Advanced Portal System

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Background to the problem:

Different educational institutions are seen to have their own portal services to manage their academic work with the students. These applications are mostly seen in the private universities in Bangladesh. Now, the project team is planning to apply the same thing and conception in the schools and colleges and see whether it satisfies the need of the students and the teachers. The System needs to be designed in such a way that it may ensure the communications and necessary class works among them. Also, the users would be able to do their academic work at ease. Often it is seen that the students miss the class due to some circumstances and the teachers sometimes fail to communicate with the students under them if there is no class representative in the class. So, the academic work gets hampered. There should be a system where the assigned people can access and get benefitted with their academic work. So, if such system is provided in a class of not more than 50 students and the teachers who are assigned for different subjects, then both the students and the teachers can get up to date with all the works regarding the subjective studies and any student won't lag behind.

Solution to the problem:

Nowadays, the people are more affectionate towards technology. Almost everything is based on technology. The purpose of study should not be neglected if technology is at the user's hand. So, a web application may be developed to full fill the need of the students and the teachers of a college and see whether it makes a useful impact or not. The webpage will enable the teachers to upload notes and important notices to the students. The students may not be lagged behind in case of unwanted absence. Some more features can be added to benefit of the students and teachers. The colleges and deal with an IT farm to make them such software to solve their need. The farms can make a software similar to the plan which is documented in this project. The main focus of this project is to satisfy the demand of the students and teachers regarding study and communication purpose. The system may ensure various use of different features including notes uploading, online quiz, direct messaging among the teachers and the

students and among the students as well. Final result uploading and auto grade calculations after necessary input. The system is planned for having to different users of two different interfaces; as the user type “teacher” and user type “student”. Also, the teachers will not have to use an excel sheet rather the system may provide the name slot of the students for attendance in the interface of the user teacher. So, the objective is to ease the job of the teachers and helping the students to cope up. The developing farm and the college authority may look for further improvement and extensions of such system. There should be good amount of research to understand the need of the students and read their mentality of what they want to have for their academic.

SOLUTION DESCRIPTION:

System Features

The features of this web based software application is given below:

For user type Teacher -

1.Login to the system

2.Uploading the notes of the class in the system.

3.Sending messages to the students

4.Getting messages of the assigned students

5.Opening slots for online quizzes.

6.Auto evaluation for MCQ format quiz

7.Calculate the result and grade of the students

8.Show the marks of definite tests

9.Take attendance of the students

For user type students-

1.Login to the system.

2.Sending messages to the teachers and classmates.

3.Download note of the teachers.

4.Participate for online MCQ quiz.

5.Writing on script based descriptive quiz.

6.See the marks of definite exams

7.Participation of class task.

UML Diagrams

Use Case Diagram:

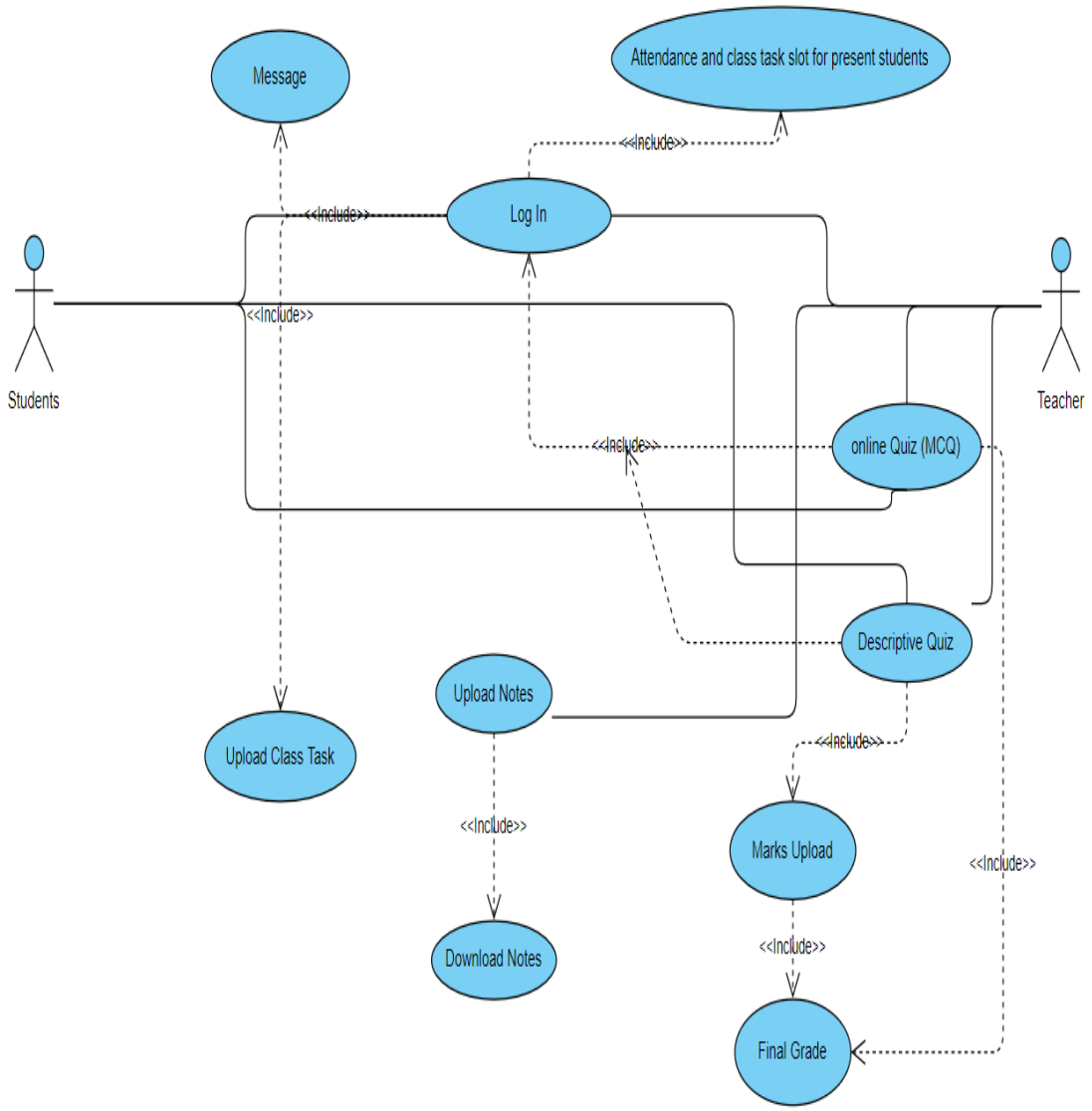


fig: Use case diagram of the system.

Activity diagram:

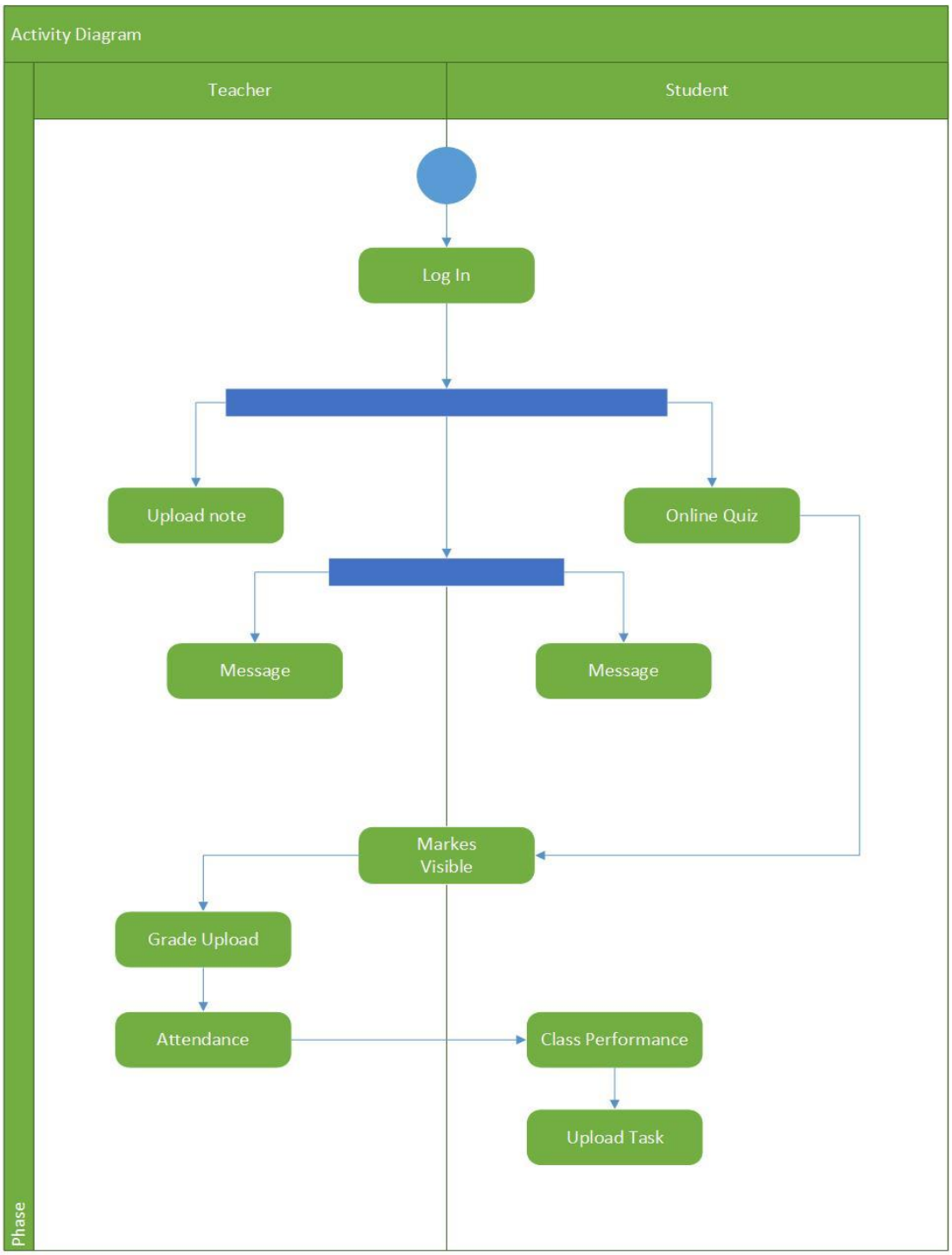


fig: Activity diagram with the users and work flow.

Class diagram:

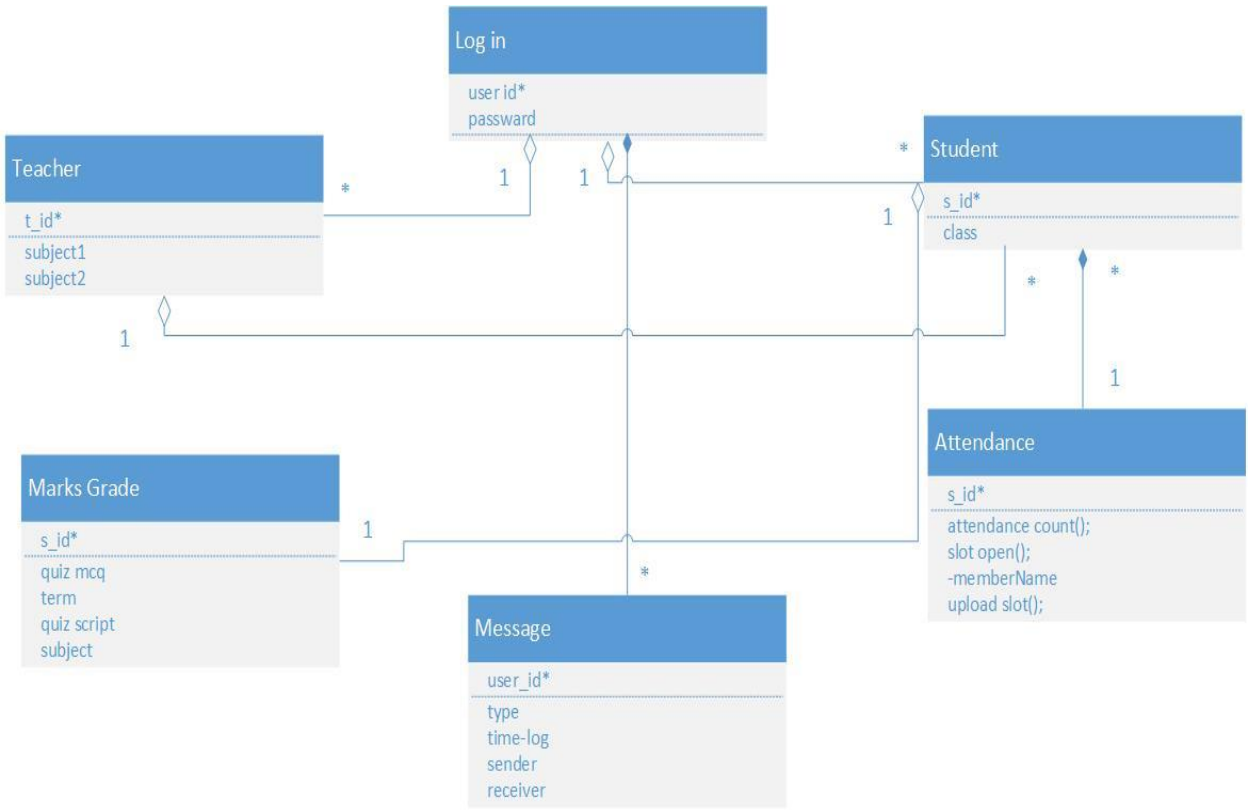


fig: Class diagram of the system.

ER Diagram:

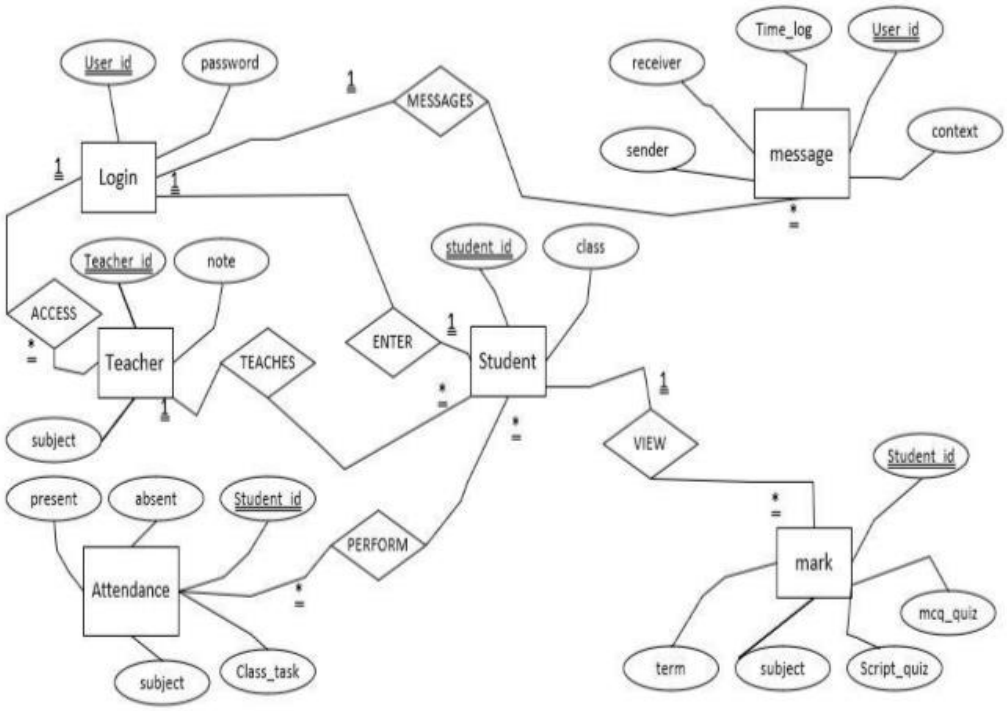


Fig: ER diagram of the system

Data Dictionary:

Table Name: Students

Attribute	Data Type	Is Null	Key
studentId	int	no	primary
studentName	nvarchar	no	
fatherName	nvarchar	no	
motherName	nvarchar	no	
dob	date	no	
religion	nvarchar	no	
bloodGroup	nvarchar	no	
presentAddress	nvarchar	no	
permanentAddress	nvarchar	no	
class	int	no	

gender	nvarchar	no	

Table Name: Teacher

Attribute	Data Type	Is Null	Key
teacherId	int	no	primary
teacherName	nvarchar	no	
subject	nvarchar	no	
dob	date	no	
religion	nvarchar	no	
bloodGroup	nvarchar	no	
presentAddress	nvarchar	no	
permanentAddress	nvarchar	no	
gender	nvarchar	no	

Table Name: Log in

Attribute	Data Type	Is Null	Key
userId	int	no	primary
password	nvarchar	no	
status	int	no	

Table Name: Message

Attribute	Data Type	Is Null	Key
userId	int	no	primary
sender	int	no	
Receiver	int	no	
context	nvarchar	no	
time	nvarchar	no	

Table Name: Attendance

Attribute	Data Type	Is Null	Key

studentId	int	no	primary
present	nvarchar	no	
Absent	nvarchar	no	
classTask	nvarchar	no	
subject	nvarchar	no	

Table Name: Mark

Attribute	Data Type	Is Null	Key
studentId	int	no	primary
term	nvarchar	no	
scriptQuiz	nvarchar	no	
mcqQuiz	nvarchar	no	
subject	nvarchar	no	

Social Impact:

The time frame in which computers and software have developed has barely been more than 75 years. Yet their impact on individual humans and on societies has been as important as the printing press, airplanes, television, automobiles. Here this software simple, flexible and powerful portal software for your educational institute, it's Free! Totally Free Software. No Installations Needed. No Hidden Costs. No Limits, Easy to Use. Services: online exam, attendance, messaging and many other features.

Development Plan:

Advanced portal deployment plan is essentially a task list that assigns resources to specific tasks and deliverables. The initial project plan provides important task-level information regarding the steps and order of implementation. We have a business goal of having users authenticate once and only once to be able to use web applications and data. Properly defined project scope is important for our project’s time management

and budgeting. When defining portal project's scope, we keep in mind the following demands and requirements that our organization might have:

1. Delivery of a portal solution to meet today's business objectives.
2. Best performance
3. High availability
4. Scalability
5. Straight-forward, easy deployment
6. No single point of failure
7. Delivery of the right capacity to meet future growth
8. Delivery of enough capacity to meet above normal peak
9. Easy migrations and upgrades to future releases
10. Fast and easy navigation
11. Properly placed calls to actions to turn users into leads
12. "About Us" section will make the users trust more
13. Contact information should be not only on a separate page but also in the header and footer. This guarantees that interested users will be able contact you for sure
14. The footer should also be useful. It may contain contact information, social network links, call to action, and the ability to change languages
15. A single font throughout all web pages and Signing up should be simple and fast

After defining project scope, we have to focused on the development processing steps. To control project development process, we build a development schedule where we add tasks and set deadlines. After setting the deadlines, we can count an approximate cost of the development. At this stage, we also outline the requirements for every element of the Advanced portal system. Requirement specifications should describe the layout, the content, supported browsers, authentication process, and so on. Summing up the first two stages, a written document is prepared to set responsibilities, costs, and deadlines.

Marketing Plan:

Every educational institution needs portal service to manage their academic work with the student. This kind of portal will able to fulfil their needs. In recent years almost everything is online based. This why every educational institution needs this type of web application.

