Executive Summary

Abu Dhabi University (ADU) is proposing an enhancement to its campus entrance mechanism, shifting towards a biometrics-centric authentication process, specifically focusing on fingerprint recognition. This initiative strives to bolster safety, increase operational effectiveness, optimize user accessibility, and ultimately synchronize with the university's commitment to establishing an inclusive, productive, and secure setting.

The primary components of this endeavor consist of installing a fingerprint biometric detector, establishing a database for user information storage, incorporating a biometric attribute identification feature, integrating a confirmation algorithm for authentication, and implementing suitable protection protocols for sensitive information. The system also encourages additional functionality ideas from its users and relevant parties, ensuring its alignment with the requirements of its beneficiaries.

The project's benefactor has proposed an adjustable time frame for project realization, setting an estimated goal of one year. The software is projected to maintain operational functionality for a minimum of a decade. Nevertheless, potential risks exist with this project. These encompass the security and confidentiality of biometric information, technological obstacles related to the construction and deployment of a biometric system, and potential dissatisfaction from teaching staff and learners.

The SWOT analysis reveals that the university has the technical capability and the necessary communication channels for successful project completion. The new system presents a higher level of security and convenience compared to the card-based system, representing the strengths and opportunities. However, the project also has weaknesses such as the high implementation costs and potential user discomfort with biometric data collection. Threats include possible privacy concerns and resistance from users toward the new system.

Project integration management involves a systematic approach, utilizing a project charter, stakeholder register, and a clear management strategy. The project charter outlines the project objectives, timeline, budget, approach, and roles and responsibilities of the project team. The stakeholders have been identified, and their levels of interest and influence have been assessed, paving the way for effective stakeholder management.

The project management plan, requirements documentation, requirements traceability matrix, and work breakdown structure have been outlined. The objective of these methodologies and apparatuses is to create a detailed blueprint for the project, elucidating the tasks to be executed, the timeline, and the budget. Furthermore, they aim to maintain a direct association between every prerequisite and its origin, while also monitoring the progression of these prerequisites during the project's duration.

The triumphant realization of this endeavor promises abundant advantages for the ADU campus, yielding a safer and more streamlined entry system that corresponds with the dynamic demands of the university fraternity.

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Introduction

A student's learning process at Abu Dhabi University is of utmost vitality, and ensuring that well-equipped campus facilities and a comforting environment are provided for students plays a critical role in shaping a student's educational journey. As the university is striving for success, it should work on providing motivating, creative, and engaging environments equipped with the necessary technologies and other critical resources for its students to fully immerse in their studies. By cultivating a supportive atmosphere, the university will demonstrate its commitment to the safety, comfort, and success of students.

While well-equipped campus facilities and productive environments do increase student satisfaction and comfort, ensuring the well-being and safety of students is also a crucial goal for Abu Dhabi University. One way of doing so is by examining the issues related to campus access control and unauthorized campus access which could lead to many unfortunate events. The current campus access system which is the traditional card-based access system is widely used yet is accompanied by numerous limitations and risks. Common risks and concerns include lost, stolen, or forgotten cards, unauthorized campus access, the issuing and managing of physical cards, and the effort taken into administrating the access process. Recognizing these issues and risks, and taking student complaints about the inconvenience of the current campus access system into consideration, Abu Dhabi University has made the decision to upgrade to a more secure, convenient, and advanced access system by undertaking the project of upgrading the

current campus access system to biometric-based access utilizing fingerprint recognition technology.

The purpose of this project is to enhance the security and efficiency of the campus access system. By primarily utilizing fingerprints for access control, the project aims to eliminate security weaknesses associated with the current campus access system. As fingerprint recognition technology is highly fraud-resistant and unique, the project will offer an enhanced individual identification scheme that is more reliable and secure. Additionally, campus access will also be made easier and more convenient for students, faculty, and staff as well as less time-consuming which is a result of the automated nature of this technology which provides accurate identification in a quick manner. Overall, this will enhance the experience of anyone accessing the university's campus including faculty and staff.

In this project, we will discuss the IT project management activities and different knowledge areas and development phases that are utilized to deliver the Campus Access System Upgrade project. Project plans, schedule and cost calculations, and other related documents will be provided as project documentation and project management-related deliverables.

