American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

PROJECT TITLE: MedVerify: An AI-Powered Medicine Authentication & Verification System

A Software Engineering Project Submitted
By

Semester: Summer_21_22		**Section:**	**Group Number:**	
SN	Student Name	Student ID	Contribution (CO3+CO4)	Individual Marks
1	Shoriful Islam	23-50357-1		
2	Ridwan Alvi	23-51953-2		
3	Riasad Choudhury	22-49093-3		

The project will be Evaluated for the following Course Outcomes

CO3: *Select* appropriate software engineering models, project management roles and their associated skills for the complex software engineering project and evaluate the sustainability of developed software, taking into consideration the societal and environmental aspects	Total Marks	
Appropriate Process Model Selection and Argumentation with Evidence	[5 Marks]	
Evidence of Argumentation regarding process model selection	[5Marks]	
Analysis the impact of societal, health, safety, legal and cultural issues	[5Marks]	
Submission, Defense, Completeness, Spelling, grammar and Organization of the Project report	[5Marks]	
CO4: *Develop* project management plan to manage software engineering projects following the principles of engineering management and economic decision process	Total Marks	
Develop the project plan, its components of the proposed software products	[5Marks]	
Identify all the activities/tasks related to project management and categorize them within the WBS structure. Perform detailed effort estimation correspond with the WBS and schedule the activities with resources	[5Marks]	

Identify all the potential risks in your project and prioritize them to overcome these risk factors.	[5Marks]	

Description of Student's Contribution in the Project work

Student Name: Shoriful Islam Student ID: 23-50357-1 Contribution in Percentage (%): Contribution in the Project: ▪ Contribution Description 1 ▪ Contribution Description 2 _____Shoriful_____ Signature of the Student
Student Name: Ridwan Alvi Student ID: 23-51953-2 Contribution in Percentage (%): Contribution in the Project: ▪ Contribution Description 1 ▪ Contribution Description 2 _____Ridwan Alvi_____ Signature of the Student
Student Name:Riasad Choudhury Student ID: 22-49093-3 Contribution in Percentage (%): Contribution in the Project: ▪ Contribution Description 1 ▪ Contribution Description 2 _____Riasad Choudhury_____ Signature of the Student
Student Name: Student ID: Contribution in Percentage (%): Contribution in the Project: ▪ Contribution Description 1 ▪ Contribution Description 2

_____ Signature of the Student
Student Name: Student ID: Contribution in Percentage (%): Contribution in the Project: ▪ Contribution Description 1 ▪ Contribution Description 2 _____ Signature of the Student

1. PROJECT PROPOSAL

Project Title
MedVerify: An AI-Powered Healthcare Safety & Service Optimization Platform

Slogan: *Trust Before Treatment*

1.1 Background to the Problem

In a country like Bangladesh, where access to verified healthcare services is limited and misinformation is rampant, patients often face critical issues including receiving treatment from unlicensed doctors, being prescribed counterfeit medications, and being unaware of the best available nearby hospitals or diagnostics. Despite the advancements in technology, the healthcare service system still struggles with fragmented data, unstandardized processes, and a lack of real-time verification mechanisms.

Root causes include:

- Lack of verified directories for doctors and hospitals
- Easy circulation of fake medicine in the supply chain
- Insufficient public awareness in medical decision-making
- Limited technological support for health emergencies
- Poor digitization of test reporting systems

These issues not only compromise patient safety and trust but also burden the national health system, leading to increased mortality, delayed treatment, and financial exploitation. Therefore, a robust, scalable, and intelligent digital health platform is essential to ensure trust, transparency, and timely access to care.

1.2 Solution to the Problem

Project Objective:
To build an AI-powered platform—**MedVerify**—that empowers patients to verify doctors, medicines, hospitals, and diagnostics in real-time, while enabling smart health decisions, emergency responses, and digital health record management.

