



American International University-Bangladesh (AIUB)

**Faculty of Science and Technology (FST)
Department of Computer Science (CS)**

SDPM Group Project, Spring 2023

**Project Title: CIVIC CARE
Section: A**

Submitted by

Name	ID
SADIA AFRIN SARA	20-41834-1
MD. ALINUR HOSSAIN	20-41855-1
MD. JIDAN RAHMAN	20-41860-1
SAAD MUHAMMOD BIJOY	20-41880-1

1.0 Introduction: This project plan documents provide a comprehensive overview of a Medicare software system. This document outlines the plan objective and requirement of the project. The intention of this document is to provide a clear understanding of the project's scope, objective, resources and deliverables. The document also serves as a reference for identifying potential risks. The audience of this document includes the Project team, Stakeholders and anyone else involved in the project success. Project team includes the project manager, developers, testers, business analysts and other technical experts. The Objective of this document is to provide a clear and concise project plan that outlines the projects goals, objective and deliverables. It aims to establish a common understanding among all stakeholders of the project's requirements, timeline, risks.

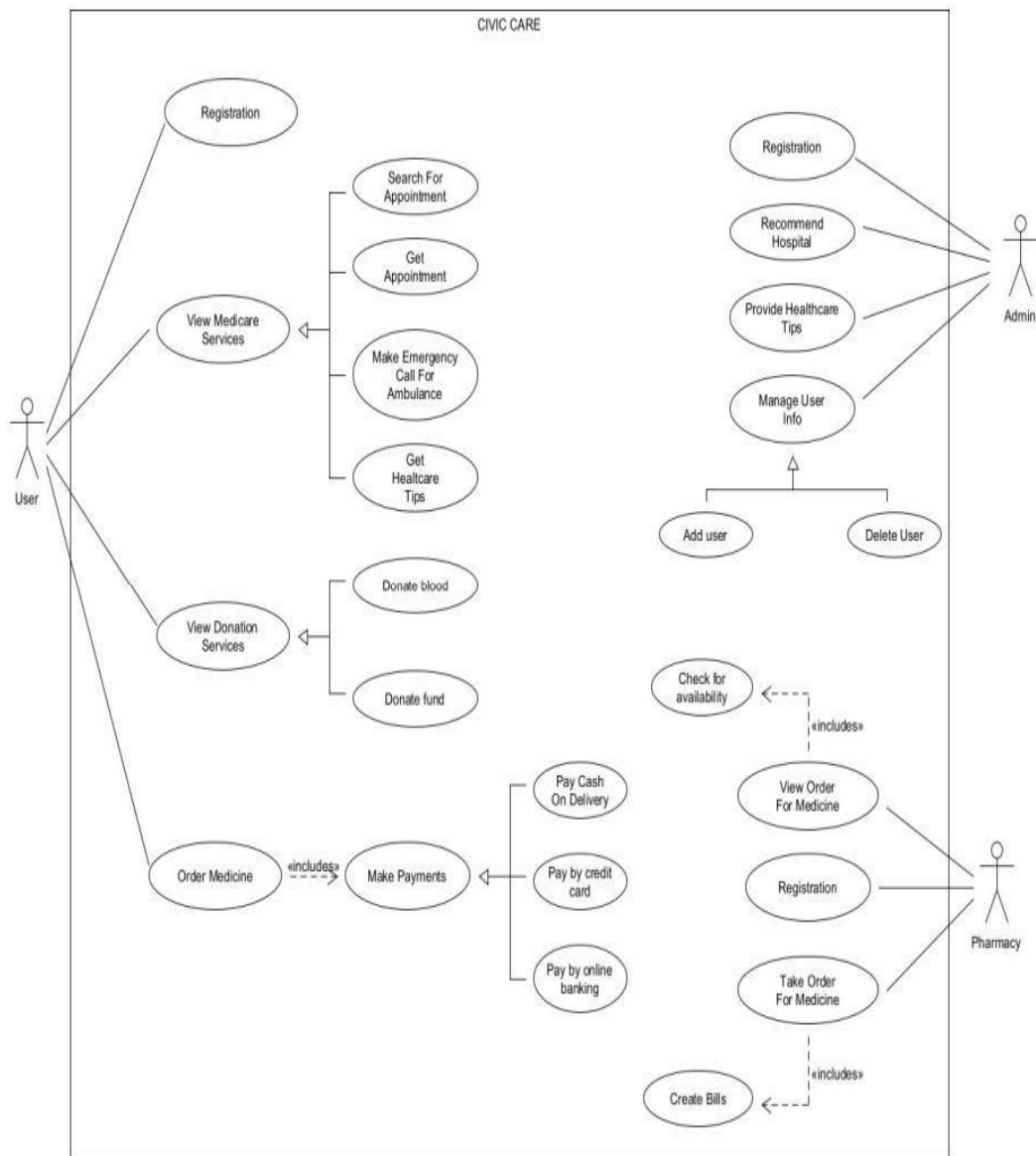
2.0 Project Title: The project title of this system is "CIVIC CARE".