Pre-initiation tasks:

This section talks about our projects scope, time, and cost constraints. It also identifies the project sponsor and manager. In addition, it contains a detailed business case.

a. Scope, Time, and Cost Constraints

The project stakeholders defined the project scope as upgrading ADU's campus access system from card-based access to biometrics access, fingerprint to be exact. The project will involve collecting people's biometrics and saving them in a database. A person's identity can be confirmed by matching their biometric data to the data set in the database. The new system should be fully functional by the end, and it should be secure, easy to use, and not time-consuming. Considering that the project is a challenging project the project manager is giving the team a time constraint of a year as it would take time to implement and make sure that the new system is working correctly. The project manager also assigned a cost constraint of AED 800,000.

b. Project Sponsor and Manager

Abu Dhabi University has appointed Mai Zeyadeh as the project sponsor as she is the Chief Executive Officer (CEO). In addition, she has hired Alia Alsaabri the software development manager as the project manager.

c. Business Case

Business Case for ADU Campus Access System Upgrade to Fingerprint Recognition

20 March 2023

Project Name: ADU Campus Access System Upgrade to Fingerprint Recognition

1.0 Introduction/ Background

Abu Dhabi University has adopted a card-based system to access its campus and has decided this year to take the initiative and make the campus more secure by updating its access system to a biometrics system. Using a biometrics system would be more efficient and environmentally conscious, as there would be no need for printing and manufacturing cards. Incorporating biometric authentication adds an obstacle for unauthorized people and helps keep the campus safe.

2.0 Business Objective

Abu Dhabi University's current strategic goals include making the campus safer and protecting the university's assets. Upgrading ADU's access system will help support these goals by not allowing outsiders and unauthorized people to enter the campus. This project will subsequently decrease academic integrity violations and help decrease dishonesty and identity theft.

3.0 Current Situation and Problem/Opportunity Statement

Abu Dhabi University currently uses a card-based access system to access the campus however this way of accessing campus is not the best for many reasons. To begin with, cards get lost/misplaced all the time. In addition, technical issues with the card scanner happen, and this delays students getting to their classes. The card may also contain incorrect information about the user. Another issue is the card's expiration date, which requires users to pay for a replacement card. These issues are just a few of many and that is why upgrading to a biometric system would be a great opportunity and more beneficial to the university. Nonetheless, developing a biometric system is a challenging task and not simple so it requires experts and an experienced team to work on this project.

4.0 Critical Assumptions and Constraints

The new system should be a valuable asset for Abu Dhabi University. Current students and faculty should support this project, and this project must pay for itself within two years by not spending money on manufacturing new cards and by increasing the number of students as they would realize that this campus is safe to be on. The project manager should direct this project with great effort and should collaborate effectively with the rest of the team. The project team must be comprised of people with different job positions. The new system will run on completely new hardware and software, and it should require minimal technical support. It must be easy to use and shall have high security as it contains the biometric data of all students and faculty in the university.

5.0 Analysis of Options and Recommendation

There are three options for addressing this opportunity:

1. Continue using the old system. There aren't major complaints coming from the students or the faculty regarding this issue, and the old system is working properly, and the university can continue operating without implementing the new project.
2. Purchase the software, with little in-house development.
3. Design and implement the new software in-house but use new software and hardware.

Based on the meeting and discussion with the stakeholders, we believe that option 3 is the best option.

6.0 Impact of Problem

This problem has not been addressed before as the university has not noticed the issues up until recently. But when they noticed they immediately started discussing ways to fix this issue and took immediate action. This problem has affected faculty and students majorly as it is time-consuming and not very user-friendly. In addition, the main reason for how it has affected them is that it is not safe i.e., students swapping cards and taking exams for each other, or faculty losing their cards which may allow students to access places they are not allowed to.

7.0 Preliminary Project Requirements

The main features of the project upgrading ADU's access system include the following:

1. Biometrics sensor for fingerprints to capture the fingerprints of students and faculty entering the university.
2. Database to store the biometrics of students and faculty along with information about them such as their names, ID, and phone number.
3. Biometrics feature extraction to analyze the fingerprints of students using the ridges of the fingerprint.
4. Matching algorithm to match the biometrics captured with the ones stored in the database.
5. Suitable security features to protect the biometric data and ensure that the system is not vulnerable to attacks.
6. Other features suggested by users and stakeholders if they add value to the system.

8.0 Schedule Estimate

The sponsor hopes to see this project done within a year; however, the schedule is flexible. We also assume the software will be available for at least 10 years.

