UTM

UNIVERSITI TEKNOLOGI MALAYSIA

SECD2613 System Analysis and Design

Section 03

Campus Resource Management System (health canter and attendance system) Phase 1

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https://github.com/KhaledT5/cpp_project1_SAD_20232024.git

“Automated MC Submission For UTM”

-In today's tech-savvy world, there's a lot we can do to make our daily tasks easier and more efficient. One area that could really benefit from some innovation is the process of submitting medical certificates (MC) at Universiti Teknologi Malaysia (UTM). Right now, if a student needs to submit an MC, they have to take a photo of the slip, send it to their lecturer on Telegram, and then wait for approval. This can be quite a hassle and often leads to delays and mistakes.

-To make this process smoother, we're proposing a new system that directly connects the health facility that issues the MCs with the lecturers at UTM. With this automated system, as soon as a student gets an MC from the health facility, it would be instantly and securely sent to their lecturers. This way, there's no need for the student to manually submit the MC or wait for approval. Lecturers will have immediate access to the medical records and can easily verify and consider them when reviewing attendance and grades.

-This new approach aims to save time, reduce errors, and make life easier for both students and lecturers. By embracing digital solutions, we can create a more efficient and responsive academic environment that better supports everyone's needs.

-The Problem Statement:

- **Current Inefficiencies:**
  - The existing process for submitting medical certificates (MC) at Universiti Teknologi Malaysia (UTM) involves manual steps.
  - Students must take photos of their MC slips and send them via Telegram to their lecturers.
  - This method is time-consuming and can result in lost or mismanaged documents.
- **Delays and Errors:**
  - The manual submission and approval process causes delays in updating attendance records.
  - There is a high potential for errors in the manual handling of MC slips.
- **Need for Automation:**
  - There is a need to implement an automated system that links the health facility directly with UTM lecturers.
  - This system would ensure immediate, secure, and error-free submission and verification of MC slips.

Proposed Solution:

1. **System Integration:**
    1. Develop an integrated platform that connects the health facility's system with UTM’s academic system.
    2. Ensure secure and encrypted data transmission to protect student privacy and comply with data protection regulations.
2. **Automated Submission:**
    1. Upon issuance, the health facility will automatically send the MC slip to the relevant lecturer’s record.
    2. Students will no longer need to manually photograph and submit their MC slips.
3. **Real-Time Verification:**
    1. Lecturers will have instant access to the MC slips through the integrated system.
    2. The system will facilitate real-time verification, allowing lecturers to update attendance and grades promptly.

- **Benefits:**

1.Efficiency:

- Streamlines the submission process, saving time for both students and lecturers.
- Reduces administrative burdens by eliminating the need for manual handling and approval.

2.**Accuracy:**

- Minimizes errors associated with manual submissions.
- Ensures that all MC slips are securely and correctly recorded.

3.Convenience:

- Provides a hassle-free experience for students who need to submit MC slips.
- Lecturers can easily access and verify MC slips within the academic system.

Scope of the project…….

The project scope for this scenario would focus on developing an automated system for submitting medical certificates (MCs) at Universiti Teknologi Malaysia (UTM). Here's a breakdown of the key elements:

Project functionalities:

- Secure connection between authorized health facilities and UTM's system.
- Automatic transfer of MC data upon issuance to a student.
- Delivery of MC information to relevant lecturers for each student.
- User interface for lecturers to access and verify MC data.

Project exclusions:

- Development of the MC issuance system within health facilities.
- Modifications to existing UTM student record system (unless necessary for integration).
- Addressing potential MC validity disputes (may require separate process).

Additional considerations:

- Data security and student privacy protocols.
- Seamless integration with existing UTM systems.
- Development of a fallback option for manual MC submissions (optional).

This scope outlines the core functionalities of the system, while acknowledging external systems and potential future improvements.

