

American International University-Bangladesh (AIUB)  
**Department of Computer Science  
Faculty of Science &Technology (FST)**

**Advanced Medicare System**

A Software Engineering Project Submitted

By

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| --- | --- | --- | --- | --- |
| **Semester: Spring\_21\_22** | | **Section: F** | **Group Number: 02** | |
| SN | Student Name | Student ID | Contribution (CO1+CO2+CO3) | Individual Marks |
| 17 | Sheikh Muhtasim Nasif | 20-42119-1 |  |  |
| 20 | Mysara Nur Tanha | 20-42261-1 |  |  |
| 21 | Tanima Islam | 20-42278-1 |  |  |
| 22 | Nabil Mohammed | 20-42299-1 |  |  |
| 23 | Md Salim Sadman | 20-42303-1 |  |  |

The project will be Evaluated for the following Course Outcomes

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| --- | --- |
| CO1:*Analyze* the impact of software engineering models over various context of software development to assess societal, health, safety, legal and cultural issues. | Total Marks |
|  |
| Project Background Analysisand feasibility (needs, goal, benefits, etc.)[5Marks] |  |
| Analysis the impact of societal, health, safety, legal and cultural issues [5Marks] |  |
| Existing Studies and Relevant Example[5Marks] |  |
| CO2: *Choose* appropriate software engineering model in a software development environment | Total Marks |
|  |
| Appropriate Process Model Selection and Argumentation with Evidence [5Marks] |  |
| Evidence of Argumentation regarding process model selection [5Marks] |  |
| Completeness, Spelling, grammar and Organization of the Project report[5Marks] |  |
| CO3: *Explain* the software project management roles and their skills in context of professional engineering practice and solutions to complex engineering problems | Total Marks |
|  |
| Project Role identification [5Marks] |  |
| Project Responsibilities descriptions [5Marks] |  |
| Submission and Defense the Project [5Marks] |  |

Description of Student’s Contribution in the Project work

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| Student Name: Sheikh Muhtasim Nasif  Student ID: 20-42119-1  Contribution in Percentage (%): 20%  Contribution in the Project:   * Project topics idea * Project model discussion and selection * Logical analysis of the using specific model and project role identification   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Signature of the Student |
| Student Name: Mysara Nur Tanha  Student ID: 20-42261-1  Contribution in Percentage (%): 20%  Contribution in the Project:   * Project topics idea * Background discussion and problem findings * Find out several apps related to our project and compare their functionalities   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Signature of the Student |
| Student Name: Tanima Islam  Student ID: 20-42278-1  Contribution in Percentage (%): 20%  Contribution in the Project:   * Project topics idea * Solution of our problem background * Joint study of several apps backtracks and solution of their issues using our project   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Signature of the Student |
| Student Name: Nabil Mohammed  Student ID: 20-42299-1  Contribution in Percentage (%): 20%  Contribution in the Project:   * Project topics idea * Narrate the project background problems   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Signature of the Student |
| Student Name: Md Salim Sadman  Student ID: 20-42303-1  Contribution in Percentage (%): 20%  Contribution in the Project:   * Project topics idea * All the roles and responsibility identification * All model analysis and finding the drawbacks of all models   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Signature of the Student |

# PROJECT PROPOSAL

## Background to the Problem

Our project is about the advanced healthcare system of Bangladesh. In the present COVID-19 situation, many of the patients are unable to consult doctors, even some are afraid to go to hospitals. Many of the COVID patients are unable to test due to the unavailability of the testing equipment in their respective areas. In our country, highly qualified doctors usually don't want to live in rural areas. As a result, our rural people don't get proper healthcare. In our country, people often use different medicine for treatment. Also, some diseases are not curable by the regular use of medicine. Even in today's era, the rate of mother and child death is extremely high. It is because they do not get proper treatment or advice. In teenage, kids have to go through physical and mental change and often feel shy to share any kind of problems with their parents or family members. Due to visa issues, sometimes foreign people face difficulty treating them during emergencies causing the worst injury situation or sometimes fatal occurrence. Our country is still not advanced in medical science. Elderly people often get issues remembering the medicine schedule and the appointment list. Sometimes, in a fatal accident, blood transfer often becomes a life-saving matter. In the hospital, brokers often harassed the patients near one for the blood issue and takes unnecessary money as a change.

**1.2 Solution Of this Problem**

As our medical science is as not as advanced, it is considered to get a proper solution for the software which may not be provided by other medicine software. The solutions are as follows:

This project will enable the door-to-door service during this global pandemic situation by giving all nursing facilities. We will introduce telemedicine services so that rural people can also consult highly qualified doctors via video call. We will allow the people to choose their medicine type (Ayurvedic, Homeopathic, Yunani, allopathic) according to their preference as there is no perfect software for the individual medicine type so far. To reduce the mortal rate of mother and infant, the software has its system to help the mother and infant in a critical situation and warn the hospital about the upcoming emergency. It will also provide child care for newborn babies and also help children to get vaccinated. We will provide a 24/7 helpline for teenagers to consult about their physical and mental problems. Also, we will provide a helpline for women to consult about their physical problems. During an international medical transfer, the software will register international patients to get rid of problems they might face during visa registration. During any emergency at any time, if a person wants to get medical assistance or medicine, the system will track and provide a list of the nearest medical center to provide medicine. There is much more action for the people to ensure the proper visit to the doctor by getting a notification in just a blink of an eye. The blood bank has a dark side business to harass the patient's relative during an emergency, but the software will ensure that anti-black market during blood transfer issue.