9.0 Potential Risks

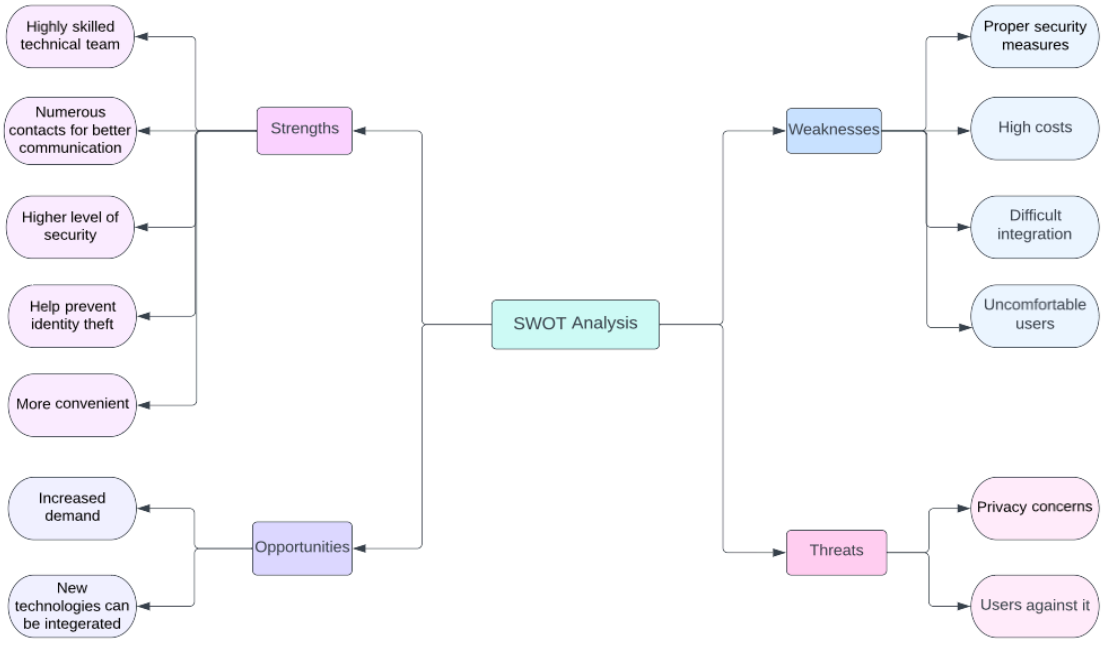
This project has many risks. The main risk is regarding security and privacy, and it is to make sure that people's biometrics are stored safely and there is no risk of leakage of this crucial

information. Furthermore, there are technical risks in developing a biometrics system as it requires experts in various technologies. Incorrect identification falls under the technical risks and making sure problems like that don't occur is vital. In addition, operational risks such as training the people working, integrating the new system in the campus, and failing to manage these operations are other risks. The students and faculty not being satisfied with the new system is also another risk to consider.

10.0 SWOT Analysis

Strengths	**Weaknesses**
● Having a highly skilled technical team to develop this project. ● Having numerous contacts to be able to communicate properly and develop this project successfully. ● Higher level of security compared to the previous method (using cards). ● They are accurate, faster, and help prevent identity theft. ● They are more convenient than the previous methods as users don't	● Implementing the proper security measures as biometric data can be stolen or misused if not properly secured. ● Implementing and maintaining costs are high. ● Integrating the new system in the campus can be difficult. ● Some users may be uncomfortable with the idea that their biometrics are collected.

have to carry their cards with them.	
Opportunities ● Increased demand for biometrics systems as the need for security keeps increasing. ● New technologies emerging can be integrated with the biometrics system.	**Threats** ● There are privacy concerns as biometrics are prone to data breaches. ● Users are against a new biometrics system since they don't want their biometrics to be collected.



Project Integration Management

Integrating all project elements at the right times is key to a successful project completion. The purpose of this section is to describe how we managed the software

system project throughout the use of a project charter, stakeholder register, and management strategy.

a. Project Charter

Project Title: Abu Dhabi University Campus Access System Upgrade to Fingerprint Recognition
Project Start Date: March 20th 2023 **Projected Finish Date:** March 18th 2024
Budget Information: Abu Dhabi University has allocated AED 800,000 for this project. As all aspects of the project will be outsourced, the majority of the budget will be allocated to the procurement of fingerprint recognition hardware and software and any additional equipment required for the implementation of the project.
Project Manager: Alia Alsaabri, 0551233321, alia_a@adu.ac.ae
Project Objectives: Many students have raised concerns about the inconvenience and degrading security of the campus's current access system which is card-based making this upgrade project of critical value to Abu Dhabi University. Addressing this issue is paramount to ensure student satisfaction and campus security. This project will eradicate the security risk of unauthorized campus access and the inconvenience of forgotten/lost cards. This project also aligns with the university's commitment and goal to provide an inclusive, efficient, and safe environment for students. This project aims to achieve the following objectives: ● Implement a functional and robust fingerprint recognition system for campus access. ● Address all student concerns and implement the system primarily around students' needs.

