North East University Bangladesh

Department of Computer Science and Engineering

Your Project Title Goes Here

By

Your Name here	Your Name here
Reg. No: 990903020099	Reg. No: 990903020099
4th year 2nd semester	4th year 2nd semester

Supervised By

Supervisor's Name goes here

Designation

Department of Computer Science and Engineering

14th May 2022

Your Project Title Goes Here

A project work submitted to the Department of Computer Science and Engineering, North East University Bangladesh, for partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering

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14th May 2022

Qualification Form of BSc(Engg) Degree

Student Name :

Project Title :

This is to certify that the project work is submitted by the student(s) named above in May 2022. It is qualified and approved by the following persons and committee.

Head of the Dept.	**Supervisor**
Name	Supervisor Name
Designation	Designation
Department of CSE	Department of CSE
North East University Bangladesh	North East University Bangladesh

Project Description

This project description should act as a summary of your project. In here you will describe what project you have done; what benefits does this project provides; what features does this project have etc. Write everything as a single paragraph. (Formatting Instruction: Write in one page with the font "Times New Roman" and font size 11px, with line space 1.5. Every paragraph will be followed by a line break.)

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CHAPTER 1

INTRODUCTION

Write an introductory paragraph here. (Formatting Instruction: Write your introduction section in "Times New Roman" font with font size 11px. Text must have the justified alignment. Every paragraph will be followed by a line break).

1.1.   Project Motivation and Target User Groups

First paragraph: Write why did you choose this project.

Second paragraph: Write who will use this project. How will they be benefitted using your project.

(Formatting Instruction: Subsections are numbered as given above and included as a second level of text. Subsection heading has the font "Times New Roman" with a font size of 14px and before indenting of 22pt and after indenting of 11pt. Sub section body text has the font "Times New Roman" font with font size 11px. Text must have the justified alignment. Every paragraph will be followed by a line break).

1.2.   Similar Products and their features

Write an introductory paragraph first. In this section you will create several subsections, each outlining one product and its features.

1.2.1. Similar Product 1

Write description of this product in a single paragraph. (Formatting Instruction: Sub-subsections are numbered as given above and included as a third level of text. Sub-subsection heading has the font "Times New Roman" with a font size of 12px and before indenting of 16px and after indenting of 12px. Sub-subsection body text has the font "Times New Roman" font with font size 11px. Text must have the justified alignment.).

1.2.2. Similar Product 2

You can also use photographs of some products if you like. An example of how you can add screenshots of similar products is given below:

Figure 1: A sample Wikipedia page

Formatting figures: The width of the figure must be no more than 3 inches (to set figure size, select the figure and go to Picture Format menu, in the size group set the width to 3.

To add captions in an image: Select the figure, go to the References menu, choose "Insert Caption", from label select "Figure", from position select "Below selected item". The figure will be inserted as Figure 1. Then you can enter the figure name after the text. To update list of figures after you have inserted each of these, go to the "List of Figures" page of this document. Right click on the figure list, select "Update Field".

1.2.3. Similar Product 3

If you have more similar products, add them here.

1.2.4. Similar Product 4

If you have more similar products, add them here.

1.3. Features of our product as Requirements:

In this section include both functional and non-functional requirements of your product.

1.3.1. Functional Requirement:

Write all functional requirements as a list.

1.3.2. Non-functional Requirement:

Write all non-functional requirements as a list.

Note that, we have a separate chapter for requirement analysis. However, you should include a summary of product requirements in the introduction chapter itself.

CHAPTER 2
REQUIREMENT ANALYSIS

Write an introductory paragraph here. Formatting for all chapters is same.

2.1. User Roles

Write user roles by mentioning both user types and user description. Remember to account for all types of users, including even those who may use your website occasionally. Simply writing two user roles such as "User" and "Admin" will never be accepted. A template (and example) for creating user roles is given below (for an online restaurant website):

Table 1: User Roles Table

User Type	User Description
Come-and-Go Customer	Wants to order food once and done. They do not want to register; all they want is to visit the website, order food, provide their address, select preferred payment method and done.
Registered Customer	Individual customer who orders foods regularly. Their address and preferred payment methods are saved in their account and can be updated. They also can provide food rating and write food reviews. Occasionally they gets offers of discounts or free meals etc.
Offices	Some offices (for example NEUB CSE) orders foods every week for more than one person. Such users should know what the current offers are, which platters are currently in highest sale, if they qualify for any discounts etc.
Institutions	Institutions are different than office in that, an institution generally orders in bulk for some of their events. They should be able to order food for a later date and they should also be able to specify some fixed time for food delivery. They also review food, but their review is not public rather in private mode.