OBJECTIVES……

The objectives of the proposed project for an automated medical certificate (MC) submission system at Universiti Teknologi Malaysia (UTM) are:

- **Increase efficiency:** Automate the MC submission process, eliminating the need for students to take photos, send emails, and wait for approvals. This saves time for both students and lecturers.
- **Reduce errors:** Eliminate manual submissions which can lead to mistakes like sending incorrect files or delays in receiving MCs.
- **Improve accuracy:** Ensure accurate and secure transfer of MC data directly from authorized health facilities to lecturers.
- **Enhance accessibility:** Provide lecturers with immediate access to verified MC data, allowing them to make informed decisions regarding attendance and grades.
- **Streamline communication:** Create a clear and direct communication channel between health facilities, students, and lecturers regarding MCs.

- **Promote student well-being:** By simplifying the MC submission process, students are encouraged to seek proper medical attention when needed, potentially impacting their overall well-being.

By achieving these objectives, the project aims to create a more efficient, reliable, and user-friendly system for managing MC submissions at UTM. This will benefit the entire university community by reducing administrative burdens and promoting a more supportive learning environment.

Feasibility Studies

Operational Feasibility:

We determined that there's enough human resources that are available to operate the system once it has been installed. As there's enough staff of lecturers and technicians in the computing faculty to operate the system. Furthermore, we don't think that the users of this system will reject the idea of it as it will greatly benefit them.

Technical Feasibility:

As for the technical feasibility we know that UTM already has a good infrastructure of servers and databases that don't need immediate upgrading, also this system isn't that big to build as it will only link two existing systems together.

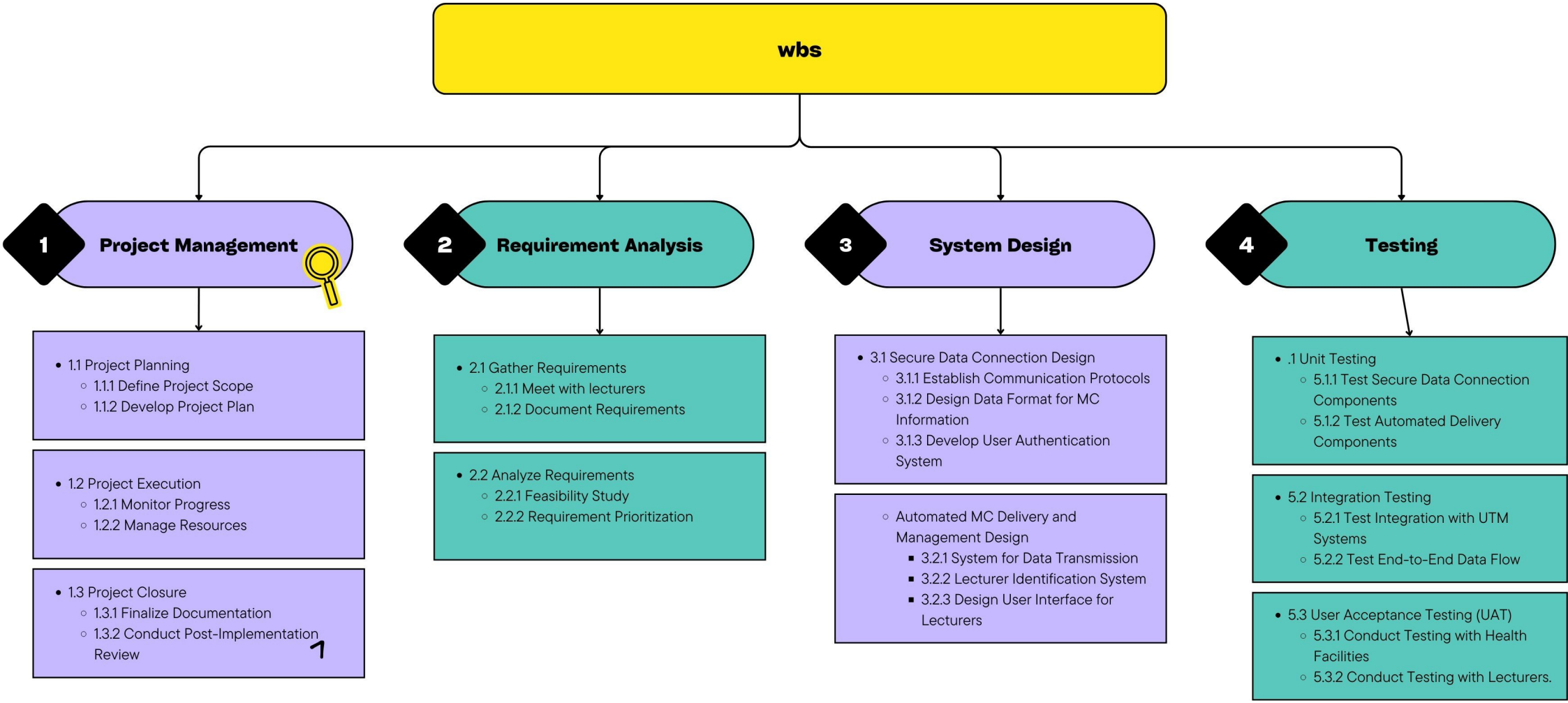
Economic Feasibility:

As you will see in the CBA this system almost doesn't have any tangible benefits, it's mostly intangible benefits. The only tangible benefit that's worth mentioning is reducing errors or mistakes. On the other hand, this system has a lot of intangible benefits for example: it provides better service to the community, better decision making for the user (the lecturers or the one who is responsible attendance) therefore there won't be any doubt that the slip is official and leads to speed up the process of verifying attendance.

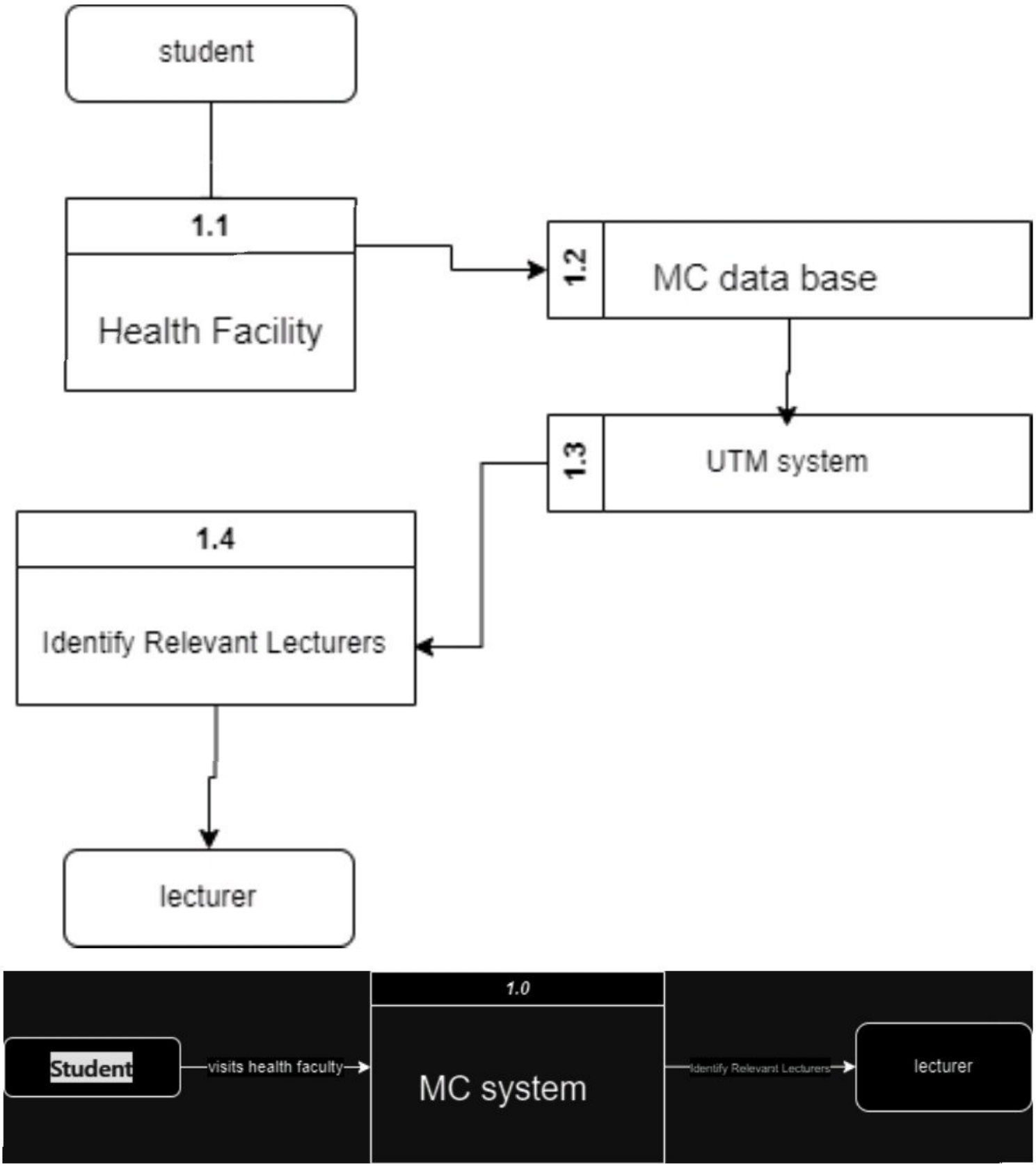
COSTS		Year 0	Year 1	Year 2	Year 3	Year 4
Development Cost (One-time)						
Software	5000	**5500**				
Consultant	2000	**2200**				
Total (Development Cost)		**7700**				
Production Cost						
			0	0	0	0
IS Support	2000		2200	2354	2519	2695
Maintenance	1500		1650	1766	1889	2021
Annual Production Costs			**3850**	**4120**	**4408**	**4716**
(PRESENT VALUE)			**3500**	**3405**	**3312**	**3221**
ACCUMULATED COSTS			**11200**	**14605**	**17916**	**21138**

