

# Initial Business Case – Documentation

# Automatic Student Attendance System

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## Introduction

Welcome to the Automatic Student Attendance System Initial Business Case. In this paper, we outline the key components of our proposed project, such as its scope, necessity, market analysis, and preliminary planning considerations. We also talk about our approach to managing project meetings and taking minutes, as well as ethical concerns in a group charter and stakeholder analysis.

## Initial Project Scope

The project focuses on developing a web-based application that uses face recognition technology to automate attendance tracking. It includes designing an intuitive interface, implementing a robust face recognition algorithm, establishing a secure database, seamless integration with existing university systems, conducting thorough testing and quality assurance, ensuring security measures, and preparing comprehensive documentation. The project objectives provide a clear road map for the Automatic Student Attendance System.

## Project Need

At UOW, large class sizes make it challenging to maintain attendance because manual tracking methods are ineffective. To prevent this, our development aims to construct an automatic attendance system using facial recognition technology:

**Automate Attendance Tracking:** Create a comprehensive system that uses facial recognition technology to automate the process of gathering precise attendance.

**Increase Efficiency:** The project seeks to enhance efficiency for lecturers and lab demonstrators by eliminating manual attendance taking methods.

**Enhance Accuracy:** Accuracy of attendance records is important.

**Improve Accessibility:** Create a user-friendly interface accessible via web browsers.

**Customisation and Integration:** Options for customisation to fit certain UOW departmental requirements and infrastructure.

**Facilitate Compliance:** Compliance with privacy regulations and data security standards.

## Market Analysis

This market analysis will assess existing face recognition attendance systems, identify features, and analyse their strengths. We'll evaluate six leading products, assigning each to a team member for detailed review. The report will cover a summary of each product and a comparative analysis table will aid in selecting the most suitable solution for our project and potentially for UOW's implementation.

### Products Researched

#### FaceX

<https://www.integrated.com/platforms/facex-face-recognition-system/>

Matthew Healey

#### Timeero

<https://timeero.com/>

Gia Bach Nhu

#### QuickBooks Time

[https://quickbooks.intuit.com/app/apps/appdetails/quickbooks\\_time/en-au/](https://quickbooks.intuit.com/app/apps/appdetails/quickbooks_time/en-au/)

Samuel Fitzpatrick-Fuller

#### Buddy Punch

<https://buddypunch.com/>

Dinh Quoc Huy Nguyen

#### Truein

<https://truein.com/>

James Kim

#### Jibble

<https://www.jibble.io/>

Idries Eagle-Masuak

## Summary

FaceX, created by the Chinese firm Integrated Corporation is distinguished by its cutting-edge technology, exceptional accuracy rates, and strong security protocols. With a 0.3-second recognition time, its advanced AI algorithms allow for the simultaneous comparison of 106 face components, resulting in a rapid and accurate method of person identification (*FaceX Face Recognition System* | *Integrated Corporation*, 2018). FaceX is a great choice for companies looking for dependable facial recognition solutions because it is integrated with Integrated Corporation's security management product iPlatform and offers special features like liveness detection technology and AI deep learning algorithms (*iPlatform Smart Security Management* | *Integrated Corporation*, 2018). Its further features, such as heat maps and VIP customer management (*FaceX Face Recognition System* | *Integrated Corporation*, 2018), might not be required for an attendance system that focuses on accurate tracking. Efficient facial recognition and smooth integration with attendance monitoring systems ought to be top priorities for educational establishments like UOW.

## References

*FaceX SERIES* 2018, Integrated Corporation | Integrated Corporation, viewed 23 March 2024, <<https://www.integrated.com/biometric>>.

*FaceX analytics* | *Integrated Corporation* 2018, Integrated Corporation | Integrated Corporation, viewed 25 March 2024, <<https://www.integrated.com/platforms/facex-analytics>>.

*FaceX Face Recognition System* | *Integrated Corporation* 2018, Integrated Corporation | Integrated Corporation, viewed 23 March 2024, <<https://www.integrated.com/platforms/facex-face-recognition-system>>.

*iPlatform Smart Security Management* | *Integrated Corporation* 2018, Integrated Corporation | Integrated Corporation, viewed 23 March 2024, <<https://www.integrated.com/platforms/iplatform>>.

*Build4Asia Securitex 2018 Exhibition* | *Integrated Corporation* 2018, Integrated Corporation | Integrated Corporation, viewed 25 March 2024, <<https://www.integrated.com/news/build4asia2018>>.

*About Us* 2021, Integrated Corporation | Integrated Corporation, viewed 23 March 2024, <<https://www.integrated.com/about-us/>>.

*Access Control Systems* 2018, Integrated Corporation | Integrated Corporation, viewed 25 March 2024, <<https://www.integrated.com/access-control/>>.



# Timeero



## Summary

Time tracking, mileage tracking, and facial recognition are just a few of the many capabilities that Timeero has to offer (*Timeero - Face Recognition Time Clock*, 2024). By preventing unauthorised clock-ins and guaranteeing compatibility with features like real-time notifications, Timeero's sophisticated facial recognition technology improves workflow efficiency and accountability. Because of its offline functionality, it may be used for flexible projects and enables for continuous time tracking at faraway sites. However, these characteristics might not be required for our project, which could add unnecessary complexity. It could be necessary to do more research on alternatives that are more in line with the particular requirements of our project. Timeero is a good contender for consideration in our project assessment because of its emphasis on data security, user-friendly design, and first-rate customer service.