	Such reviews should also get replied by the admin and may start a conversation between the admin and the institution.
Website Moderator	A moderator can add/edit/delete/update food items, platters, offers. He should also be able to set a discount to offices or institutions. He also initiates communication with institutions.
Report Viewer	A super admin who wants to know daily, weekly, monthly sale, which items are unavailable and so on.

Formatting Tables: The width of the table must be maximum 75% of the document (to set this size, right click on the table, select "Table Properties", go to the "Table" tab. On the size group, set "Preferred Width" to 75, "Measure In" to percent. Finally, center align the table).

To add captions to a table: Select the table, go to the References menu, choose "Insert Caption", from label select "Table", from position select "Above selected item". The caption will be inserted as Table 1. Then you can enter the table name after the text. To update list of tables after you have inserted each of these, go to the "List of Tables" page of this document. Right click on the list, select "Update Field".

2.2. Product Backlog Items:

Write product backlog items as several user-stories (remember that user-stories are what user wants to do with the website). For each user-story, create a card. The card will have two faces – front face and back face. Front face will contain user-story, estimation, priority and optionally annotation. Back face will contain acceptance tests (observe carefully how acceptance tests were designed in the below template). The template you will use to create your user-stories is the following:

A registered customer can rate food items or platters. Annotation: star rating, 1-star – 5star. Estimation: 4 Priority: 5	1) Test with no rating (pass), 1-star rating (pass) and 5-start rating (pass). 2) Try rating before logging in (fail). 3) Try hitting the rating button immediately after hitting the logout button (fail).

A registered customer can rate food items or platters. Annotation: star rating, 1-star − 5star. Estimation: 4 Priority: 5	1) Test with no rating (pass), 1-star rating (pass) and 5-start rating (pass). 2) Try rating before logging in (fail). 3) Try hitting the rating button immediately after hitting the logout button (fail).

Remember to keep at least one line space between two user stories.

A registered customer can rate food items or platters. Annotation: star rating, 1-star − 5star. Estimation: 4 Priority: 5	1) Test with no rating (pass), 1-star rating (pass) and 5-start rating (pass). 2) Try rating before logging in (fail). 3) Try hitting the rating button immediately after hitting the logout button (fail).

Formatting Story Card: These story cards were also created using tables, but do not add captions to these. To create these cards, go to "Insert table", select Table > Insert Table. Number of Columns = 2, Number of Rows = 1. Now you need to adjust the size of the table. To do this, right click on the table, select "Table Properties". Select "Table" tab. Click on the "Preferred Width" checkmark, use 75% and use "Measure in: Percent". Also select alignment "Center", text wrapping "None". Now again select the whole table (not any single row or column) and right click on the table; select "Distribute Columns Evenly".

CHAPTER 3
PLANNING

Write an introductory paragraph here.

3.1. Scrum Increments

In total, you will create 4 Scrum increments to be presented respectively in – 4th year 2nd semester pre-presentation, 4th year 2nd semester final presentation, 4th year 3rd semester pre-presentation, 4th year 3rd semester final presentation.

3.1.1. Scrum Increment #1

Modify the below table:

Table 2: Scrum Increment #1

User Story	Responsible Member
A come-and-go customer should be able to place an order.	Abdullah
An order for a come-and-go customer should be completed within 90 seconds (constraint).	Abdur Rahman
A come-and-go customer should get a tracking number to know status of his ordered item.	Abdur Rahman
A registered customer can create his profile.	Abdur Rahman
A registered customer can update his information.	Abdullah
A registered customer can order platters from top sales list or recent items list.	Abdullah
A registered customer can enter a certain amount and see what food packages available in that price range.	Abdur Rahman
A registered customer can his previous order history.	Abdullah
A registered customer can rate food items or platters.	Both

A registered customer can provide written review for a single food or each item of a platter that he ordered before.	Both
The list goes on……………………..	……

3.1.2. Scrum Increment #2

Modify the below table:

Table 3: Scrum Increment #2

User Story	Responsible Member
A come-and-go customer should be able to place an order.	Abdullah

3.1.3. Scrum Increment #3

Modify the below table:

Table 4: Scrum Increment #3

User Story	Responsible Member
A come-and-go customer should be able to place an order.	Abdullah

3.1.4. Scrum Increment #4

Modify the below table:

Table 5: Scrum Increment #4

User Story	Responsible Member
A come-and-go customer should be able to place an order.	Abdullah

Each table here was created following similar structures with other tables of this document (75% size, center aligned).

