Module: ITPP511A2

Assignment: Question 1 – Group Prototype Plan

Team Members:

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Submission Date: 24 October 2025
 Lecturer: Mr Vilakazi

Project Overview – Planning the Prototype

Prototype Title: StudySync – Smart Student Organizer

Concept Summary:

StudySync is a digital platform designed for college students to manage class schedules, assignments, study sessions, and group projects in one space. The system combines a task tracker, calendar integration, and AI-based reminders to help students stay on top of deadlines.

Objectives:

- Help students organize tasks and track due dates easily.
- Promote collaboration through shared group boards.
- Integrate notifications and performance summaries.

Target Audience:

College students, lecturers, and study groups needing better time and workload management.

Core Features:

- Personal and group task boards
- Study session scheduler
- File sharing and chat
- Weekly progress summaries

Tools Used:

- **Project Management Tool:** Trello
- **Design Tool:** Figma
- **Presentation Tool:** Canva / PowerPoint
- **Video Tool:** Zoom / CapCut / YouTube

Project Management Tracking

We created a Trello board titled **"StudySync Development Plan"** to organize our workflow.

Column	Description	Example Tasks
To Do	Tasks planned but not started	Research user needs; Brainstorm app layout
In Progress	Tasks currently being done	Create wireframes in Figma; Record voiceover
Review	Tasks awaiting feedback	Prototype testing; Content editing
Done	Completed tasks	Write report; Upload video

StudySync Development Plan

Figma Wireframes

We designed our wireframes in Figma to illustrate the main user flow.

Screens Included:

1. **Login Page** – Simple, clean access screen with logo and sign-in options.
2. **Dashboard** – Displays all ongoing tasks, today's goals, and quick actions.
3. **Task View** – Allows creating, editing, and deleting tasks.
4. **Calendar** – Visual schedule of tasks and study sessions.
5. **Group Chat** – Space for group members to communicate and share updates.

Link to Figma Design:
https://www.figma.com/design/VZmjXMh5UKYBjD9Gz64Eja/Cloud-cafe?node-id=0

Group Video Presentation

Our group recorded a 3-minute presentation explaining the StudySync prototype, covering:

- The problem and motivation behind the idea

- Our design and planning process
- The wireframes and features
- Tools used and lessons learned

YouTube Link:
https://youtu.be/bv9QJt9-s7Q

Intellectual Property and Licensing Report

Intellectual Property (IP) refers to creations of the mind that are legally protected from unauthorized use. This includes inventions, literary and artistic works, designs, symbols, names, and images used in commerce. In the context of digital products, IP encompasses software code, user interface designs, logos, and written content.

IP Applied to Our Prototype:

- **Wireframes and UI Designs:** Original creative work protected as artistic expressions.
- **Branding Elements:** Logos, icons, or names created for the app are trademarks.
- **Written Content:** Descriptions, labels, and instructional text are protected literary works.
- **Project Documentation:** Planning materials, task assignments, and reports fall under copyright.

Since our prototype was created collaboratively, the team collectively holds rights to the design unless otherwise agreed. Documenting authorship ensures protection against disputes.

Licensing

We will apply a **Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0)** license, which allows others to:

- Share and adapt the work
- Give appropriate credit
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This licensing ensures responsible use while promoting educational collaboration.

Question 2.1 — Written Proposal

Company Name: CyberNova Technologies (Pty) Ltd

1. Introduction to Cybercrime and Fraud in the 21st Century

In today's hyperconnected world, cybercrime has evolved into one of the most dangerous and disruptive forces of our time. Ransomware, phishing, identity theft, and insider attacks target both private and public institutions.

Unlike traditional theft, cybercrime is silent and invisible — exploiting human error and outdated systems. Criminals now use AI, social engineering, and zero-day exploits to breach defenses once considered impenetrable.

The healthcare sector is especially vulnerable. Patient data is not only confidential it is sacred. Hospitals rely on interconnected systems for everything from life-support devices to digital medical records. Ransomware can freeze systems, jeopardizing patient lives.

2. Our Role as IT Professionals

At CyberNova Technologies, our mission is to **defend, restore, and fortify** the digital foundations that sustain human life and trust.

Team Composition:

- Certified ethical hackers
- Forensic analysts
- Network engineers
- Data recovery specialists

Responsibilities Include:

- Conducting forensic investigations
- Isolating compromised systems
- Recovering and securing vital hospital functions
- Implementing long-term security measures and staff awareness programs

Our methods align with **HIPAA, POPIA, and ISO/IEC 27001 standards**, ensuring legal compliance and operational safety.

3. Ethical Elements and Codes of Conduct

Ethics guide every decision in cybersecurity. Our code is anchored in:

- **Confidentiality:** Protect patient data at all times
- **Integrity:** Ensure recovery processes are transparent and verifiable
- **Professionalism:** Operate within legal and organizational frameworks
- **Accountability:** Document all actions

We follow global standards such as the **ACM Code of Ethics** and **(ISC)^2 Code of Conduct**.