## References

*Jibble* 2024, Jibble, viewed 22 March 2024, <<https://www.jibble.io/best-software/facial-recognition-time-tracking-software>>

*Timeero - Face Recognition Time Clock* 2024, Timeero, viewed 22 March 2024, <<https://timeero.com/facial-recognition>>

*Timeero - Best Face Recognition Attendance System* 2024, Timeero, viewed 22 March 2024, <<https://timeero.com/post/best-face-recognition-attendance-system>>

*Timeero Review 2024: Best GPS Time & Mileage Tracker* 2024, Timeero, viewed 22 March 2024, <<https://timeero.com/reviews/timeero-review>>

# QuickBooks Time



## Summary

Our team's needs are not met by QuickBooks Time, especially when it comes to education-based attendance tracking. Although it has capabilities related to time tracking and attendance at work (*QuickBooks Time*, 2021), its emphasis on other QuickBooks products for integration and demands for small businesses deviates from our objectives. Its closed-source nature also comes with restrictions. User evaluations, particularly those from after QuickBooks was acquired, mostly highlight issues with functionality, performance, and stability. Positive feedback is rare.

In conclusion, while this software offers features relevant to workplace time tracking and integrates well with industry-standard products. It does not justify its utilisation when there seems to be many better, more generalised options out there with better documentation and more adaptability to different situations to use face-recognition in.

## References

Rissell, M 2014, *How to Fail Your Way to Startup Success*, HuffPost, HuffPost, viewed 19 March 2024, <[https://www.huffpost.com/entry/how-to-fail-your-way-to-startup-success\\_b\\_6275982](https://www.huffpost.com/entry/how-to-fail-your-way-to-startup-success_b_6275982)>.

*Intuit to Acquire TSheets: It's About Time* 2017, Businesswire, viewed 28 March 2024, <<https://www.businesswire.com/news/home/20171205005402/en/>>.

Rathjens, L 2015, *The TSheets Story - Intuit Developer Community Blog*, Intuit Developer Community Blog - Intuit Developer Community Blog, viewed 19 March 2024, <<https://blogs.intuit.com/2015/04/14/the-tsheets-story-2/>>.

*QuickBooks Time* 2021, Intuit, viewed 20 March 2024, <<https://quickbooks.intuit.com/au/time-tracking/>>.

Bertrix, A. 2017, *April 2017 QBO Features & Improvements - QuickBooks*, Intuit, viewed 28 March 2024, <<https://quickbooks.intuit.com/r/whats-new/april-2017-qbo-features-improvements/>>.

*How secure is my data with QuickBooks Time?* 2022, Archive.org, viewed 19 March 2024, <[https://web.archive.org/web/20220928222330/https://quickbooks.intuit.com/learn-support/en-au/help-article/security-risk/secure-data-quickbooks-time/L9boBLXw6\\_AU\\_en\\_AU](https://web.archive.org/web/20220928222330/https://quickbooks.intuit.com/learn-support/en-au/help-article/security-risk/secure-data-quickbooks-time/L9boBLXw6_AU_en_AU)>.

## Summary

Buddy Punch offers a comprehensive range of features for controlling employee time, such as mobile apps, task costing, reporting, and time off monitoring (*Facial Recognition Feature* | *Buddy Punch*, 2024). The absence of facial recognition technology designed expressly for attendance tracking is a notable shortcoming of the platform, despite its abundance of tools for optimising labour management procedures. Without this functionality, Buddy Punch is unable to compete with competing solutions on the market that offer state-of-the-art security and usability. Restrictions on scalability, ethical concerns regarding employee privacy, and problems with regulatory compliance all work against its appeal. Buddy Punch offers a lot of useful features overall, but when it comes to tracking attendance, rival apps with more advanced facial recognition technology outperform it.

## References

*Facial Recognition Feature* | *Buddy Punch* 2024, Buddy Punch, viewed 21 March 2024, <<https://buddypunch.com/time-clock-software/features/facial-recognition>>.

*Business Owner* | *Buddy Punch* 2024, Buddy Punch, viewed 21 March 2024, <<https://buddypunch.com/business-owner/>>.

*HR Manager Time Tracking Software* | *Buddy Punch* 2024, Buddy Punch, viewed 21 March 2024, <<https://buddypunch.com/hr-manager-time-tracking-software/>>.

Jibble.io 2023, Honest Buddy Punch Review by a Competitor | 2024, Jibble, Jibble.io, viewed 21 March 2024, <<https://www.jibble.io/reviews/buddy-punch>>.

*Buddy Punch Demo* 2023, Trustradius, viewed 21 March 2024, <<https://www.trustradius.com/products/buddy-punch/reviews?qs=pros-and-cons#reviews>>.

## Summary

Truein's main strength that differentiates itself from other facial recognition attendance systems is its advanced facial recognition system that can recognise faces through masks, changes in facial features, age and the ability to detect multiple faces in one picture (*Face Recognition Attendance System For Employees | Truein 2024*). Truein's abundance of features, ease of use, easy accessibility and versatility makes it a strong benchmark in the field of facial recognition-based attendance systems. However, Truein's features are tailored for contractual and distributed workforces (*Truein Time & Attendance 2024*), making it unsuitable for UOW lecture or workshop settings. While it offers benefits like group face detection (*Face Recognition Attendance System For Employees | Truein 2024*), its manual operation via phone app download doesn't align with this project's needs. An automated attendance system with facial recognition would better suit UOW's requirements. Although Truein has useful features to consider, it's not aligned with UOW's attendance system needs.

## References

*Truein Time & Attendance 2024*, Time & Attendance for Contractual and Distributed Staff, viewed 22 March 2024, <<https://truein.com>>.

*About Us | Truein 2024*, Time & Attendance for Contractual and Distributed Staff, viewed 22 March 2024, <<https://truein.com/about-us>>.

*Time Tracking Software For Employees | Truein 2024*, Time & Attendance for Contractual and Distributed Staff, viewed 22 March 2024, <<https://truein.com/time-and-attendance-system/>>.

*Face Recognition Attendance System For Employees | Truein 2024*, Time & Attendance for Contractual and Distributed Staff, viewed 22 March 2024, <<https://truein.com/face-recognition-attendance-system/>>.

*YourStory 2017*, YourStory.com, viewed 22 March 2024, <<https://yourstory.com/companies/truein>>.

