American International University-Bangladesh (AIUB)

Faculty of Science &Technology (FST)

Department of Computer Science (CS)

SDPM Group Project, Summer 2022

PROJECT TITLE: SMART TOUR CORPORATION

SECTION: B

Group: 03

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1.0 Introduction: In this age of technological advancement, demand for internet service has reached unprecedented levels. Benefits of bringing process online is fully demonstrate in most of pandemic time. The advantage also applicable for Bangladesh Tourism industry. In this project, we will create a web-based platform that combines the services that travelers and business in the transportation industry want. The software may additionally have features such as distinct statistics on traveler destinations, managed by branch and location names. The data may also include places, distribution methods, practicable routes, public transportation, resort lodging etc. This information will give customers and visitors with a detailed outline as well as an estimated cost for travelling to the places of their choice. Then customers may can select their choice depending on their affordability. Again, the platform will allow travelers to interact with tour operators and small property owners. Also, travelers will able to get in touch with tour company and converse with travel companies and small landlords through this platform. Extreme programming or XP is the software development approach that will be involved for the project. Extreme programming can give the essential flexibility to deal with requirements changes.

2.0 Project Title: Smart Tour Corporation.

3.0 Objectives: Smart Tour Corporation is a web-based application that aims to combine the services desired by tourists as well as travel related business organizations. This application will be integrating features like information about places to travel to, classified by divisions and district names. This information can include pictures, ways to travel, possible routes to reach there, transportation and hotel facilities, possible budget requirements etc. This information will allow the customers and tourists to get a good overview as well as a cost estimation to travel to the destinations they are interested in. The users can then choose the route and book tickets, cars, or hotels based on their cost limits**.** The vision of this application is to be established as a trusted travel solution provider for travellers as well as travel-related business owners of Bangladesh. The mission of this platform is to provide traveling-related information and one-stop service for travellers and a platform for business owners to reach customers easily.

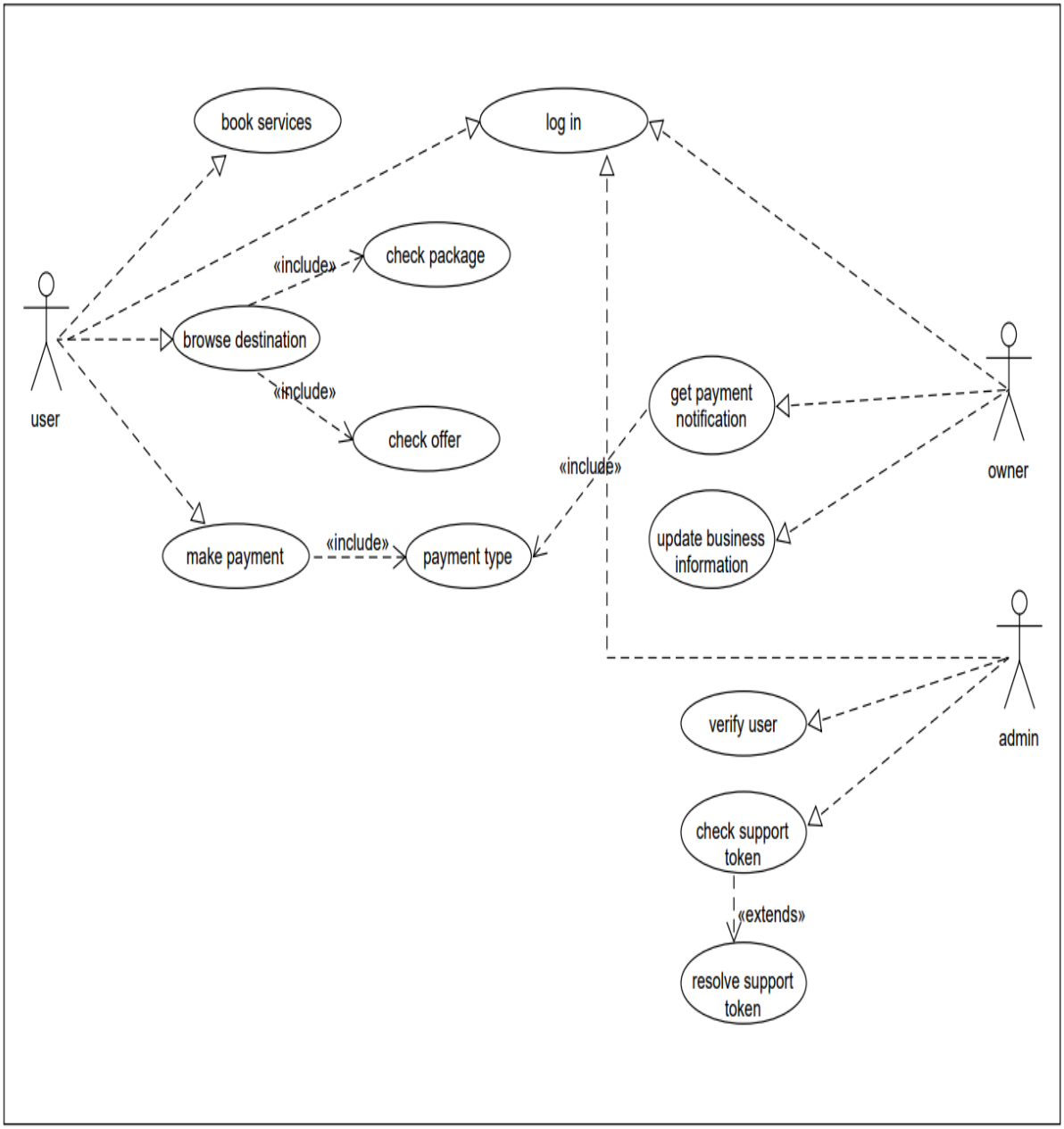
Our goal is to provide centralized information about all districts of Bangladesh. Providing travel-related services like transportation, ticket and hotel booking, etc. Also, business owners traveling who are related to this platform to reach their customers.