3.2.   Sprint Backlog Items:

Write sprint backlogs only for those user-stories which will be done jointly between both
members. If there is no joint work in your project, then you can skip this section altogether. A
simple format for writing sprint backlogs is given below. If your sprint time is more than 4
days, then add columns to the right of the table.

Table 6: Sprint Backlog for Food Rating

Online Restaurant – **Sprint 5**							
Sprint Days: **July 18 – July 21**							
				Hours of Work Remaining			
Product Backlog	**Tasks**	**Task Owner**	**Initial Estimate**	**Day 1**	**Day 2**	**Day 3**	**Day 4**
A registered customer can rate food items or platters.	Design business logic	Abdullah	1	1	0	0	0
	Talk with Mr. Chowdhury	Abdur Rahman	1	1	0	0	0
	Design the UI and Implement the Front end	Abdullah	2	2	1	0	0
	Implement the Back end	Abdur Rahman	3	3	3	2	1
	Automate Unit test	Abdullah	2	2	2	2	1
	Automate Integration Test	Abdur Rahman	2	2	2	2	1
	Write Documentation	Abdullah	1	1	1	1	1
		Total	12	12	9	7	4
Another Story (If several stories are handled in one sprint backlog)		Tasks	Same	…	…	…	…

There could be multiple sprint backlogs in your project. For each sprint backlog, create a table like the above.

To add captions to a table: Select the table, go to the References menu, choose "Insert Caption", from label select "Table", from position select "Above selected item". The caption will be inserted as Table 1. Then you can enter the table name after the text. To update list of tables after you have inserted each of these, go to the "List of Tables" page of this document. Right click on the list, select "Update Field".

CHAPTER 4
MODELING AND DESIGN

Write an introductory paragraph here. For all diagrams in this section, use the UML notation.

4.1.   The Entity Relationship Diagram

Draw your ERD here. Drawing ERD is a mandatory part of your project.

4.2.   Class Diagrams

Your project may have 40-50 unique tasks. However, drawing class diagrams for all tasks would be very difficult for you. Therefore, pick 5 most important task of your project. To pick tasks, take guidelines and approval from your supervisor. For each of these tasks, show their respective class diagrams.

Another important thing you should keep in mind. For any project, there are two types of class diagrams. The first type comes from Forward Engineering, which means creating class diagrams before starting to code. The second type comes from Backward Engineering, which means creating class diagrams after coding is finished. In your 4th year 2nd semester, all your class diagrams should be forward engineering sketches that gives you (and us) an overall idea of how you are going to code your solution. In your 4th year 3rd semester (final term), all your class diagrams should be backward engineering blueprints that precisely describes how you coded each of the mentioned tasks.

Writing class diagrams is a mandatory part of the report.

4.3.   Sequence Diagrams or CRC Cards

Write either sequence diagrams or CRC cards here. Change the title accordingly. Find most important and interesting scenarios from use-cases of your project and use these scenarios to draw sequence diagrams of create tables of CRC cards. If you want, you can write your use-case diagrams here first and then write sequence diagrams or CRC cards.

Writing sequence diagrams is a mandatory part of the report.

4.4. State Diagrams

Write state diagrams when one (or more) class(es) of your project has complex life-cycle behavior. If your project does not have these types of classes, then you can skip this section.

4.5. Activity Diagrams

If your project has some very complex algorithms somewhere, then use activity diagram to explain that algorithm graphically. If your project does not have these types of algorithms, then you can skip this section.

4.6. Other Diagrams

If your project requires any other types of diagrams, then you can draw these here.

Writing any diagram other than entity relationship diagram, class diagrams and sequence diagrams is optional.

CHAPTER 5
CODING AND TESTING

Write an introductory paragraph here.

5.1. Project Screenshots with Explanation

This section will show all your project screenshots. For each screenshot explain what it does, how user gets there and what happens when a user interacts with these screens.

5.2. Testing:

This section explains your entire testing process. Create subsections for each type of testing and explain how you tested your codes in detail.