3.0 Objectives: The objectives of Civic Care may vary depending on the specific goals and priorities of the healthcare system and the community it serves. However, some common objectives of Civic Care can include improving healthcare access, providing healthcare education and information, responding to emergencies, encouraging blood donation, and enhancing healthcare system efficiency and effectiveness. Ultimately, Civic Care aims to offer high-quality, accessible, and affordable healthcare services to its users.

4.0 Justification: The purpose of the Civic Care medical system is to provide users with convenient access to healthcare services, resources, and information. By offering features such as appointment scheduling with doctors, medication orders through e-pharmacies, healthcare tips through the app, emergency ambulance services, and appointment scheduling for blood donation, the Civic Care system aims to improve healthcare access, promote health education, and respond efficiently to medical emergencies. The ultimate goal is to enhance the quality and effectiveness of healthcare delivery and make healthcare services more accessible and convenient for everyone.

The Civic Care medical system can be beneficial for a diverse range of individuals, including patients facing obstacles to accessing healthcare, seniors who may require assistance with appointment scheduling and medication orders, people with chronic health conditions, those requiring emergency medical attention, and blood donation centers and hospitals. Essentially, anyone in need of healthcare services, resources, or information can potentially benefit from the Civic Care medical system.

5.0 Systems Overview:



6.0 Stakeholders analysis: There are several stakeholders involved in the development and implementation of a Civic Care medical system. These stakeholders include:

Users: The primary stakeholders are the users of the system, including patients, healthcare providers, and blood donation centers. The system should be designed to meet their needs, provide quality healthcare services, and enhance their experience.

Healthcare Providers: Doctors, nurses, and other healthcare providers are key stakeholders in the Civic Care system. The system should support their work, enabling them to provide efficient and effective medical care to patients.

E-pharmacy Providers: E-pharmacy providers are stakeholders who are involved in the online sale and distribution of medications. They are crucial to the success of the system as they provide an efficient means for patients to order medication.

Emergency Services: Emergency services providers such as ambulance services are stakeholders in the Civic Care system as they provide critical medical assistance to patients in emergency situations.

Blood Donation Centers and Hospitals: Blood donation centers and hospitals are stakeholders in the system as they rely on the system to schedule blood donations and ensure a steady supply of blood for medical procedures.

Government and Regulatory Bodies: Government and regulatory bodies are also stakeholders in the system as they play a role in overseeing and regulating the healthcare industry.

Investors: Investors are stakeholders in the system as they provide financial support for the development and growth of the system.

Overall, the success of the Civic Care system depends on the cooperation and collaboration of these stakeholders, each of whom plays a critical role in the system's development, implementation, and sustainability.

7.0 Feasibility study: The development of a Civic Care medical system requires both technical and financial feasibility.

Technical Feasibility: From a technical perspective, the Civic Care system requires a robust technological infrastructure to support its various features, such as appointment scheduling, e-pharmacies, healthcare tips, ambulance services, and blood donation appointments. The system must be developed for multiple platforms, integrate with various back-end systems, and require cloud-based infrastructure to ensure scalability, availability, and security. Compliance with healthcare regulations is necessary to ensure patient data security and privacy. Integrating with third-party services such as hospitals, clinics, pharmacies, and emergency service providers is also essential, requiring API integrations and data exchange agreements. Additionally, the system needs to be user-friendly, with a simple interface that enables users to easily navigate and access the features they need.

Financial Feasibility: From a financial perspective, the development of a Civic Care medical system requires significant funding to cover the costs associated with designing, building, and maintaining the system. Additionally, costs such as server maintenance, data storage, software development, and staffing must be taken into account. The system can generate revenue through various means, such as charging fees for medical consultations, e-pharmacy orders, ambulance services, and blood donation appointments, excluding emergency services. Alternatively, the system can be financed through government funding, grants, or through private investors. Financial feasibility also depends on the size of the target market, the competition, and the pricing strategy.