- Optimize the security of the campus by limiting unauthorized access using fraud-resistant technology.
- Improved accessibility, efficiency, and convenience of campus access for students, faculty, and staff.
- Ensure the upgrade is compatible with the existing campus system and infrastructure.
- Reduce the burden of administrating and managing physical access cards.
- Provide students, faculty, and staff with support and training to get familiar with the upgrade.

Success Criteria: The project must address all student concerns and complaints and meet the project scope and requirements. Additionally, the Upgrade project must be functional and effective while being delivered on time and not exceeding the allocated budget. Careful testing must be implemented to validate the project scope and deliverables. Satisfaction surveys will be used post-deployment to measure the effectiveness and success of the project. The university's top management will formally approve the project with the input of primary project stakeholders.

Approach:

- Conduct a deep analysis of the current campus access system.
- Engage with vendors to identify a suitable fingerprint recognition system for procurement.
- Within two weeks, hold a meeting with stakeholders to examine how seamless integration may be achieved with the existing access systems.
- Develop a concise Work Breakdown Structure, a clear Project Management Plan, a Scope Statement, and Gantt Chart in one month.
- Develop a comprehensive implementation and related project plans to follow thoroughly.
- Purchase all required resources (hardware and software) within 3 months.

- Conduct weekly meetings with the project sponsor and the project team to track progress.
- Conduct careful testing of the project fingerprint recognition system according to approved test plans to test for accuracy and reliability.
- Monitor performance post-deployment and establish a support mechanism to address any issues faced in the future.

Roles and Responsibilities

Name and Signature	***Role***	***Position***	***Contact Information***
Mai Zeyadeh	Sponsor	CEO	mai_z@adu.ac.ae
Alia Alsaabri	Project Manager	Software Manager	alia_a@adu.ac.ae
Hala Joudeh	Team Member	IT Specialist	hala_j@adu.ac.ae
Frank Ocean	Team Member	IT Specialist	frank_o@adu.ac.ae
Lance Stroll	Team Member	Programmer	lance_s@adu.ac.ae
James Gunn	Team Member	Security Specialist	james_g@adu.ac.ae
Harry Potter	Team Member	Procurement Specialist	harry_p@adu.ac.ae
Draco Malfoy	Team Member	Procurement Specialist	draco_m@adu.ac.ae
Tom Riddle	Team Member	Programmer	tom_r@adu.ac.ae
John Cena	Team Member	IT Specialist	john_c@adu.ac.ae
Lando Norris	Team Member	Change Management Lead	lando_n@adu.ac.ae
Taylor Swift	Team Member	Communications Specialist	taylor_s@adu.ac.ae

Kevin Hart	Team Member	Programmer	kevin_h@adu.ac.ae
Dwayne Johnson	Team Member	Testing Expert	dwayne_j@adu.ac.ae
Erwin Smith	Team Member	Testing Expert	erwin_s@adu.ac.ae

Sign-off:

Mai Zeyadeh Alia Alsaabri Hala Joudeh Frank Ocean Lance Stroll James Gunn Harry Potter Draco Malfoy Tom Riddle John Cena Lando Norris Taylor Swift Kevin Hart Dwayne Johnson Erwin Smith

Comments: (Handwritten or typed comments from above stakeholders, if applicable)

"I will monitor and report the billing details and entire project expenses to the management." –Kevin Hart

"I want to be heavily involved in this project and express my support" – Frank Ocean

"This project is important to the university's strategic goals so I will be focused on this project and hope all team members do the same" -Tom Riddle

b. Project Management Plan

Project Management Plan Version 1.0

Date: March 28th 2023

Project Name: Abu Dhabi University Campus Access System Upgrade to Fingerprint Recognition

Introduction/Overview of Project

The Abu Dhabi University Campus Access System Upgrade to Fingerprint Recognition project aims to upgrade the current campus access control system with fingerprint recognition technology. By upgrading this system, students, faculty, and staff will be provided with a more efficient and secure access management system, ensuring only authorized individuals are given access to designated areas.

Project Organization

- External interfaces

Inditech: Inditech is the software supplier for the biometrics system. They will be responsible for providing the biometric software and technical support for the implementation and operation of the software.