CHAPTER 6

CONCLUSION

You will write your conclusion here.

Here, we however give you some other relevant details regarding your project.

6.1. What should be done and When:

Here is a complete guideline outlining your responsibilities in each semester (each semester will have two terms – midterm and final):

Semester	Your Tasks
10th Sem – Midterm	• Prepare 3 project ideas in consultation with your supervisor. You cannot choose any project that has already been done before in the department. • Appear for the project acceptance presentation. The board will decide whether you can continue your presented project, or you would require switching to a new one.
1st Week of 11th Semester	• Submit this report file to the department with chapter-1, chapter-2 and chapter-3 completed except section 3.3-Sprint Backlog items. • This means, by the end of the semester, you must clearly define all your user stories (at least at the semi-epic level); broke these into increments; divide responsibilities of each member of the group and so on.
11th Sem – Midterm	• Complete your first increment and present it in front of your supervisor and the board. • Create a poster to explain your first increment. Instructions about writing this poster is explained in the section below. • During this state, some of your user-story may get divided into smaller ones; some may get changed;

	some new ones may get added. You do not need to submit your report file again during this time. However, prepare a document summarizing all the changes you have made during this period to your original proposal and submit this document to the department.
11th Sem – Final	• Complete your second increment and present it in front of your supervisor and the board. • Create a poster to explain your second increment. • Submit this report file again. This time, your report file should have all chapters completed. As for chapter-4 and chapter-5, you will include everything you have done in increment #1 and #2.
12th Sem – Midterm	• Complete your third increment and present it in front of your supervisor and the board. • Create a poster to explain your third increment. • You do not need to submit the report. However, submit a document that explains any changes you have made after the final presentation of your 11th semester. • This presentation will be considered as a pre-presentation to the final one. If your performance in the pre-presentation is unsatisfactory, then you will not be allowed to appear for the final presentation and your will receive an F grade in this work.
12th Sem – Final	• You can only appear for this presentation if you have passed your pre-presentation. • Complete your fourth increment and present it in front of your supervisor and the board. • Create a poster to explain your total project starting from the first to the fourth increment. • Submit this report file again. This is your final report submission. Chapters 1-3 may remain unchanged (or may change if you have changed your user stories). Major updates will be seen in

	chapter-4 and chapter-5. Include everything you have ever done from the first increment to the fourth increment here. Also write the chapter-6 conclusion now.

6.2. What should be included in the poster:

This is your guideline to write poster for your presentation:

Semester	Your Tasks
10th Sem – Midterm	• Instead of poster, you will present PowerPoint slides here. • One slide that explains everything about the project you want to do. For template, ask the department.
1st Week of 11th Semester	• No presentation. Only submit the report in both DOC format and PDF format.
11th Sem – Midterm	Poster Includes: • A very small project description (3-5 sentences). • Tools and Technologies to be used (only key technologies) • A table outlining all user-stories of your project. • Another table outlining which user-stories was completed before this presentation and by whom. • The Entity Relationship Diagram of the project. • Front-end and Back-end of the first increment including all testing performed.
11th Sem – Final	Poster Includes: • A table outlining which user-stories was completed before this presentation (both first and second increment) and by whom. Make sure you highlight second increment's part (you can colorize rows to highlight those). • All class diagrams and sequence diagrams/CRC cards. If you have included any other diagrams, then include these as well. Do not show ERD here. • Front-end and Back-end of the second increment

	including all testing performed.
12th Sem – Midterm	Poster Includes: • A table outlining which user-stories was completed before this presentation (First, second and third increment) and by whom. Make sure you highlight third increment's part (you can colorize rows to highlight those). • You do not need to show your ERD, class diagrams, sequence diagrams in this poster. • Front-end and Back-end of the third increment including all testing performed.
12th Sem – Final	Poster Includes: • Small project description with tools used (maximum 3-5 sentence). • A table outlining which user-stories was completed before this presentation (all increments) and by whom. Make sure you highlight fourth increment's part (you can colorize rows to highlight those). • Create four sections, each showing front-end, back-end and testing part of all four increments separately. This means, this poster has your complete project. • You do not need to add any other diagrams.

Dates for all presentations and all report submissions will be announced by the department in each semester. Follow the noticeboard or contact your supervisor to know these dates.

References

[1]   Use references only if you need one. Otherwise you can delete this section.