## Summary

Jibble's facial recognition product distinguishes itself in the market with innovative features and robust capabilities, surpassing competitors in the market. It offers effortless setup, strong security measures, API integration for automated attendance, and advanced AI for precise tracking (*Attendance Tracker*, 2024). Unique features such as geofencing, offline functionality, and comprehensive analytics (*Face Recognition Attendance* 2024) enhance user control and insights. Jibble prioritises ethical considerations, mitigating biases and ensuring regulatory compliance. With a proven track record of reliability and user-friendly interface (*Face Recognition Attendance* 2024), Jibble emerges as the premier choice for attendance management. While some features may not be essential for UOW, its broad usability makes it a strong benchmark for our project proposal.

## References

*Face Recognition Attendance* 2024, Jibble Group, viewed 24 March 2024, <<https://www.jibble.io/face-recognition-attendance-system>>

*Attendance Tracker* 2024, Jibble Group, viewed 24 March 2024, <<https://www.jibble.io/attendance-tracker>>.

*Jibble Reviews* 2024, GetApp, viewed 25 March 2024, <<https://www.getapp.com.au/reviews/107609/jibble>>

## Comparison Table

Product	Advantages	Disadvantages
FaceX	<p>Cutting-edge AI algorithms with 106 facial attributes for unmatched accuracy.</p> <p>Real-time warning system for anomalous activity.</p> <p>Smooth integration with iPlatform for enhanced security.</p>	<p>Potential accuracy problems in certain conditions</p> <p>Ethical concerns regarding biases and privacy issues</p> <p>Regulatory challenges and compliance with laws across two different counties</p>
Timeero	<p>Facial recognition technology ensuring compatibility across diverse features.</p> <p>Real-time notifications for irregularities</p> <p>Offline mode for uninterrupted time tracking</p>	<p>Limited to iOS devices.</p> <p>Privacy and ethical concerns regarding biases and data protection.</p> <p>Regulatory challenges and compliance with laws.</p>
QuickBooks Time	<p>Integration with QuickBooks flagship accounting software which is widely used in the industry.</p> <p>Assured security measures by Intuit.</p>	<p>Facial recognition not the primary focus.</p> <p>Performance and stability issues reported by users.</p> <p>Limited adaptation for educational institutions.</p>
Buddy Punch	<p>Extensive feature set for staff and time monitoring.</p> <p>Integration with concurrent systems and workflows in today's businesses.</p>	<p>Absence of facial recognition technology for attendance tracking.</p> <p>Limited scalability for large businesses.</p> <p>Compliance issues with data protection regulations.</p>
Truein	<p>High precision facial recognition with advanced AI algorithms.</p> <p>Mobile accessibility and automated reporting.</p>	<p>Limited to Android and iOS devices.</p> <p>Privacy concerns and potential biases.</p>
Jibble	<p>Effortless setup and robust security measures.</p> <p>High accuracy and speed in recognition.</p> <p>Offline functionality for continuous tracking.</p>	<p>Possible accuracy issues and privacy concerns.</p> <p>Compatibility issues with certain devices or software.</p> <p>Ethical and regulatory challenges.</p>

We aim to use Jibble's advanced features to promote innovation and successfully achieve the objectives of the project by using it as our benchmark product and conducting careful, comprehensive research on it.

## Initial Planning Process

### **Scope Management Planning**

The project's goals align with key objectives and specifications, but adjustments may be needed due to changing requirements, resource constraints, or technological limits. We'll evaluate proposed changes' impact on objectives and deliverables. We'll consider adding sub-features to enhance functionality, prioritising based on feasibility and project goals. Features not feasible now, like security enhancements, will be documented for future consideration. Benchmarking against industry features, like Jibble's API, will guide our approach, allowing flexibility to align with stakeholder expectations and ensure project success.

### **Time Management Planning**

Currently, our team utilises Notion for collaboration, task management, and real-time collaboration, including scheduling and tracking project tasks and assigning them to team members. We plan to use ProjectLibre for creating timeline/Gantt charts due to its compatibility with Microsoft Project and our team's familiarity with it. Our communication primarily occurs through weekly online meetings using Discord, supplemented by weekly physical meetings with our sponsor for project updates and discussions.



## **Risk Management Planning**

Risks include technical challenges such as system downtime, software bugs, and integration complexities. Facial recognition technologies effectiveness is influenced by factors like image quality, and dataset quality, which may lead to inaccuracies in attendance tracking. Security and privacy issues with student data collected by facial recognition technologies present ethical and legal concerns. Resource constraints like lack of hardware, personnel, and time pose barriers to project success, necessitating efficient resource management. Vigilant scope management is essential to prevent scope creep and maintain project alignment with goals. Proactive risk assessment and mitigation are crucial to mitigate delays and ensure timely project delivery. Effective team communication, collaboration, and training are essential to overcome challenges related to team dynamics. Addressing skill gaps and providing necessary resources and training are vital to overcome challenges arising from insufficient competence. Thorough examination of critical risk factors and application of suitable risk mitigation techniques can maximise opportunities and minimise risks.

## Risk Register

Risk ID	Risk Description	Category	Likelihood	Impact	Risk Level	Management Strategy
R1	Technical Challenges lead to system issues	Technical	High	High	High	Conduct thorough testing.
R2	Facial recognition technology affected by dataset quality	Technical	Medium	High	Medium - High	Invest in high-quality Images and optimise dataset.
R3	Security and privacy concerns regarding student data collection	Ethical / Legal	High	High	High	Implement robust data encryption and privacy protocols.
R4	Resource limitations hinder project completion for deadlines	Resources	High	High	High	Prioritise resource allocation.
R5	Scope creep will lead to uncontrollable changes in project objectives	Scope	Medium	High	Medium - High	Establish clear project scope and change management.
R6	Schedule disruptions due to unexpected delays	Schedule	Medium	High	Medium - High	Develop plans and regularly monitoring.
R7	Team dynamic issues, impacting project cooperation	Team	Low	Medium	Low - Medium	Team building activities and open communication.
R8	Skill gaps within the team temporarily halt progression	Team	High	High	High	Provide training and development opportunities.