Honeywell: As the supplier of the fingerprint scanners, Honeywell will be instrumental in providing the hardware needed for capturing the biometric data.

Etisalat: Etisalat, the internet provider, plays a vital role in ensuring the smooth operation of the biometric system. High-speed, reliable internet connectivity is crucial for real-time processing and verification of biometric data.

- Internal structure

Project Manager (Alia Alsaabri): Alia oversees the overall execution of the project, coordinates with all stakeholders, manages resources, and ensures the project is on track to meet its objectives within the given timeframe and budget.

IT Specialists (Hala Joudeh, Frank Ocean, John Cena): They are responsible for installing and configuring the biometric system, liaising with the external software and hardware providers, and resolving any technical issues that arise during the project implementation.

Programmers (Lance Stroll, Tom Riddle, Kevin Hart): These team members will customize the biometric software to meet the specific requirements of the university, integrate it with the existing infrastructure, and ensure seamless operation.

Security Specialist (James Gunn): James is in charge of ensuring the security of the biometric data, implementing necessary safeguards, and addressing potential vulnerabilities.

Procurement Specialists (Harry Potter, Draco Malfoy): They manage the acquisition of hardware and software from the suppliers, negotiate contracts, and ensure the project has all the necessary resources on time.

Change Management Lead (Lando Norris): Lando is responsible for managing the transition from the current card-based system to the new biometric system. He will develop strategies to address resistance to change and ensure smooth adoption of the new system by the university community.

Communications Specialist (Taylor Swift): Taylor is in charge of all internal and external communication, ensuring clear and timely information exchange between all stakeholders.

Testing Experts (Dwayne Johnson, Erwin Smith): These team members are responsible for conducting thorough testing of the biometric system to ensure its reliability and accuracy before deployment.

- Roles and responsibilities

Stakeholder Position	**Name**	**Role**
CEO	Mai Zeyadeh	Sponsor
Software Manager	Alia Alsaabri	Project Manager
IT Specialist	Hala Joudeh	Team Member
IT Specialist	Frank Ocean	Team Member
Programmer	Lance Stroll	Team Member
Security Specialist	James Gunn	Team Member
Procurement Specialist	Harry Potter	Team Member

Procurement Specialist	Draco Malfoy	Team Member
Programmer	Tom Riddle	Team Member
IT Specialist	John Cena	Team Member
Change Management Lead	Lando Norris	Team Member
Communications Specialist	Taylor Swift	Team Member
Programmer	Kevin Hart	Team Member
Testing Expert	Dwayne Johnson	Team Member
Testing Expert	Erwin Smith	Team Member
Supplier	Inditech	Supply software
Supplier	Honeywell	Supply scanners
Supplier	Etisalat	Internet provider
Students	ADU students	Users
Faculty	ADU Faculty	Users

Management and Technical Processes

Management Processes:

1. Regular Project Meetings: Weekly meetings with the project sponsor and project team to track progress and address any issues.
2. Budget Monitoring: Monitoring of project expenses to ensure the budget is adhered to.
3. Stakeholder Communication: Regular updates to stakeholders about the project's status.

Technical Processes:

1. System Analysis: In-depth analysis of the current access system to determine what changes are needed.
2. System Integration: Working with vendors to identify a suitable fingerprint recognition system for procurement.
3. System Testing: Careful testing of the fingerprint recognition system to test for accuracy and reliability.

Work to Be Performed

1. Project Initiation and Planning: Involving stakeholders and developing project plans.
2. Procurement of Equipment: Purchasing all required resources within 3 months.
3. Project Implementation: Developing and implementing the new system.
4. Testing: Validating the system's accuracy and reliability.
5. Training: Training and support for students, faculty, and staff to get familiar with the new system.

Schedule Information

The project's schedule spans a full year, from March 20th, 2023 to March 18th, 2024. The schedule for pivotal tasks is organized as follows:

1. Project Launch and Strategy Formulation: This stage initiates with the project's kick-off on March 20th, 2023, and is projected to persist for roughly a month until April 20th,

2023. This stage encompasses stakeholder participation, ratification of the project charter, and the formulation of comprehensive project strategies.