Overall, the development of a Civic Care medical system is both technically and financially feasible, given the availability of resources and the potential market demand. Careful planning and execution are crucial to ensure the successful development, launch, and sustainability of such a system.

8.0 Systems component: The Civic Care medical system can have several components that work together to deliver healthcare services to users. Some of the key system components can include:

User Interface: A user interface is a key component of the system that enables users to access and interact with the various features of the system. It should be designed to be user-friendly and easy to navigate.

Appointment Scheduling System: This component of the system enables users to schedule appointments with doctors or other healthcare providers. The system should be designed to be flexible, enabling users to choose the date and time that is convenient for them.

E-Pharmacy System: The e-pharmacy system is a key component of the system that enables users to order medication online. The system should be secure and reliable, ensuring that users receive their medication in a timely and efficient manner.

Healthcare Tips and Information: The system can include a component that provides users with healthcare tips, information, and resources. This can include information on healthy living, diet, exercise, and disease prevention.

Emergency Services: The system can include a component that provides users with emergency services, such as ambulance services, in case of a medical emergency.

Blood Donation Appointments: The system can also have a component that enables users to schedule appointments for blood donation, ensuring a steady supply of blood for medical procedures.

Data Management System: The data management system is a critical component of the system that manages user data, medical records, appointment schedules, and other important information. It should be designed to be secure, reliable, and compliant with relevant data privacy regulations.

9.0 Process Model to be followed: There are several process models that can be followed to build the Civic Care medical system. One such model is the Agile development model, which is an iterative and incremental approach to software development. The Agile development model is well-suited to building a complex system like the Civic Care medical system, as it allows for continuous improvement and iteration based on user feedback. This model ensures that the system is built efficiently and effectively, and that it meets the needs of its users.

10. Efforts estimation: Based on the system components, we need at least 3 programmers to finish the complete system within 8 months.