## Quantitative Risk Matrix

Risk ID	Likelihood (1 – 5)	Impact (1 – 5)	Risk Level
R1	5	5	High
R2	4	4	Medium - High
R3	5	5	High
R4	5	4	High
R5	3	4	Medium - High
R6	3	4	Medium - High
R7	2	3	Low - Medium
R8	4	4	High

Risk ID	Likelihood	Impact	Risk Score
R1	5	5	25
R2	4	4	16
R3	5	5	25
R4	5	4	20
R5	3	4	12
R6	3	4	12
R7	2	3	6
R8	2	4	8

1. R1 and R3 - High Risk (25)
2. R4 - High Risk (20)
3. R2 - Medium Risk (16)
4. R5 and R6 - Medium – High Risk (12)
5. R8 - Low Risk (8)
6. R7 - Low Risk (6)

## Group Charter and Ethical Approach

### **Budget and Resources**

Determine Budget during Project Planning – The project budget will be established by a thorough evaluation of financial resources throughout the planning stage of the project.

Allocating Resources Once Budget is Established - After the project budget has been established, resources will be distributed in line with the needs and project plan.

Cost Control Throughout the Project - Constant cost control strategies will be used to keep track off and efficiently manage project expenditures.

### **Mission and Objectives**

Automate Attendance Tracking

Increase Efficiency

Enhance Accuracy

Improve Accessibility.

Customisation and Integration

Facilitate Compliance

### **Communication**

Meetings - Scheduled weekly meetings with our client/sponsor, both in person and online, with detailed minutes recorded.

Notion - Project management tool for task assignment, deadline tracking, storing meeting minutes and recordings, and document uploads.

Discord - Communication platform for online meetings, document sharing, team coordination, and personal communication.

Questions – Direct inquiries about project progression or tasks can be emailed to the sponsor or sent as personal messages to the project leader and members.

## **Work Processes**

1. Objectives Analysis
2. Assigning Tasks
3. Deadline Confirmation
4. Collaboration
5. Documentation
6. Completion

## **Team Roles**

Project Leader and Manager

Technical Lead

Software Developer

Database Manager

Systems Developer

Support Generalist

## Performance Evaluation

The team will regularly conduct performance reviews, evaluating objectives, schedule compliance, deliverable quality, and stakeholder satisfaction to ensure project alignment and efficiently track progress. To pinpoint underlying problems and potential areas for development, these assessments will consider qualitative feedback from team members and stakeholders. To overcome hurdles and adjust to changing conditions, strategies and tactics will be changed considering evaluation outcomes. Through feedback gathering and plan modification, the ultimate purpose of these evaluations is to improve project performance and surpass stakeholder expectations.

## Conflict Resolution

Resolving conflicts is essential to preserving a productive group and environment. We'll handle conflicts quickly by being transparent with each other and paying attention. We respect differences of opinion and see disagreements as chances for development. Members of the team will voice their concerns, and solutions will be reached through discussion or mediation. If necessary, the project manager and / or sponsor will conduct talks. Our goal is to effectively settle disputes while maintaining the interests of the team.

## Group Rules

Our team created group rules to guarantee accountability and clarity. These policies place a high value on communication and participating fully in meetings. Respect for each other and confidentiality are stressed, and contributors are appropriately acknowledged. All team members are expected to collaborate and act professionally, creating a happy and encouraging atmosphere that helps the project reach its objectives.

## Signatures

Matthew Healey 	Samuel Fitzpatrick-Fuller 	Idries Eagle-Masuak 
James Kim 	Gia Bach Nhu 	Dinh Quoc Huy Nguyen 

## Potential Project Skills Needed

To successfully design and implement the Automatic Student Attendance System at UOW a diverse team with the following technical skills is essential:

Facial Recognition

Test Data for Image Processing.

Software Development.

Database Management

Machine Learning

Security

Hardware Usage

Quality Assurance

By assembling a team with expertise in these areas, we ensure the successful deployment and adoption of the Automatic Student Attendance System for UOW.

## Student Skills and Responsibilities

### Student Skills

Matthew Healey	<p>Java, Python and C++ and web-based languages HTML, CSS, JavaScript.</p> <p>Animation, video, sound and image editing</p> <p>Blender Scripting for processing and rendering</p>
Samuel Fitzpatrick-Fuller	<p>Java, C++, Python, and C#, HTML/CSS/JavaScript.</p> <p>App development for making functional apps and image processing.</p> <p>Audio, video and image processing for android apps.</p> <p>Graphics processing and rendering, specifically with OpenGL.</p> <p>Game development with Unity, C# programming language of choice.</p> <p>Sound Design and Music, in Ableton Live.</p>
Idries Eagle-Masuak	<p>Java, C++, SQL, HTML, JavaScript, Node.js, PHP, and Python</p> <p>Blender for 3D modelling and animation.</p> <p>Experienced in game development using Unity, expertise in C#.</p> <p>Knowledgeable in Python, application in cybersecurity.</p>
Gia Bach Nhu	<p>Java, Python and C++ and web-based languages HTML, CSS, JavaScript.</p> <p>Github, bashscript, shell script Machine Learning, Cross platform like Linux, Windows, Mac</p> <p>Producing and mixing music on Fl studio</p>
James Kim	<p>Java, C++, Python, HTML, CSS, JavaScript</p> <p>Backend API and Microservice development using Spring Boot</p> <p>Frontend development using React</p>
Dinh Quoc Huy Nguyen	<p>Java, C++, JavaScript and HTML, CSS</p> <p>Knowledge of database concepts with relational databases (e.g., SQL) and NoSQL databases (e.g., MongoDB)</p> <p>Experience in web development technologies such as HTML, CSS, JavaScript.</p> <p>UI/UX design and prototyping with Figma</p>



## **Expected Skills to Learn**

Project Management

Communication

Problem-Solving

Collaborative Skills

Developing the Automatic Student Attendance System will improve leadership, teamwork, communication, and problem-solving skills. It will deepen our understanding of relevant frameworks.