2. Resource Acquisition: This stage commences immediately following the strategizing stage around April 21st, 2023, and extends for roughly three months, concluding around July 20th, 2023. This stage involves determining and acquiring the appropriate fingerprint recognition technology and software, along with any additional resources necessary for the project's execution.
3. Project Implementation: After the procurement phase, the implementation phase begins around July 21st, 2023. The subsequent stage, projected to span around six months, will entail the creation and deployment of the new biometric entry system. This stage is expected to wrap up around January 20th, 2024.
4. Examination: Coinciding with the latter part of the implementation stage, the examination phase commences around November 20th, 2023, and lasts until the anticipated project completion date of March 18th, 2024. This stage implicates a comprehensive validation of the system's precision and dependability.
5. Training: This stage begins in parallel with the examination phase around February 18th, 2024, and extends until the project's conclusion. During this period, learners, faculty members, and staff will receive instruction and assistance to acquaint them with the new system.

Budget Information

The university has allocated AED 800,000 for this project, primarily allocated for the procurement of fingerprint recognition hardware and software and any additional equipment required for the implementation of the project.

References to Other Project Planning Documents

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Zaeri, N. (2007). Computation and memory efficient face recognition using binarized eigenphases and component-based linear discriminant analysis for wide range applications. University of Surrey (United Kingdom).

c. Stakeholder Register & Stakeholder Management Strategy

Stakeholder Register for Abu Dhabi University Campus Access System Upgrade to Fingerprint Recognition

Date: March 21st 2023

Name	Position	Internal/External	Project Role	Contact Information
Mai Zeyadeh	CEO	Internal	Sponsor	mai_z@adu.ac.ae
Alia Alsaabri	Software Manager	Internal	Project Manager	alia_a@adu.ac.ae
Hala Joudeh	IT Specialist	Internal	Team Member	hala_j@adu.ac.ae
Frank Ocean	IT Specialist	Internal	Team Member	frank_o@adu.ac.ae
Lance Stroll	Programmer	Internal	Team Member	lance_s@adu.ac.ae
James Gunn	Security Specialist	Internal	Team Member	james_g@adu.ac.ae
Harry Potter	Procurement Specialist	Internal	Team Member	harry_p@adu.ac.ae
Draco Malfoy	Procurement Specialist	Internal	Team Member	draco_m@adu.ac.ae
Tom Riddle	Programmer	Internal	Team Member	tom_r@adu.ac.ae
John Cena	IT Specialist	Internal	Team Member	john_c@adu.ac.ae

Lando Norris	Change Management Lead	Internal	Team Member	lando_n@adu.ac.ae
Taylor Swift	Communications Specialist	Internal	Team Member	taylor_s@adu.ac.ae
Kevin Hart	Programmer	Internal	Team Member	kevin_h@adu.ac.ae
Dwayne Johnson	Testing Expert	Internal	Team Member	dwayne_j@adu.ac.ae
Erwin Smith	Testing Expert	Internal	Team Member	erwin_s@adu.ac.ae
Inditech	Supplier	External	Supply software	info@inditechme.com
Honeywell	Supplier	External	Supply scanners	Enquiry.mms@honeywell.com
Etisalat	Supplier	External	Internet provider	etisalat@ae.com

Stakeholder Management Strategy for Project Name

Date: May 23, 2023

Name	Level of Interest	Level of Influence	Potential Management Strategies
Mai Zeyadeh	High	High	Regular updates and briefings on project progress, involve in critical decision making
Alia Alsaabri	High	High	Provide necessary resources, ensure clear communication of expectations, maintain close coordination
Hala Joudeh	High	Medium	Regular project updates, provide opportunities for technical input
Frank Ocean	High	Medium	Regular project updates, provide opportunities for technical input
Lance Stroll	Medium	Medium	Maintain clear task assignments, provide opportunities for technical input
James Gunn	High	Medium	Regular security briefings, provide opportunities for input on security matters
Harry Potter	Medium	Medium	Maintain clear procurement task assignments, regular check-ins

Draco Malfoy	Medium	Medium	Maintain clear procurement task assignments, regular check-ins
Tom Riddle	Medium	Medium	Maintain clear task assignments, provide opportunities for technical input
John Cena	High	Medium	Regular project updates, provide opportunities for technical input
Lando Norris	High	High	Regular project updates, involve in change management decisions
Taylor Swift	High	Medium	Regular project updates, provide opportunities for input on communications strategy
Kevin Hart	Medium	Medium	Maintain clear task assignments, provide opportunities for technical input
Dwayne Johnson	High	Medium	Regular project updates, provide opportunities for input on testing protocols
Erwin Smith	High	Medium	Regular project updates, provide opportunities for input on testing protocols
Inditech	Medium	Medium	Maintain open lines of communication regarding software needs and updates, regular performance reviews
Honeywell	Medium	Medium	Clear specifications of hardware requirements, regular updates on expected delivery schedules and performance reviews