BENEFITS		Year 0	Year 1	Year 2	Year 3	Year 4
Inventory Savings	0	0	0	0	0	0
(PRESENT VALUE)			**0**	**0**	**0**	**0**
ACCUMULATED BENEFITS			0	0	0	0
GAIN OR LOSS			-11200	-14605	-17916	-21138
PROFITABLE INDEX		**-2.74514**				

Although this project won't produce any financial gains and is not recommended according to this CBA study the users will benefit greatly from it.


wbs
1
Project Management
2
Requirement Analysis
3
System Design
4
Testing
• 1.1 Project Planning
○ 1.1.1 Define Project Scope
○ 1.1.2 Develop Project Plan
• 1.2 Project Execution
○ 1.2.1 Monitor Progress
○ 1.2.2 Manage Resources
• 1.3 Project Closure
○ 1.3.1 Finalize Documentation
○ 1.3.2 Conduct Post-Implementation Review
• 2.1 Gather Requirements
○ 2.1.1 Meet with lecturers
○ 2.1.2 Document Requirements
• 2.2 Analyze Requirements
○ 2.2.1 Feasibility Study
○ 2.2.2 Requirement Prioritization
• 3.1 Secure Data Connection Design
○ 3.1.1 Establish Communication Protocols
○ 3.1.2 Design Data Format for MC Information
○ 3.1.3 Develop User Authentication System
○ Automated MC Delivery and Management Design
▪ 3.2.1 System for Data Transmission
▪ 3.2.2 Lecturer Identification System
▪ 3.2.3 Design User Interface for Lecturers
• .1 Unit Testing
○ 5.1.1 Test Secure Data Connection Components
○ 5.1.2 Test Automated Delivery Components
• 5.2 Integration Testing
○ 5.2.1 Test Integration with UTM Systems
○ 5.2.2 Test End-to-End Data Flow
• 5.3 User Acceptance Testing (UAT)
○ 5.3.1 Conduct Testing with Health Facilities
○ 5.3.2 Conduct Testing with Lecturers.

Task Name	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Project Planning and Requirements Gathering												
System Design and Architecture												
Development of Backend System												
Development of Frontend Interface												
Integration and Testing												
User Acceptance Testing												
Training and Documentation												
Implementation and Deployment												
Monitoring and Evaluation												


student
1.1
Health Facility
1.2
MC data base
1.3
UTM system
1.4
Identify Relevant Lecturers
lecturer
Student
visits health faculty
1.0
MC system
Identify Relevant Lecturers
lecturer