## Responsibilities

### RACI Matrix

Task / Activity	Project Leader	Technical Developer	Software Developer	Database Manager	Systems Developer	Support Generalist	Stakeholders
Define Project Scope and Objectives	R	A	I	I	I	I	-
Conduct Market Analysis	R	R	A	R	A	I	C
Assess Technical Requirements	R	A	A	A	A	A	I
Develop Facial Recognition Algorithms	R	A	A	-	I	I	-
Image Processing Techniques	R	A	A	I	I	I	-
Design and Develop Backend Systems	R	A	A	-	A	I	-
Create Interfaces	R	-	A	-	-	A	-
Configure and Manage Databases	R	-	-	A	C	C	-
Quality Assurance	R	A	A	A	A	I	-
Address Legal and Ethical Concerns	R	A	A	A	A	I	C
Communicate with Stakeholders	R	A	A	A	A	A	R

### Legend

R: Responsible

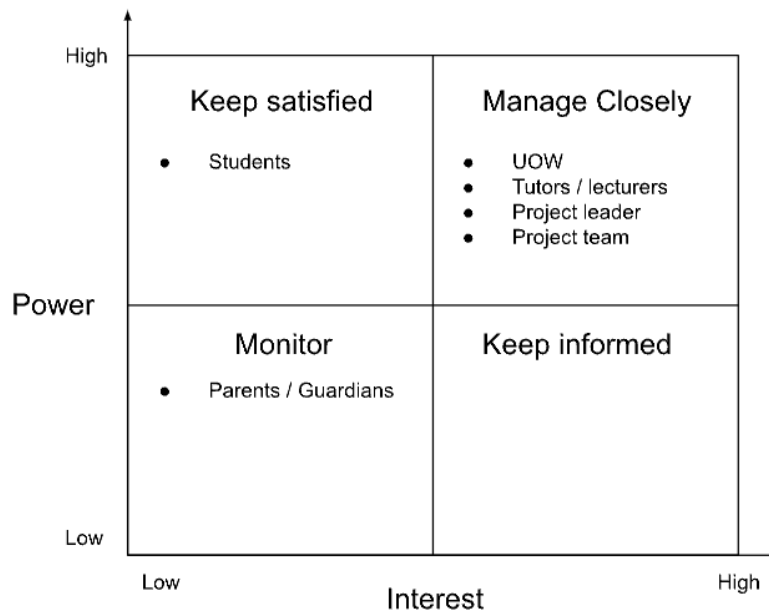
A: Accountable

C: Consulted

I: Informed

-: Not Applicable

## Stakeholder Analysis



### UOW and other Universities

UOW lacks an effective attendance tracking solution for large lectures and workshops. The proposed automatic system aims to alleviate manual operations, with UOW providing necessary resources. UOW's priority as a stakeholder underscores its influence and interest.

### UOW Tutors and Lecturers

Tutors and lecturers hold significant sway in system development, as they lack efficient attendance solutions. The automated system directly aids them, necessitating satisfaction with functionality and usability.

### Project Leader and Project team

The project leader guides task allocation for effective development, with the team possessing requisite skills. They bear complete responsibility for meeting system requirements and standards.

### Students

As primary users, student feedback is crucial. While the system benefits the university, students may express concerns regarding privacy and freedom. Satisfying students is pivotal for successful implementation.

### Parents / Guardians

Interested in their children's attendance, parents lack direct influence in decision-making. Their monitoring during system development remains prudent.

# Meeting Minutes

## Meeting 1

[Week 2] 5/3/2024: 5:35pm - 21 Minutes - In Person: Matthew, James, Idries, Sam, Bach

The objective of this meeting was to convene all members of the group, deliberate on various proposed project options aligned with our collective interests and proficiencies, and allocate provisional responsibilities taking into consideration individual strengths, areas of expertise, and preferences, and even depending on the selected project. After careful deliberation, we opted for a primary project along with two back up projects: the Automatic Student Attendance System, My Life in One App, and the Virtual Reality Escape Room, respectively. For each of the projects, we also came up with ideas.

Roles:

- Matthew - Project Leader and Documentation
- Idries - Technical Developer
- Sam - Software Developer
- James - Systems Developer
- Bach - Database Manager
- Mason - Support Generalist

While these roles were decided, they are interchangeable to account for dividing team efforts and assets to other parts of the project if needed.

## Meeting 2

[Week 2] 8/3/2024: 11:37am - 28 Minutes - In Person: Matthew, James, Idries, Sam, Bach, Dr Fenghui Ren  
**RECORDED**

The aim of this meeting was to engage with Dr. Fenghui Ren, the sponsor of the Attendance project, in order to discuss project specifications, discuss our current gathered information and notes, outline next steps, and establish an overarching project timeline. Dr. Ren provided invaluable insights, guiding us on the specific tasks that warrant immediate attention as we progress to the next phase of the project, as well as general project conduct and rules that should be expected of us.

We didn't get into details about the project as we would not receive the specifications document until our group had been assigned to this project. We instead showcased our current research and resources we have gathered as of right now and started looking into a few tools to aid in this project, with the first being a Project Management Tool.

Part of the meeting was recorded when discussing by Matthew, and notes of the meeting / information were written in our Project Discord by Idries.

## Meeting 3

[Week 3] 12/3/2024: 5:09pm - 14 minutes - Online: Matthew, James, Idries, Sam, Bach, Mason

The objective of this meeting was to introduce Notion as our designated project management tool, delegate roles corresponding to specific sections of Assignment One, and address action items derived from the previous meeting's notes.