Cost and Profit Analysis:

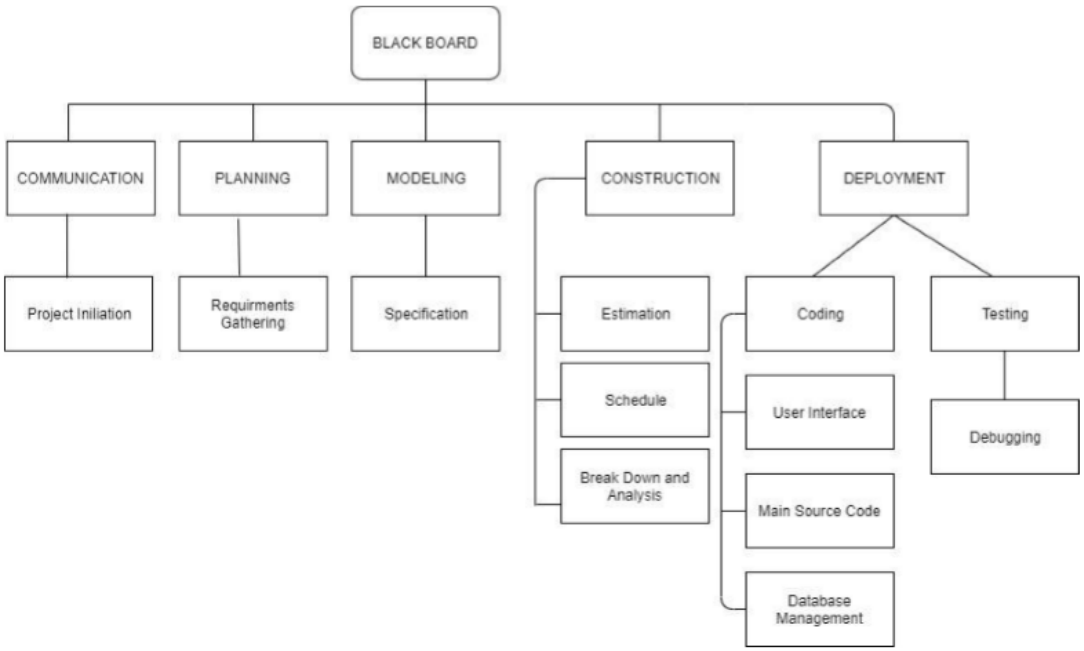
Customer Requirements:

The customer wants the software in 8 months.

Effort Estimation:

As the project does not have any historical data available and it contains unique characteristics, we have decided to follow bottom up approach of estimation. Bottom up approach follows basic WBS (work breakdown structure) where effort for each bottom level task is estimated. The broken estimated parts later will be added together to get a more descriptive overview of the effort needed for the project. WBS is basically followed in bottom up approach only.

Work Breakdown Structure:



Constructive Cost Model

S/W Project Type	Coefficient	P	T
Organic	2.4	1.05	0.38
Semi Detached	3.0	1.12	0.35
Embedded	3.6	1.20	0.32

Our project type is '**Organic**'.

Effort = PM = Coefficient<Effort Factor>*(SLOC/1000) ^P

Development time = DM = 2.50*(PM) ^T

Required number of people = ST = PM/DM

P = project complexity (1.04-1.24)

T = SLOC-dependent coefficient (0.32-0.38)

[100,000 SLOC/1000 = 100k SLOC]

Effort = PM = Coefficient<Effort Factor>*(SLOC/1000) ^P

= 2.4*(3000/1000) ^1.05

= 8 person-month

Development time = DM = 2.50*(PM) ^T

= 2.50*(8) ^0.38

= 5.5 months

= 24 weeks

Required number of people = ST = PM/DM

= 8 / 5.5

= 2 person

Estimation of Cost:

The estimated total Cost of our solution comes to **4, 00,000 BDT.** We estimate that the whole project can be completed within 5.5 Months (5.5 months for development + 1 months for testing).

Below is the list of the special fees for the project:

Front End programming: 80000

Strategic Planning & Project Management: 100000

Back End programming: 120000

Advanced Analysis and Advanced Programming: 100000

The estimated total Cost of our solution comes to **4, 00,000 BDT.**

Data backup and hosting charge will be 50000 taka per year

Profit Analysis:

According to 8 months of assumption the client was offer us around 6,00,000 BDT.

We assume that we can complete the software within 6 month. So we calculate our budget according to 5.5 months but from customer We want 8 months time .where as

Less amount of labor =8*2=16 Member.

Decrease computers =8 pc.

Final Profit = (Total Budget – Estimated Cost for Development)= (6,00,000-4,00,000) =2,00,000 BDT