4.0 Justification: Tour Group Management is very beneficial for travel business because it is very helpful for customers and it work organized. It has more secured and payment system that is also easy use. The work is distributed systematically so that it helps the management team to reduce workload and this is fast working process. Our service remains open 24/7 so that at any time customer can book also customers can easily cancel their booking within given deadline.

Increases business credibility with the better user experience because it simplifies the booking and reservation processes. This system will provide to connect directly customers and agent through internet also provide facilities to modify and delete tourist’s data as well as client data. Our system will provide feedback mechanism for tourist also

provide Inbound and Outbound Tour packages. It will display attractive tourist places.
This system gives a variety of travel services that will sure to match all client's priorities. Our online tour management system helps to make strong relationship with customer so that they can enjoy that holiday of their dreams. This system will provide display platform in where a tourist can find their tour places according to their choices.

5.0 Use case diagram (System overview):



In this use case diagram, there are three actor user, owner and admin. There user has book services, make payment, browse destination use case. Again, payment has got payment notification and update business information user case. Next Admin has verified user and check support token user cases. We also see that all actor has unique use case that is log in. There are some include and extend relationship with some user cases.

6.0 Stakeholders analysis:

The projects will have different types of stakeholders. Primary and secondary stakeholders, internal and external stakeholders and so on. The project's stakeholders are classified as follows:

• Primary stakeholders:
1. Revenue-generating project investors
2. Project managers
3. Developers
4. Business Analysts
5. Customer
6. Testers and QA engineers
7. Tourists and Business Owners

• Secondary Stakeholders:
1. Government
2. Other employees of the company
3. External organizations using the platform for advertisement

• Internal to the Project Team:
1. Project managers
2. Developers
3. Business Analysts
4. Testers and QA engineers

• External to the Project Team but in the Same Organization:
1. Revenue-generating project investors
2. Other employees of the company
3. Information management team

• External to the Project and Organization:
1. Customers
2. Tourists and Business Owners
3. Contractors involved in the external works of the project

7.0 Feasibility study:

The project feasibility study will include both financial and technical feasibility. These are discussed below:

• Financial Feasibility: The project will begin as a web-based platform. This will result in initial hosting and domain fees in addition to development fees. The initial development cost will include maintenance and support expenses because the project will remain deployed. However, with effective marketing, the initial expenditure can be made to break even. Revenue will be generated by third-party adverts, percentages of commercial transactions, and tourist premium subscriptions. These will all cover the costs of support and maintenance. Because this will be Bangladesh's first aggregation platform for travel-related services, there will be less competition and the revenue will be sufficient to cover the initial investments. As a result of the preceding discussion, it is possible to conclude that the project is financially feasible.

