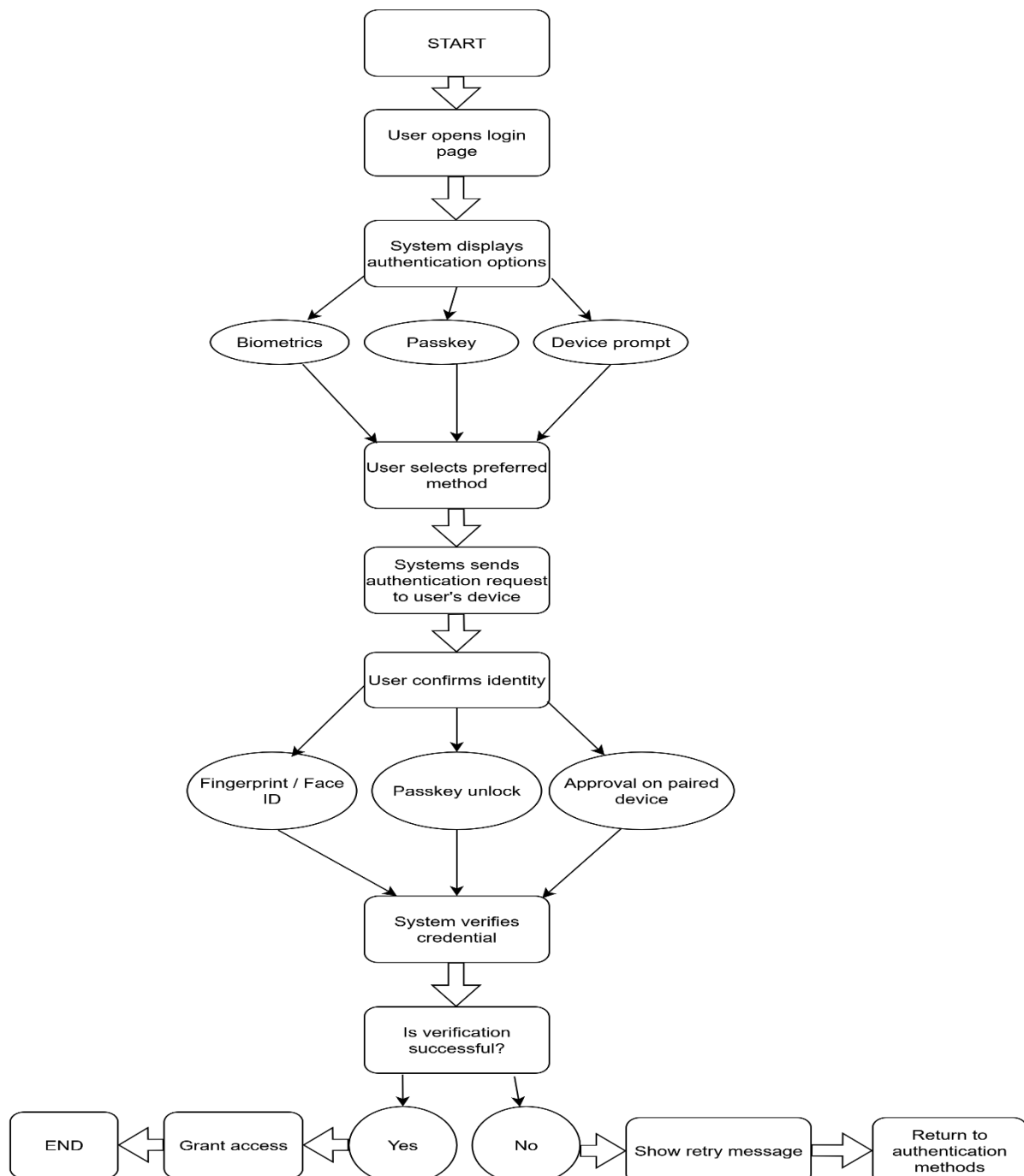
Non-Functional Requirements Table

Req. ID	Requirement Name	Description
NFR1	Security	Authentication methods must follow modern standards
NFR2	Usability	The system must be easy for non-technical users to understand and complete with minimal steps
NFR3	Reliability	Authentication should work consistently without frequent failures
NFR4	Performance	The login process should take no longer than 3-5 seconds after the user initiates it

NFR5	Accessibility	The interface must be usable on laptops, desktops and mobile devices
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2.2.2 Design Piece 2: Authentication Flow Chart

The second and last design piece chosen for the project is an authentication flow chart made possible with a flow chart maker solution [5].