4. Stakeholders Involved

- **Hospital Board & Management:** Decision-making, funding, communication
- **Medical Staff:** Depend on restored systems for patient care
- **IT Department:** Collaborate to maintain continuity
- **Patients:** Privacy and well-being remain top priority
- **CyberNova Technologies:** Primary cybersecurity responders
- **Legal Advisors & Insurers:** Ensure compliance with regulations

5. Identifying Loopholes in the Hospital's IT System

Potential vulnerabilities:

- Outdated or unpatched operating systems
- Weak passwords / lack of multi-factor authentication

- Backups stored on the same network
- Insecure IoT medical devices
- Limited staff training on phishing and cyber hygiene

6. Strategies for Removing the Ransomware

1. **Immediate Isolation:** Disconnect infected devices
2. **Forensic Analysis:** Identify ransomware strain to locate weaknesses
3. **Backup Restoration:** Recover data from verified offline/cloud backups
4. **System Rebuild:** Wipe and reinstall OS
5. **Continuous Monitoring:** Detect hidden backdoors or reinfection attempts
6. **Lawful Reporting:** Collaborate with authorities and cybersecurity agencies

7. Maintaining Operations During Recovery

- Use manual record-keeping for patient tracking
- Activate offline medical devices
- Establish temporary communication channels
- Enforce priority service for ICU, emergency, surgical units

8. Evaluating the Impact of Turning Off Infected Systems

Short-term effects:

- Temporary delays in patient processing
- Loss of access to certain medical records
- Slower inter-departmental communication

Controlled shutdown is essential to prevent ransomware spread while maintaining patient safety.

9. Preventing Future Attacks — Rules and Long-Term Strategies

A. Technical Safeguards:

- Network segmentation and intrusion detection
- Regular updates and vulnerability scans
- Encrypted offsite backups
- Endpoint protection and AI monitoring

B. Ethical and Legal Compliance:

- Adherence to POPIA, GDPR, ISO 27001
- Transparent data-handling and breach reporting
- Third-party security audits

C. Codes of Conduct:

- Strict password and access policies
- Staff cybersecurity training
- Accountability and transparency in IT operations

D. Awareness and Education:

- Phishing simulations and staff briefings
- Promote "Cyber Hygiene Culture"

Conclusion

Ransomware attacks are not just technological events — they are tests of resilience, integrity, and leadership. With the right response, hospitals can emerge restored, fortified, and wiser.

CyberNova Technologies is committed to standing beside the hospital as a trusted partner, ensuring that no malicious code ever disrupts the delivery of care again.

General Summary

Overall, the group worked well together, with each member bringing unique strengths to the project. The collaboration was professional and productive, resulting in a cohesive final submission. Each member displayed good teamwork, and any minor challenges were managed respectfully and efficiently.

References

- Australian Cyber Security Centre. (2024). *Ransomware attacks: Protecting healthcare services*. Retrieved from https://www.cyber.gov.au
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APPENDIX A – PEER EVALUATION FORM

Group Name: CyberNova Security

Date: __24/10/25__

Name of Student Being Evaluated: Tavonga Kufa

Criteria	Never (0)	Seldom (½)	Frequently (1)	Always (2)	Weighting / Score
The student contributed			✓		2

good ideas that added value to the project and produced high-quality work.					
The student performed their tasks in line with what was expected of them.				✓	2
The student managed their own time well and met deadlines.			✓		1
The student accepted responsibility for a fair portion of the tasks and was an enthusiastic member of the team.				✓	2
The student helped others to be successful and worked			✓		1

well with other members of the team.					

Total: 8/10

Comments: Everyone participated well throughout the project. We worked together as a team, helped each other at every step, and made sure all tasks were completed on time.

Signature: _____M.Saule_____

Name of Student Being Evaluated: Junior L. Malunzaisa

Criteria	Never (0)	Seldom (½)	Frequently (1)	Always (2)	Weighting / Score
The student contributed good ideas that added value to the project and produced high-quality work.			✓		2
The student performed their tasks in line with what was expected of them.				✓	2
The student managed their own time well and met deadlines.			✓		1
The student accepted responsibility for a fair portion of the tasks and was an enthusiastic				✓	2

member of the team.					
The student helped others to be successful and worked well with other members of the team.			✓		1

Total: 8/10

Comments: Everyone participated well throughout the project. We worked together as a team, helped each other at every step, and made sure all tasks were completed on time.

Signature: _M.Saule

Name of Student Being Evaluated: Jeremiah T. Kamuzatu

Criteria	Never (0)	Seldom (½)	Frequently (1)	Always (2)	Weighting / Score
The student contributed good ideas that added value to the project and produced high-quality work.			✓		2
The student performed their tasks in line with what was expected of them.				✓	2
The student managed their own time well and met deadlines.			✓		1
The student accepted responsibility for a fair portion of the tasks and was an enthusiastic				✓	2

member of the team.					
The student helped others to be successful and worked well with other members of the team.			✓		1

Total: 8/10

Comments: Everyone participated well throughout the project. We worked together as a team, helped each other at every step, and made sure all tasks were completed on time.

Signature: _M.Saule

Name of Student Being Evaluated: Unaraine Phungo

Criteria	Never (0)	Seldom (½)	Frequently (1)	Always (2)	Weighting / Score
The student contributed good ideas that added value to the project and produced high-quality work.			✓		2
The student performed their tasks in line with what was expected of them.				✓	2
The student managed their own time well and met deadlines.			✓		1
The student accepted responsibility for a fair portion of the tasks and was an enthusiastic				✓	2

			✓		
member of the team.					
The student helped others to be successful and worked well with other members of the team.			✓		1

Total: 8/10

Comments: Everyone participated well throughout the project. We worked together as a team, helped each other at every step, and made sure all tasks were completed on time.

Signature: _M.Saule