Key Functional Modules of MedVerify:

1. **Real Doctor Verification:**
   Validate doctor licenses directly through BMDC API and identify fake prescriptions using AI-powered OCR and document anomaly detection.
2. **Medicine Authentication System:**
   QR/barcode scanning to verify drug identity, expiry, and manufacturer. Also includes a fallback visual recognition model and manual entry support for offline or unlabelled medications.
3. **Geo-Based Hospital & Doctor Finder:**
   Find verified healthcare providers based on user location with filters like cleanliness, ICU availability, female doctors, mental health support, and budget.
4. **Smart Symptom-Based Suggestion Engine:**
   AI suggests appropriate department, doctor, and nearby hospitals based on symptoms and user profile (age, gender, location).
5. **Appointment & Token Booking System:**
   Seamlessly book doctor appointments with live token management and emergency priority support including SMS notifications.
6. **Trusted Pharmacy & Lab Locator:**
   Locate verified pharmacies and diagnostic centers through crowd-based ratings and medicine authenticity assurance.
7. **Emergency Button (SOS Health Card):**
   One-tap access to emergency services including health card view (blood group, allergies), offline alert system, and nearest hospital routing.
8. **Health Dashboard & Family Profile:**
   Secure cloud storage for medical records, prescriptions, reminders, vitals monitoring (sugar, BP, allergies), and health tracking for all family members.

9. **SmartReport Delivery System:**
   Doctors' prescribed tests are directly linked with diagnostic labs. Once the test is done, reports are uploaded by labs and patients get secure digital access in real time. Critical values are flagged by AI.

Rubric for Project Assessment (CO3)

Criteria	Marks distribution (Max 3X5= 15)				Acquired Marks
	Inadequate (1-2)	Satisfactory (3)	Good (4)	Excellent (5)	
Selection of Software Engineering Models	Does not articulate a position or argument of choosing appropriate model. Does not present any evidence to support the arguments for the choice of the model	Articulates a position or argument for choosing models that is unfocused or ambiguous. Presents incomplete/vague evidence to support argument for model choice	Articulates a position or argument of choosing models that is limited in scope. Does not present enough evidence to support the argument for the choice of the model	Clearly articulates a position or argument for the choosing software engineering models. Presents sufficient amount of evidence to support argument for the model selection	
Role identification and Responsibility Allocation	The project has poor project management plans for identifying roles and assigning the responsibilities	Identify few roles in the project management where some of the roles are left alone with any project responsibilities	Identify most of the roles in the project management and assign their responsibilities	Well planned project with proper role identification and responsibility allocation in the project management activities	
Impact identification					
Formatting and Submission	Project report is not complete and Several errors in spelling and grammar. Present a Confusing	Some errors in spelling and grammar. Some problems	Few errors in spelling and grammar. Presents most of the details in	Project report is complete and No errors in spelling and grammar. Consistently	

	organization of concepts, supporting arguments, and real-life example. Sentences rambling, and details are repeated.	of organizing the answer in a logical order of defining, elaborating, and providing real-life examples.	a logical flow of organization in definition, details, and example.	presents a logical and effective organization of definition, details, and real-life example of the topic.	
				Acquired marks:	
				CO Pass / Fail:	

Rubric for Project Assessment (CO4)

Marking Criteria	Marks Distribution (Maximum 3X5=15)				Acquired Marks
	Inadequate (1-2)	**Satisfactory (3)**	**Good (4)**	**Excellent (5)**	
Project Planning	No background information regarding the project is given; project goals and benefits are missing.	Insufficient background information is given; project goals and benefits are poorly stated	Sufficient background information is given; the purpose and goals of the project are explained.	Thorough and relevant background information is given; project goals are clear and easy to identify.	
Effort Estimation and Scheduling	Student vaguely discuss the impact of societal, health, safety, legal and cultural issues in their project	Student provided with partial relevance to the impact of societal, health, safety, legal and cultural issues in their project	Student fairly provided the analysis to the impact of societal, health, safety, legal and cultural issues in their project	Student comprehensively provided the analysis to the impact of societal, health, safety, legal and cultural issues in their project	
Risk Management	Ambiguous representative example.	Partially identify / indicate towards real-life example.	Real-life example is fairly connected towards the definition.	Comprehensively defend with real life example.	
				Acquired Marks:	
				CO Pass / Fail:	