3. Enterprise or Innovation

Considering the project revolves around improving how people authenticate online and exploring modern alternatives to passwords, I reckon the right choice would be innovation due to the focus of project being on technical evolution rather than business creation.

3.1 PEST & SWOT Analysis for a Cybersecurity Company (Cisco)

To further understand the environment in which passwordless authentication is being developed, a PEST and SWOT analysis of Cisco's security ecosystem provides insights into internal factors. Firstly, the PEST analysis.

P Political	E Economic	S Social	T Technological
• Governments worldwide are increasingly putting pressure on organizations to meet cybersecurity standards, such as the GDPR in Europe or the NIST framework in the US. • National interest in digital identity policies, namely, government-backed digital IDs, encourage an environment where passwordless systems can thrive • Cybercriminals are often times moved by political motivations whether it is pushing an agenda or endorsing a political party, therefore, it is in government's best interest to invest in cybersecurity solutions to avoid potential threats	• Rising cyber-attacks cost companies hefty sums of revenue, therefore, organizations are pushing to invest in authentication tools • The nature of a business is to seek cost-efficient solutions in all departments. Security programs which aid in reducing help-desk expenses related to password handling are valuable to the overall economic sphere	• Generally speaking, users prefer convenience, a well thought out biometrics or any passwordless login method will increase the simplicity of password handling • Awareness of data privacy continues to rise, this pushes organizations to ensure transparency in how data is handled	• The rapid advancement of technology, specifically in the cybersecurity world, is enabling a shift towards passwordless authentication • Cloud identity platforms now support passwordless methods as standard features

[6][7]

Lastly, the SWOT analysis.



[8][9]

3.2 Legal & Ethical Considerations

Some legal and ethical considerations revolving around the project are, for example, systems that must comply with GDPR, data protection laws and data regulations, ethical deployment requires transparency, user consent and clear explanations of how the authentication data is handled, lastly, accessibility and inclusivity must be considered e.g., providing alternatives for users unable to use biometrics.

3.3 Concepts, Methods, Practices & Tools for Developing a Passwordless System in a Large Organization

If the passwordless authentication system was to reach a large organization and be implemented, it would follow a structured innovation and development lifecycle. The main idea would be to create a secure, scalable and user-friendly solution which replaces traditional passwords.

3.3.1 Concept Development

This stage involves refining the core idea which is reducing the reliance on passwords by implementing passkeys, biometrics or device-based authentication.

3.3.2 Methods and Practices

User-Centered Design (UCD)

Developers gather feedback through interviews, pilot surveys and usability tests to ensure the system is intuitive and accessible. A user-centered design helps refine the interface and reduce confusion during the transition from passwords [10].

Iterative/Agile Development

A combination between an iterative and agile development offers a flexibility approach in development where the product is built in short cycles to deliver a working iteration swiftly. It combines the refinement of features over time with the addition of new features with every new cycle. This is particularly important for authentication because users interact differently with it [11].

Security by Design

This concept refers to the practice of adding security barriers to every phase of software development, making sure that security is a fundamental priority from the start. Therefore, security measures such as encryption, device-bound keys and multi-factor authentication are implemented from the start rather than added later [12].

3.3.3 Tools Used in Deployment

Identity Platforms

Platforms like Microsoft Entra ID, formerly known as Azure Active Directory, Google Identity Services and FIDO2-compliant authentication tools support passkeys, biometrics and device-based authentication which will be the backbone of the project.

Prototyping Tools

Tools such as Figma for interface development and Draw.io for multi-purpose diagrams will be useful in the prototype phase of the project.