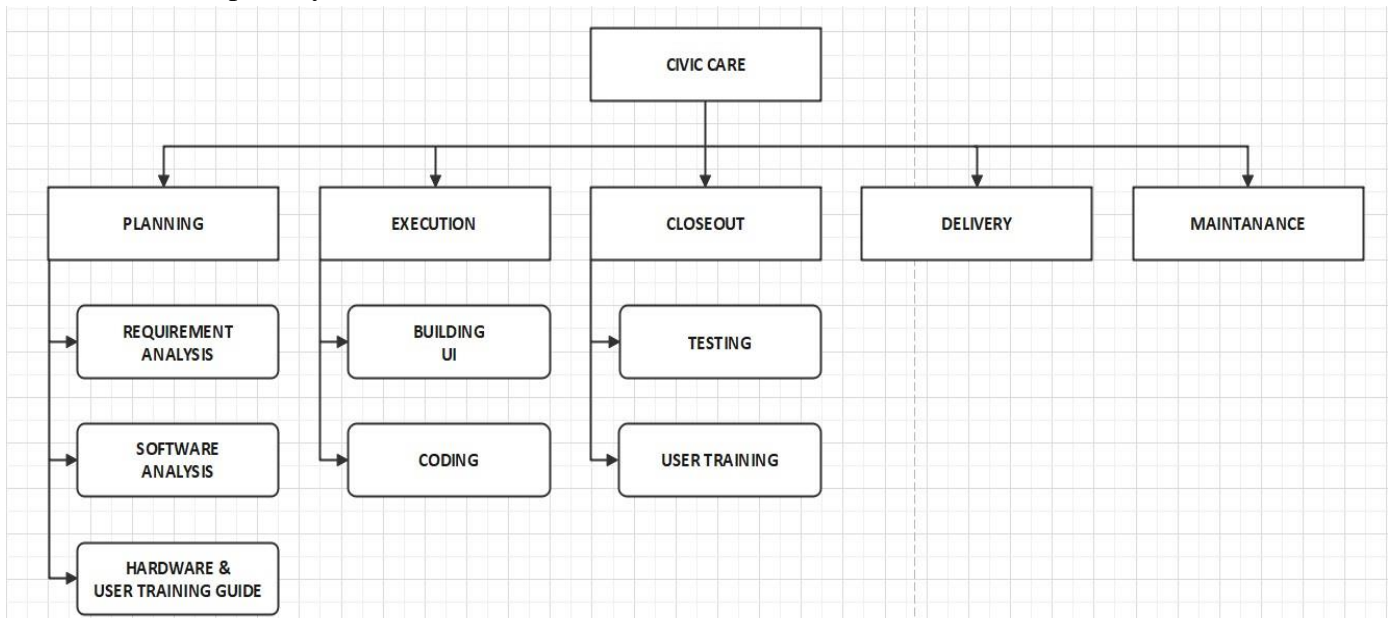


Figure: Work Breakdown Structure (WBS) of CIVIC CARE

11. Activity Network Diagram:

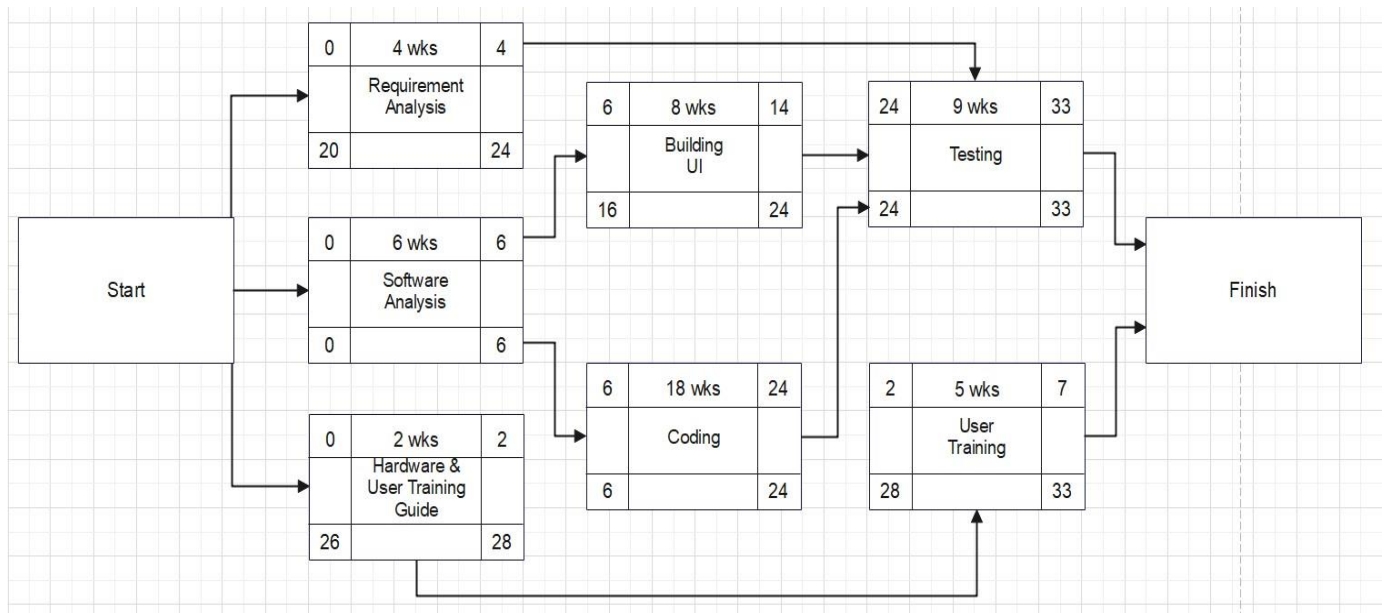


Figure: Activity Precedence Network Diagram

12.0 Risk Analysis: Risk analysis is an important step in the development of any software system, including the Civic Care medical system. The project may face different risks that could potentially impact its success. These risks include technical risks such as system bugs, performance issues, and delays in development, security risks such as unauthorized access and data breaches, resource risks such as a shortage of resources or loss of key personnel, regulatory risks such as non-compliance with healthcare and privacy regulations, adoption risks such as low user engagement, and infrastructure risks such as network failures and power outages. To mitigate these risks, the development team should take measures such as conducting thorough testing and research, implementing robust security protocols, establishing contingency plans, and maintaining regular communication with stakeholders.