Etisalat	Medium	Low	Ensure clarity on bandwidth and reliability requirements, schedule regular service reviews to ensure quality and uptime

Project Scope Management:

a. Scope Management Plan

Scope Management Plan for ADU Campus Access System Upgrade to Fingerprint Recognition

Date: 5 April 2023

Project Name: ADU Campus Access System Upgrade to Fingerprint Recognition
Introduction: The main purpose of upgrading Abu Dhabi University's access system from a card-based system to a biometrics system is to make the campus more secure and to make it more convenient for the users. This change will make students and faculty feel safer on campus by not allowing unauthorized individuals to enter campus.
Preparing the Scope Statement:

The project manager is responsible for planning how the scope will be managed throughout the lifecycle of the project by understanding the project in detail. The manager will start by identifying the objectives of the project along with its goals. In addition, the collection of requirements is one of the most important tasks to be done in this section. The scope statement will discuss the project deliverables, constraints, and risks along with the stakeholders involved in the project.
Creating the Work Breakdown Structure (WBS): We will be using the analogy approach to create the WBS as it is the easiest one and the one, we are most familiar with. After we are done with the collection of the requirements, we will establish the important project deliverables and break them down into smaller tasks. We will assign a time duration for each task, and we will share the WBS with the rest of the team to make sure everyone approves of the WBS.
Verifying Completion of Project Deliverables: We will sit down with the project sponsor and the customer to verify the completion of the project deliverables. We will be able to do that by comparing the deliverables with the requirements documentation. We will be doing that multiple times throughout the project's lifecycle to make sure everything is going well according to our plan.
Managing Requests for Changes to Project Scope: To be able to manage requests for changes to the project scope we will first need to understand what the cause is for requesting the change. We will create a document for the change requests and requirements. Then we will evaluate the change request and

see how it would affect our scope, time, and cost constraints. Finally, we will manage the changes if they occur.

b. Requirements Management Plan

Requirements Management Plan Version 1.0

7 April 2023

Project Name: ADU Campus Access System Upgrade to Fingerprint Recognition

Planning, tracking, and reporting requirements:

We will begin collecting requirements by doing interviews with all the stakeholders of the project. This will help us understand the project more as will get to understand what their desires and expectations for the project are. The interviews will be held face-to-face to have a better chance of understanding the requirements. These interviews will be conducted by the project manager and the project sponsor. We will be documenting and tracking the document by using a project management tool that will allow us to manage and track tasks and processes. We will then analyze the requirements and then we will organize them based on

their priority. We will ensure that all requirements collected align with the project's goals and objectives.

Performing configuration management activities:

We will have a configuration management plan to efficiently manage the basic constraints of time, cost, scope, and quality.

Configuration Management Plan:

1. Planning and Identifying: we will begin with determining which items need to be managed and then we will document them in the configuration management plan.
2. Controlling: we will control any changes that may occur to the project's scope and manage them properly by documenting change requests, assessing their impact, and making decisions on whether to approve or reject them.
3. Status Accounting: record all changes of all versions of the configuration items as well as record the status of each item.
4. Verification and Audit: ensuring that the end product abides by the configuration requirements.

[1]

Prioritizing requirements:

To ensure our focus remains on the most important tasks and prevent the removal of needed requirements due to time constraints, we will prioritize the requirements. In addition, this approach will help the management of changing requirements, as we will have a clear understanding of which requirements hold the highest priority. We will use our own system to prioritize tasks:

1. Essential: this is required for the project.
2. Needed: this is also required but can be done after the essential requirements.
3. Optional: this can be added if there is time.

Using product metrics:

The main product metric in our project is the cost and our project should not exceed the allocated budget of AED 800,000. We will also be evaluating our project by assessing the performance evaluation by seeing whether the students and faculty are satisfied with the new product. We will finally be evaluating the project by seeing if it aligns with our project goals and objectives.

Tracing requirements:

We will be using a requirements traceability matrix to trace requirements. The traceability matrix will contain the requirement name along with its number, as well as the category that it belongs to and the status of whether it had started, not started, or completed. By using the traceability matrix, we will be able to easily track and monitor the progress of each requirement.