Monitoring & Maintenance Tools

Tools like Microsoft Sentinel, automated alerting systems and device identity management tools will help in the maintenance and monitoring phase of the project.

3.3.4 Evolution

Once the authentication solution is deployed, the system will evolve mainly through regular security updates, user feedback and periodic audits. This will ensure that the solution stays secure, compliant and easy to use over time.



4. Project Reflection

Working on a project which is focused on improving password practices and exploring passwordless authentication gives me a valuable opportunity to grow both personally and professionally. Cybersecurity affects everyone and this project has helped me understand not only how authentication works but also why it needs to improve. By carrying out this project, I can build important skills and contribute meaningfully to society.

4.1 Developing New Skills

One of the main benefits of this project is the chance to develop stronger research skills. Looking into topics such as biometrics, passkeys and alternatives to traditional passwords requires searching through articles, reports, books and multiple other reference materials from trusted organizations. In doing this, it makes me become better at understanding information, comparing ideas and deciding what evidence is

most useful. Additionally, these skills will help me in future studies and in any career which benefits from gathering and evaluating information.

I am also developing practical planning and organizational skills. Creating project timelines, designing charts and breaking the work into clear stages has helped me understand how to manage a larger piece of work from start to finish. Using planning tools such as Gantt charts makes it easier to stay on track and avoid leaving tasks too late. Learning to plan effectively is a crucial part of academic projects and real-world work environments.

Another skill I am improving is communication. Writing about technical ideas in a clear and simple way is often a hard task. This project has taught me how to explain technical concepts in a much simpler way because being able to convey ideas concisely is essential in cybersecurity, mostly due to the average user being unfamiliar with such area of expertise.

Lastly, I am developing critical thinking and problem-solving skills. Cybersecurity is an industry which faces problems such as weak passwords, phishing scams and overall confusion on how to deal with them. Exploring these issues encourages me to think outside of the box and find out why they happen and how to improve them.

4.2 Positive Impact on Society

Cybersecurity affects everyone who uses the internet, therefore, a project about modernizing passwords can have real-world benefits. Passwords are a common source of frustration, and many people use weak or reused passwords because they are hard to handle. This makes users vulnerable to hacking, identity theft and fraud. By looking at alternatives such as biometrics, device-based login or passkeys, this project explores ways to reduce the risk of cybercrime while making life easier for users.

A more secure and user-friendly login system can help protect people's personal information, financial accounts and online identities. Organizations such as google and the FIDO Alliance argue that passwordless systems can greatly reduce phishing and other attacks because there is no password for cybercriminals to steal. On the other hand, if systems become easier and safer to use, users gain confidence when accessing digital services.

This project also highlights the importance of digital inclusion. Many people find complicated passwords difficult to manage. By promoting simpler, more intuitive systems, users of all ages and technical backgrounds will have a more positive experience when dealing with passwords in the digital world [13].

4.3 Risks, Challenges and How to Manage Them

Like any other project, this one also comes with challenges. One of the main challenges any project faces is time management, as it is always a risk. Planning early, setting regular goals and using project timelines will help to keep the work organized and to remain within feasibility range.

Another risk I am likely to face is user concerns, especially around data privacy. Some survey and/or interview participants may develop skepticism towards the project if the communication between project manager and users is not clear, this ought to scare potentially valuable collaboration. The best way to tackle this issue is to familiarize oneself with privacy standards and to explain clearly how user data can be protected.

Lastly, I would like to point out the biggest concern surrounding this project. Due to the nature of it, it is possible to not gather enough users to involve themselves in the project resulting in poor data collection and inaccurate results. As mentioned before, one way to avoid this problem is to run the data collection campaign at all stages of the project development and/or to also offer some type of reward for the participants to boost interest.

5. Conclusion

Overall, this project has helped me develop stronger research, planning and communication skills while deepening my understanding of modern authentication methods. Although the project presents challenges such as technical complexity, user concerns and time management, these can be reduced through careful planning, reliable resources and clear communication. Lastly, I would like to add that this assignment has helped strengthen my skills in designing diagrams, tables and putting together flow charts for the sake of visually representing concepts in an appealing way.

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