Risks	Category	Probability	Impact	RMMM
System bugs	TE	30%	3	
Unauthorized access	BU	5%	2	
Data breaches	BU	40%	1	
Shortage of resources	DE	20%	3	
Higher rate of user management	PS	60%	2	
Network failures	TE	2%	1	
Lack of training tools	DE	80%	2	
Change in requirements by customers	PS	80%	2	
Improper maintenance	ST	30%	1	

Figure: Risk Table for CIVIC CARE

N.B: Impact Values

1. Catastrophic
2. Critical
3. Marginal
4. Negligible

Risk Probability = 80% (Most Likely)

Risk Impact: There are 7 components to be developed from scratch. Let, the average components are 200 LOC and local data indicate that the software engineering cost for each LOC is 500 Tk. So, the overall cost to develop the components could be $7 \times 200 \times 500 = 700,000$

Risk Exposure = Probability x Cost

$$= 0.80 \times 700,000 \text{ Tk.}$$

$$= 560,000 \text{ Tk.}$$

13. Required resource:

Some of the key resources that are typically required to complete this software project is given below:

1. Project Management: A project manager is responsible for planning, organizing, and managing the project resources to ensure that the project is completed on time, within budget, and to the required quality standards.

2. Development Team: A development team consisting of software developers, testers, and designers are required to design, develop, test, and deploy the software product.

3. Hardware and Software Infrastructure: This includes the hardware and software infrastructure required to support the development, testing, and deployment of the software. This may include computers, servers, software tools, and other equipment required to support the development and testing of the software.

4. Requirements and Design Documentation: Documentation is required to capture the software requirements and design specifications. This can include project plans, user requirements documents, functional specifications, and technical design documents.

5. Communication and Collaboration Tools: Effective communication and collaboration tools are essential to support communication among project team members, stakeholders, and customers. This can include email, chat, video conferencing, and other collaboration tools.

6. Training and Support: Once the software product is developed, training and support resources are required to help users learn how to use the software and to provide ongoing support to users.

7. Quality Assurance and Testing: Quality assurance and testing resources are required to ensure that the software product meets the required quality standards and is free from defects.

14.0 Budget for the project:

Constructive Cost Model:

Project type	: Organic
Coefficient<effort factor>	: 2.40 [P=1.05, T=0.38]
SLOC	: 7700 Lines
Person Months	: $(2.40 * 7.71.05) = 20.47$
Dev. time, DM	: $(2.50 * 20.470.38) = 7.87 = 8 \text{ Months} = 1408 \text{ WH}$
Required People, ST	: $\text{PM/DM} = 20.47/7.87 = 2.60 = 3$

Budgeting:

Developer Salary in 8 months:

Per Developer salary Per working Hour = 550 Tk.

Total Developer salary= $550 \times 1408 = 774,400$ Tk.

PM's Salary in 8 months: 1,00,000 Tk.

Requirement Analysis:

Time Needed: 1 month (22 working days= 176 working Hour)

Req Analysis Person's Hourly wage =300 Tk.

Total Req Analysis expense = $300 \times 176 = 52,800$ Tk.

Transportation Cost Estimation:8,500 Tk.

Training & Hardware Expense Estimation:92,000 Tk.

Rent Expense:

Room per Month = 10,500 Tk.

Total in 8 Months = 84,000 Tk.

Total Utilities in 8 Months (including miscellaneous):12,000 Tk.

Maintenance (Till 6 Months after Delivery):

Expense per Hour: 1000 Tk.

Total Estimated Time needed for Maintenance 60 Hours

Total Estimated Maintenance Expense = $60 \times 1000 = 60,000$ Tk.

Total Estimated Expense:

$774,400 + 52,800 + 8,500 + 92,000 + 84,000 + 12,000 + 60,000 + 1,00,000 = 1,183,700$ Tk.

Profit:

20% of Total Estimated Expense = $1,183,700 \times 20\% = 236,740$ Tk.

Project Budget: $1,183,700 + 236,740 = 1,420,440$ Tk.

15.0 Conclusion: After conducting extensive research and analysis, we have developed a comprehensive project document for the Medicare software system. Our proposed software solution aims to streamline the Medicare system, making it more efficient and user-friendly for both patients and healthcare providers. We have also identified potential risks and challenges associated with the implementation of this software system. Overall, we believe that the implementation of the Medicare software system will greatly improve the quality of care for patients and increase the efficiency of healthcare providers. We recommend that the project be pursued with careful consideration of the identified risks and challenges, and with a focus on thorough training and support for all stakeholders involved.