• Technical Feasibility: The technologies required for development will be familiar to the developers because the project will be deployed on the web. HTML, CSS, and JavaScript are examples of such

technologies. Because react will be used as a framework for front-end development, only this technological knowledge will suffice. NodeJS will be used as the server runtime on the backend. These frameworks are all JavaScript-based. MongoDB, which is simple to scale as the project grows, will be used as the database. Therefore, the developers are highly familiar with all of the essential technologies for development purposes. These considerations lead to the conclusion that the project is technically viable.
So, since the project is financially and technically feasible, it is justifiable to claim that the project is feasible overall and that it can be started and successfully finished.

8.0 Systems Component:

In this application there will be Three types of users and they are,

- Tourist:
    - Tourist can browse information about different travel destinations.
    - Get benefit from different travel services.
    - Tourist may achieve to premium membership.

- Travel Business owner:
    - Chart and schedule business for the tourist.
    - Travel business owner have multiple business listed.

- Administrative team members:
    - They can verify validity of the business.
    - Access information about booking.
    - They can access business and user information when needed.

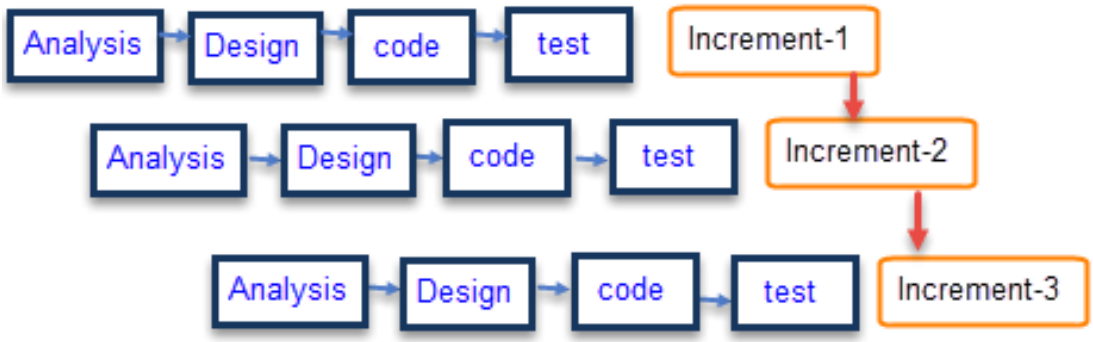
Again, in this system there have some features. They are:

- Suggest travel location based on popularity.
- Different travel service select option.

- Payment method selection.
- Show travel and booking history.
- Special offers and discounts.
- Premium membership subscription option.
- Search option based on districts and recent location.

9.0 Process Model:

In our smart tour corporation project, we follow incremental model. Incremental model divides the system functionality into small increments that are delivered one after other in quick succession. Most of the functionality is implemented in the initial increment.



Incremental Model

In our project we work with smart tour corporation and we need to fulfill customers requirements. Again, we need to continuously update our system and features. By the way we know that incremental model is good for project that have loosely-coupled parts and project with complete and clear requirements.
Therefore, we try to follow incremental model that helps our project very much and our project can meet the customer requirements.

10.0 Effort Estimation:

Using COCOMO II method:

Effort = PM=Coefficient$_{<\text{Effort Factor}>}$ *(SLOC/1000) ^P
=3*(90,000/1000) ^1.12
= 528 person months
Here,
SLOC (Source Line of Codes) = 90,000
Since, the project type is semi-detached so,
Coefficient<Effort Factor> = 3
Project complexity(P) = 1.12

DM = 2.50*(PM) ^T
= 2.50*528^0.35
= 22 months
Here,
PM = Person-months need for the project= 528 person months
T = 0. 35 (as the project is a Semi-detached project)

And, the required number of people
ST = PM/DM
= 528/22
= 24 peoples

Here,
PM = Person-months need for the project (Labour working hour) = 521 hours
DM = Development time = 22 hours

So, the total estimation of the project is:

- Required person months for completion of the project is 528
- For development the time required is 22 months
- Total number of people required is 24