c. Requirements documentation

Req. No	Name	Category	Priority	Source	Description
1	Fingerprint Biometrics	Functional (Performance)	Important and urgent	Project Charter & Business case	Installation and integration of fingerprint biometric sensors for student and faculty access
2	Database Integration	Functional (Performance)	Important and urgent	Inditech	Database system to store the fingerprints and associated information (names, IDs, phone numbers) of students and faculty
3	Biometric Analysis	Functional (Performance)	Important and urgent	Inditech	Software capability to extract and analyze the unique features of

					fingerprints (ridge patterns)
4	Matching Algorithm	Functional (Performance)	Important and urgent	Inditech	Algorithm to match captured biometrics with the ones stored in the database, ensuring accurate identification
5	System Security	Functional (Security)	Important and urgent	Inditech, James Gunn	Security measures to protect biometric data and safeguard the system from attacks
6	User Feedback	Non-functional (Usability)	Important and not urgent	ADU Stakeholders	Ability for users and stakeholders to suggest additional features and improvements
7	System Integration	Non-functional (Performance)	Important and urgent	Honeywell, Inditech	Smooth integration of new system with existing

					university infrastructure
8	Internet Connectivity	Non-functional (Performance)	Important and urgent	Etisalat	Reliable and high-speed internet connectivity for real-time processing of biometric data
9	User Training	Non-functional (Cultural and Political)	Important and not urgent	ADU Management	Training for students, faculty, and staff to familiarize themselves with the new system
10	System Maintenance and Support	Non-functional (Performance)	Important and not urgent	Inditech, Honeywell, Etisalat	Regular maintenance and support to ensure system reliability and continuity
11	Privacy Protection	Functional (Security)	Important and not urgent	James Gunn, ADU Stakeholders	Measures to ensure the biometric data is stored safely and the privacy of users is respected

d. Requirements Traceability Matrix

Requirements Traceability Matrix for Project Name

Date:

Requirement No.	Name	Category	Source	Status
1	Fingerprint Biometrics	Functional (Performance)	Project Charter	To be implemented
2	Database Integration	Functional (Performance)	ADU Specifications	To be implemented
3	Biometric Analysis	Functional (Performance)	Interviews	To be implemented
4	Matching Algorithm	Functional (Performance)	Project Charter	To be implemented
5	System Security	Functional (Security)	Business Case	To be implemented
6	User Feedback	Non-functional (Usability)	ADU Specifications	To be implemented
7	System Integration	Non-functional (Performance)	Interviews	To be implemented

8	Internet Connectivity	Non-functional (Performance)	Business Case	To be implemented
9	User Training	Non-functional (Cultural and political)	ADU Specifications	To be implemented
10	System Maintenance and Support	Non-functional (Performance)	Project Charter	To be implemented
11	Privacy Protection	Functional (Security)	ADU Specifications	To be implemented

The label "To be implemented" indicates that the requirement is recognized and scheduled for execution. Still, the commencement of its implementation has yet to occur. With the project's progression, this status will transition to either "In progress" or "Completed," contingent upon the project's current state.

Limitations of the Project

Technical Complexity: The project requires integrating multiple technical components, including hardware (biometric sensors) and software (database systems, matching algorithms), into existing infrastructure. This creates complexity and could potentially limit the project if technical challenges are greater than anticipated.

Data Security and Privacy: Biometric data are sensitive personal information. Maintaining the confidentiality and protection of this information is critical, yet it presents a considerable obstacle. It's obligatory to conform to all relevant legislation and standards, and any breach in data protection could lead to severe consequences.

User Reception: The triumph of the initiative hinges on the endorsement by users. Ensuring that teachers, administrative staff, and learners feel at ease with the platform and have confidence in its dependability and safeguarding is of utmost importance. Opposition to the newly introduced system, perhaps due to unease with biometric technologies or worries over the privacy of data, could hamper the success of the initiative.

Supplier Dependency: The project relies heavily on external suppliers (Inditech for software, Honeywell for scanners, and Etisalat for Internet connectivity). Any delays or issues with these external parties could potentially impact the project timeline and overall success.

Training Needs: The new system will require users to be trained. The need for comprehensive training could slow the adoption rate of the new system and limit the speed at which the project can be fully realized.

Maintenance and Support: The need for regular maintenance and technical support might limit the system's effectiveness if these requirements are underestimated or if the suppliers cannot provide the required level of service.

Costs: The fiscal aspects of the project, encompassing procurement, deployment, and upkeep of the system, along with user training, could potentially exceed initial estimates. If the project overshoots its financial budget, this might curtail its breadth or postpone its completion.

Regulatory Compliance: The undertaking mandates adherence to legalities and regulations pertaining to data confidentiality and security. Any changes in these regulations could affect the project's scope or delivery timeline.

In spite of these hurdles, we have made every effort to handle and lessen them as effectively as possible, guaranteeing that the ultimate result aligns with our project goals and objectives.

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