During the meeting, Matthew presented the latest advancements in the Notion management tool, showcasing the progress achieved thus far and explaining the plans for further enhancements. His focal point was to highlight the components developed for the initial phase of the project, particularly focusing on Research and Planning. The specific tasks essential for completing Assignment One were discussed, with particular emphasis placed on the pivotal role of the marketing report. This report serves as the cornerstone for gathering crucial information and facilitating comparisons for subsequent tasks, underscoring its significance. Matt subsequently delegated responsibilities within the group for each section of the assignment, with the following tasks assigned:

- Marketing Analysis and Report - All members (sections inside the report would be assigned Once it has started)
- Define Objectives and Scope - Idries (Would commence after meeting with Client)
- Identify Project Stakeholders - James
- Time and Quality Management - Sam
- Risk Assessment - Bach
- Identification of All Members Skills - All Members (would be reported in the Discord in a separate chat)
- Group Project Charter and Group Ethics - Mason
- Record of Minutes and Meetings - Matthew

Matthew stated to aim for the Market Analysis report to be completed by Thursday (21/3) which would give ample time to finish the other sections by the assignment due date of the 29/3.

We ended by setting the next meeting time of Friday (15/3) to confirm the specification details of the project that is assigned to us. We also confirmed our next meeting with Fenghui will be next Tuesday (19/3) and would be our first experience figuring out the scope of the project. Afterwards, on the weekend, is when we'll commence the start of the Research and Planning Phase for the project.

## Meeting 4

[Week 3] 17/3/2024: 12:10pm - 16 minutes - Online: Matthew, James, Idries, Sam, Bach, Mason

The primary objective of this meeting was to outline our strategy for completing the Market Analysis Report, a crucial component of Assignment 1. While awaiting confirmation on the assigned project, we proactively decided to commence work on this significant task. Matthew took the lead in delegating specific responsibilities to each team member for conducting research on various products available in the market. Each member was tasked with analysing one product based on predefined criteria, being:

- Background - History of the Product and Company
- Target of Product - What does the product aim to do / benefit
- User/Audience - Targets users that are intended to use the product
- Advantages
- Disadvantages
- Comparison Statement – Summary to highlight what sets it apart from other products

Upon completion of individual product analyses, Matthew will consolidate the findings to create a comprehensive comparison report. This report will assist in determining the most suitable product to address the project's requirements and cater to the needs of UOW. Further steps and decisions will be formulated in subsequent meetings based on the outcome of this analysis.

Idries provided valuable insights by sharing prior research findings related to facial recognition software. Notably, he identified five products serving as attendance systems and eleven products utilising facial recognition technology. Matthew will now focus on evaluating the efficacy of existing attendance systems, and subsequently assign specific products to team members for in-depth analysis.

The assigned products are as follows:

- Bach - Timeero
- Sam - QuickBooks
- Idries - Jibble
- James - Fareclock
- Mason - Buddy Punch
- Matthew - FaceX (originally 2 Attendance products that didn't include Facial Recognition)

Matthew confirmed he would create a standardised template to guide team members in conducting their research effectively.

The meeting concluded with a clear understanding of individual responsibilities and a collective commitment to delivering high-quality research outputs. The next steps will involve diligent execution of assigned tasks and active participation in upcoming discussions.

## Meeting 5

[Week 4] 21/3/2024: 4pm - 16 minutes - In Person: Matt, Dr. Fenghui Ren **RECORDED**

The purpose of this meeting was to provide Dr. Fenghui Ren with an update on our progress regarding Assignment 1. Due to unforeseen issues with the project allocation, we encountered a delay in our timeline, necessitating a new deadline for the Market Analysis Report to 25/3 to compensate for the lost time. The report was initially aimed to be completed on the 21/3, followed by a comprehensive analysis and confirmation meeting, which would've been this exact meeting.

### Market Analysis Rundown

During this meeting, Matt provided an overview of our current progress with the market analysis, highlighting Idries' research efforts in identifying the five main products, along with additional products related to attendance, thus the allocation of products for research among team members.

A key challenge we encountered during the research phase was the difficulty in identifying the advantages and disadvantages of the products due to the lack of reviews or direct access to the software and information. In many cases, our insights into these areas were inferred or derived from the product branding or limited resources. For instance, Matt faced challenges with his product, FaceX, which lacked any reviews or publicity and available resources. However, through a meticulous analysis of the software's key features and external references, he was able to infer its advantages. Conversely, James encountered significant difficulties in obtaining information about his assigned product, necessitating a change to another product from originally FareClock to now Truein.

Another primary issue we faced was the absence of tutorials or direct resources showcasing the technical capabilities of facial recognition systems, making it challenging to determine the most suitable and advanced product for our project needs unless comparing against facts from the company making it feel biased. However, Idries had success in his research on Jibble, a widely-used facial recognition system, finding information relatively easily. Despite this, he still was having issues uncovering advantages and disadvantages remained a challenge.

It is worth noting that while these products were designed for use in attendance systems, their primary focus was on business environments, particularly in Human Resources applications. Additionally, many of these products, such as those from FaceX, included advanced technologies beyond the scope of our project requirements for lecture attendance tracking.

Dr. Fenghui expressed satisfaction with our current progress but provided feedback on refining our market analysis approach. Understanding the difficulty in sourcing comprehensive information for comparison, he emphasised the importance of focusing on the technical aspects of the software rather than a general overview of the product and company. As an example of Matt's research, FaceX is a module or essentially a sub-product inside a security platform called iPlatform and is only accessible through use of this system, while Matt has focused his efforts on the FaceX product, this technical side of the product involving iPlatform should be stated to give a further understanding of this product. This strategic shift will enable us to prioritise essential criteria for evaluating and selecting the most suitable product for our project objectives.

Overall, while challenges persist in our research efforts, we remain committed to delivering a comprehensive market analysis that aligns with Dr. Fenghui's feedback and project objectives.