**2. SOFTWARE DEVELOPMENT LIFE CYCLE**

## 2.1 Process Model

The model we are going to use is Saw Tooth Model. Sawtooth model. They are a linear model in a predictive environment. A Predictive environment is such an environment where we have a clear idea about our end product. Also, the final functionality is known. There will be no update during development. The linear model is used because we will finish each step entirely and then move on to the next phase. The reason behind choosing this environment is we know the requirements fully. In a health application, the requirements are already known, because they are mostly basic needs for every user in this software. And real-life medical issues are often seen in various apps. Now, the linear model is we don't need to update frequently as well as show our best performance after finishing each step. The specialty of the Saw-tooth model over others is we will provide a prototype after each step to be verified by the client. Which ensures the client's choice first. Waterfall and V model doesn't have such a function to test it. V model just compiles but still it doesn't ensure the client's satisfaction. Again, no other linear model makes ensure the prototype before the first step, but Saw-tooth can. Again, collaboration with doctors, patients, pharmacists, and many more is a must for this software, so we need to send a prototype to each party for satisfaction, which is only possible in a linear model through this. Other models may be slightly rigid but Saw-tooth models are simple and easy to work. As this model doesn't need a domain expert or need to work in a place where each programmer can communicate and follow the single coding rules, it just needs some requirements and all the previous work done. And we don't need to worry about a frequent change in the development, that's why we prefer this model to be the best for our development.

## 2.2 Project Role Identification and Responsibilities

Pathologist: collect covid samples

Doctor: provide telemedicine service

Nurse: nursing

Pregnant lady: get healthcare service, get advice

Infant: get healthcare service, get vaccine

Teenagers: get advice

Customer service representative: give advice, help to contact doctor, help to solve visa issues

Old people: get notifications about medicine schedule and appointment list

Blood donor: donate blood

Blood donee: take blood

## Rubric for Project Assessment (CO1)

|  |  |  |  |  |  |
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| Marking Criteria | Marks Distribution (Maximum 3X5=15) | | | | Acquired Marks |
| **Inadequate (1-2)** | **Satisfactory (3)** | **Good (4)** | **Excellent (5)** |
|  |  |  |  |  |  |
| Background  Analysis | 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. |  |
| Analysis the impact of societal, health, safety, legal and cultural issues | 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 |  |
| Existing Studies and Relevant Example | 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: | | | | |  |

## Rubric for Project Assessment (CO2)

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| Criteria | Marks distribution (Max 3X5= 15) | | | | Acquired  Marks |
| **Inadequate (1-2)** | **Satisfactory (3)** | **Good (4)** | **Excellent (5)** |
|  |  |  |  |  |  |
| Argumentation of Model selection | Does not articulate a position or argument of choosing appropriate model | Articulates a position or argument for choosing models that is unfocused or ambiguous | Articulates a position or argument of choosing models that is incomplete or limited in scope | Clearly articulates a position or argument for the choosing software engineering models |  |
| Evidence of Argumentation | Does not present any evidence to support the arguments for the choice of the model | Presents incomplete/vague evidence to support argument for model choice | Does not present enough evidence to support the argument for the choice of the model | Presents sufficient amount of evidence to support argument for the model selection |  |
| Completeness, Spelling, grammar and Organization of the Project report | Project report is not complete and Several errors in spelling and grammar. Present a Confusing organization of concepts, supporting  arguments, and  real-life example.  Sentences rambling, and details are repeated | Some errors in spelling and grammar. Some problems  of organizing the answer in a logical order of defining,  elaborating, and providing real-life examples | Few errors in spelling and grammar. Presents most of the details in a logical flow of  organization in  definition,  details, and  example | Project report is complete and No errors in spelling and grammar. Consistently  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 (CO3)

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| Criteria | Marks distribution (Max 3X5= 15) | | | | Acquired  Marks |
| **Inadequate  (1-2)** | **Satisfactory (3)** | **Good (4)** | **Excellent (5)** |
| Role identification | Does not identify any roles in the project management activities | Identify few roles in the project management | Identify most of the roles in the project management | Identify all of the roles in the project management activities |  |
| Responsibility Allocation | The project has poor project management plans for assigning the responsibilities | Some of the roles are left alone with any project responsibilities | Few of the roles are left alone with any project responsibilities | Well planned project with proper resource allocation |  |
| Viva | Unable to answer the basic questions and lack of knowledge regarding software engineering concepts and overall project knowledge | Have little understanding of the software engineering concepts and overall project knowledge | Have fair understanding of the software engineering concepts and overall project knowledge | Have clear understanding of the software engineering concepts and overall project knowledge |  |
| Acquired marks: | | | | |  |
| CO Pass / Fail: | | | | |  |