### Next Meeting

Matt outlined the key topics he intends to discuss with Dr. Fenghui during our upcoming session. Specifically, he emphasised the importance of transitioning from theoretical discussions to practical client scenarios, aiming to elicit key information crucial for the subsequent tasks following the Market Analysis Report.

The forthcoming meeting held next Tuesday (26/3) holds significant importance as it will serve as a pivotal point in shaping the direction and understanding of the product. It will also serve as a valuable test in



communication between our team and a professional client, fostering collaboration and ensuring alignment with project objectives.

## Meeting 6

[Week 4] 22/3/2024: 6:33pm - 21 minutes - Online: Matthew, James, Sam, Bach, Mason

The objective of this meeting was twofold: to relay key insights from the previous meeting with Dr. Fenghui (Meeting 5) and to assess the current status of each team member's progress on the Market Analysis Report. Matthew commenced the meeting by reiterating critical points discussed in the previous session, emphasising the importance of incorporating technical details about the assigned products to facilitate informed decision-making.

The first part was, Matthew underscoring the necessity of including technical information about the products in the Market Analysis Report. This involves presenting comprehensive insights into the capabilities of the products, including details on external software integration, tailored tools, and product lineage. Discussion ensued regarding the placement of this information within the document, with suggestions to integrate it within the advantages section or create a dedicated section focusing on product technicalities. Despite challenges in sourcing technical data for some products, it was acknowledged that this could offer valuable insights into community perceptions and usage patterns.

Matthew then conducted a thorough review of each team member's progress on their assigned product research:

Sam expressed confidence in his research progress on QuickBooks Time, having compiled a substantial amount of information for each section of the document. However, he acknowledged encountering challenges in delineating the technical capabilities of the product due to a lack of clear documentation or practical usage examples. Additionally, the product lacks explicit information regarding its external properties and alternative applications, further complicating the analysis.

Bach, currently employing a pen-and-paper approach to refine his writing skills, shared his experience with researching Timeero. While the product provides insightful data on GPS tracking and mileage, Bach noted the presence of numerous superfluous functions and features irrelevant to our project objectives. Consequently, he expressed reservations about continuing research on this product.

James, previously assigned FareClock, opted to switch to Truein due to the former's insufficient research material. Truein offered a wealth of useful information and documentation, enabling James to make significant progress on his report. Matt advised James to focus on reviewing the technical aspects of the product and incorporate relevant changes accordingly.

Mason faced challenges in researching Buddy Punch, a product primarily associated with payroll management. Mason raised concerns regarding the inclusion of technical information, considering the product's integration with another tool. Matt suggested highlighting the utilisation of this additional tool and its pertinent functions, while exercising discretion in omitting irrelevant details to maintain the report's focus and relevance.

The concluding segment of our meeting entailed outlining the agenda for our forthcoming meeting with Dr. Fenghui on Tuesday, March 26th. Matt emphasised the significance of this meeting, highlighting its dual purpose of discussing the next steps for completing Assignment 1 and conducting a comprehensive client interaction. However, it was acknowledged that certain tasks, excluding Objectives and Scope, and Time Management, may not necessitate extensive client input. These aspects will be addressed internally, with Dr. Fenghui providing guidance on other remaining tasks. Additionally, Matt confirmed the scheduling of additional meetings for the following week to delve into collaborative tasks such as skill set alignment and project approach refinement. The specific timings for these meetings will be communicated next week.

## Meeting 7

[Week] 26/3/2024: 9:29pm - 32 minutes - In Person: Matthew, James, Sam, Dr. Fenghui Ren, Bach (late), Mason (late) **RECORDED**

The objective of this meeting had slightly changed since what we last planned in meeting 6. Unfortunately, we were unable to handle a 1 on 1 client meeting with Dr. Fenghui as Idries who was handling the project scope and objectives was away. To counter, we still spoke about structure of the report, as well as what information we should be directing towards. To add to this meeting, we still did manage to stay on track by showing Dr. Fenghui our progress on the marketing analysis, what product we had determined was best to focus as a benchmark.

Our initial focus was on reviewing the progress made by the group thus far in crafting the initial business report. Matthew provided insights into the completion of the marketing analysis task, highlighting our selection of Jibble as the benchmark product, pending approval from Fenghui following his review. Unfortunately, technical difficulties arose as Matthew's computer containing the draft document had crashed, hindering our ability to directly showcase our work. However, Matthew assured the group that he would promptly share the draft at a later time. Our primary objective entails each member diligently working on their assigned tasks, with potential revisions to certain areas of the report as deemed necessary, such as changes to the market analysis research. We have set a deadline of Thursday (28/3) to ensure ample time for final adjustments, with Friday (29/3) reserved as a buffer day for compiling all components into the comprehensive report.

Additionally, Sam informed the group of his progress on the Time Management task, having initiated work on a preliminary Gantt chart. Fenghui expressed no need of detail in the chart for now, emphasising the importance of a more intricate Gantt chart in the later stages of the project. While recognising the challenges associated with creating a detailed Gantt chart, Fenghui stressed its necessity to effectively manage the project's complexities as it progresses.

The ensuing discussion was led by Fenghui, who explained the upcoming steps for the project following the submission of the report by this Friday (29/3). Specifically, Fenghui underscored the need to delineate potential functionalities in the project's requirements section, encompassing elements such as camera specifications, database architecture, software integration, budgetary considerations, and the possibility of additional features like an online service, among others. It was emphasised to align these ideas retrospectively with the products researched, ensuring coherence with successful features that could serve as key components in our project. Fenghui reiterated the notion that these supplementary ideas should be approached as non-essential tasks, with the primary focus remaining on ensuring the core functionality of the product meets UOW's requirements seamlessly, without necessitating additional features that cater to a niche subset of functionalities.

Following the establishment of requirements, the subsequent phases encompass designing, building, and testing the project. Of utmost importance is the recognition that the building and testing phases will adopt an agile approach, incorporating various methodologies and structures, including Kanban, owing to the compressed timeline. Kanban methodology entails assigning two team members to collaborate on the same task concurrently, thereby mitigating time constraints and associated risks. Typically implemented during the building and testing phases, this approach involves one member focusing on design and updates while the other is tasked with testing data and evaluating the build, consequently expediting the overall process.

From this information we started discussing the next upcoming assignments which would involve these detailed specification and requirement reports, specifically in assignment 2 and 3, both happening this first semester.

Following that, Matthew presented our findings from the market analysis report, highlighting Jibble as the standout product for potential integration into our project or broader implementation within UOW. Our research led us to conclude that Jibble offers the most advantages with minimal drawbacks compared to other products. Matthew also elaborated on why the other products were deemed less suitable for our

project, primarily due to their focus on business environments and inclusion of unnecessary features. Given that Jibble is available as a freemium product, Dr. Fenghui encouraged us to consider incorporating it into our design process for thorough testing. This recommendation underscores the importance of practical evaluation and hands-on experience to inform our decision-making process effectively.

Matthew next outlined the team's upcoming focus areas, which include individual assigned tasks and several collaborative endeavours, such as reporting each of our member skills and responsibilities. These discussions are to be discussed in meetings scheduled throughout the week. Moreover, Fenghui highlighted that the next meeting with Fenghui will revolve around essential features and potential functions to be integrated into the product. Currently, our ideas are broad and encompassing, such as "Improve Accessibility." However, to bring to the next meeting, we will delve deeper into the specifics of how we intend to achieve these objectives, refining our strategies and solidifying actionable plans.

As we neared the conclusion of our meeting, Dr. Fenghui informed us about the potential opportunity to obtain hardware resources for our project. This entails the possibility of acquiring tools and resources that could significantly enhance the development and testing phases of our project. To initiate this process, we would need to inform Dr. Fenghui, who would then oversee the approval process. Potential resources under consideration include booking a dedicated classroom for camera setup and / or obtaining a GPU to use for data testing processes.

The meeting ended to confirm if there are any questions before the submission date of assignment 1 to email Fenghui. By addressing these key discussion points, the team aims to enhance the quality and comprehensiveness of the Initial Business Report, ensuring alignment with the project and client expectations.

## Meeting 8

[Week 5] 26/3/2024: 7:31pm - 16 minutes - Online: Matthew, James, Sam, Bach, Idries

The objective of this meeting was to reinforce our individual responsibilities in preparation for the submission of the initial Business Report. Central to our discussion was the emphasis on completing our assigned tasks by Thursday, March 28th, to allow for ample time on Friday to fine-tune, rectify errors, and consolidate all resources into the final draft of the report.

We reviewed the Initial Business Case template and explored the possibility of utilising the "canvas" website as a collaborative workspace for task explanation and confirmation, excluding initial planning tasks. Matthew clarified that members assigned to these tasks have the option to utilise this space, and if they choose to do so, they should provide him with screenshots of their work for inclusion.

Next, Matthew emphasised the importance of maintaining a consistently professional tone throughout the entirety of our project. It was previously affirmed by our subject coordinator that professionalism is paramount in all tasks and in the tone reflected within our reports and project. The intention behind this clarification arose from a discussion regarding Sam's inclusion of information about our student schedule, which was deemed to detract from the professional nature of the time management section. Additionally, concerns were raised regarding the use of referencing and citations in our report. It was determined that our market research, which includes the use of links, must now be properly referenced and accompanied by respective citations. Matthew outlined the plan to initially focus on completing assigned tasks and, at a later date, revisit each member's market product to incorporate citations formatted according to the UOW Harvard referencing guidelines.

Matthew informed the group that tasks such as assessing member skill sets and assigning responsibilities would be addressed collectively as our final agenda item. We intend to facilitate this process, possibly using a canvas during an upcoming meeting, although the specifics of this session will be confirmed at a later date.

In conclusion, this meeting emphasised individual responsibilities for the initial Business Report due March 28th. We discussed using "canvas" for collaboration, maintaining professionalism, and implementing proper referencing. Next, we'll collectively assess skills and assign tasks using canvas.

## Meeting 9

[Week 5] 28/3/2024: 6:12pm - 15 minutes - Online: Matthew, James, Sam, Bach, Mason

The objective of this meeting was to conduct a comprehensive progress check on each member's assigned task and to outline the subsequent tasks to be undertaken upon completion.

Matthew initiated individual discussions with each member to assess their progress, focusing initially on James and Bach, having previously spoken with Sam and Mason. James expressed some confusion regarding the scope of his stakeholder analysis, feeling that additional groups could be included. However, Matthew clarified that the current list comprehensively covered all relevant stakeholders for the project's specific focus on UOW. James was commended for his thorough analysis. Moving to Bach, similar questions arose regarding the inclusion of specific risks in the risk management section. Matthew emphasised the importance of considering all potential risks, both project-related and team-related, in this initial overview, and also reassuring Bach not to stress about detailed risk management strategies at this stage.

Transitioning to future tasks, Matthew outlined the importance of compiling individual skill sets to be added in the student skills section. While factual skills that pertain to this project are preferred, Matthew encouraged members to include additional skills that, while not crucial to the project, are worth considering. To illustrate, he provided examples of his and Sam's skills.

Attention then shifted to the final task of completing in-text citations. Matthew would distribute the Market Analysis sections with attached references and corresponding in-text citations for each member to review and insert into their work. Once completed, members were instructed to resend their sections to Matthew for finalisation.

In closing, Matthew reminded everyone of the importance of integrity in academic work, announcing his intention to run the report through plagiarism and AI checker tools to ensure originality. He assured members that any necessary revisions would be communicated promptly to facilitate collaborative efforts in refining the report. Matthew also stated that this would be the last collaborative meeting before the assignment submission, and any more questions would be directly sent to him or other members.