11.0 Activity Diagram (Precedence network diagram):

Label	Activity Name	Precedence	Duration (weeks)
A	Project Planning	None	3
B	Requirement Gathering	A	4
C	Design Analysis	A	2
D	System Component Design	B, C	5
E	Page creation	D	4
F	UI/UX Design	D	8
G	Content Creation	D	4
H	Backend System Design	D	12
I	Testing and Production	E, F, G, H	2

Now we develop the precedence network diagram:

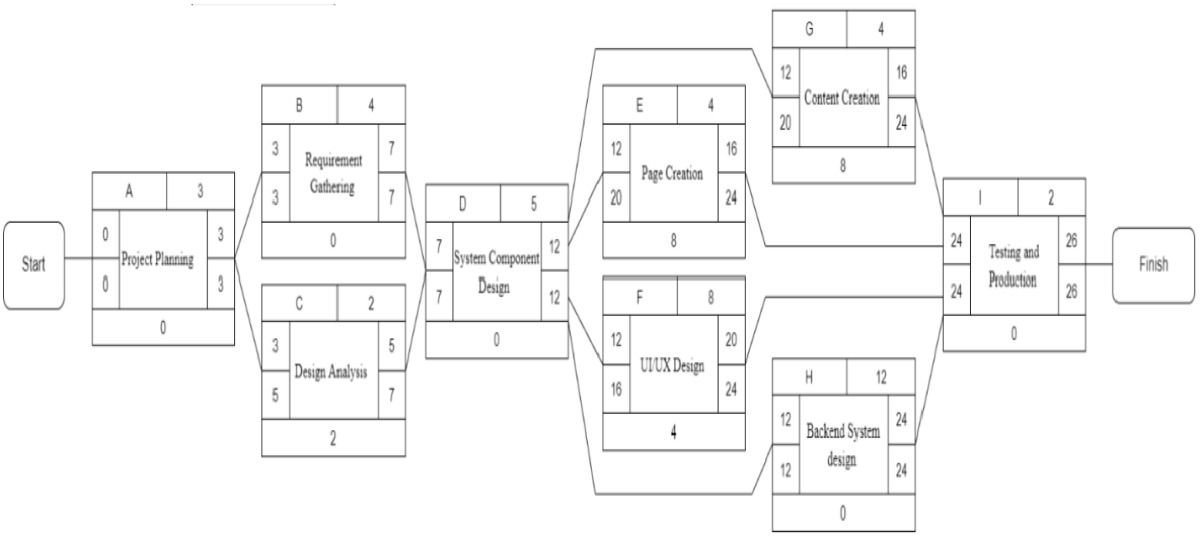


Fig: Precedence activity network diagram

12.0 Risk Analysis:

Risks	Probability	Impact	Rating	Category
Project Manager Availability	20%	3	Medium	ST
Schedule slips	30%	1	High	BR
Project Cancel	40%	4	Low	BU
Inexperienced Programmers	20%	3	Medium	ST
Late Delivery	50%	3	Medium	BR
System Server goes Down	50%	3	Medium	TE
Customer Participation in Beta testing	30%	4	Low	CU

These are the possible risks that are identified initially. But it is important to continuously monitor and control the processes to look for possible inclusion of new risks and mitigation plans.

13.0 Budget for Project:

According to our assumption,
Total working days = 22*7= 154days = 154*8 = **1232hour**
Salary per hour: **610 Taka**
Maintenance cost per week: **1,50000/26 = 5770 Taka**

Salary	1232*610 = 7,51520/-
Requirement Collection	50,000/-
Transportation	5000/-
Maintenance [for 6 months]	1,50000/-
Utility	1,50000/-
Training & Hardware	5,00000/-
Profit [25%]	4,01630/-
Total	20,08150/-

14.0 Conclusion:

Lastly, after executing or completing a project module, we will get user feedback. A tourist managing system software should provide security assurance. This project will contain customer iteration with hotels and travel businesses, and project management must quantify, objectify, separate, and allocate roles effectively. Given the total project timeline of 9-10 months, the most difficult component of this project is maintaining on track and finishing the task on time. People nowadays look for travel-related information on the internet since it is the most accessible and convenient way to obtain information. In Bangladesh, there are a lot of online travel companies. Our intended system is a web-based application that will incorporate services required by visitors as well as travel-related commercial entities. It is not only for visitors; it will also serve as a hosting platform for hotel or property owners, as well as owners of buses, cars, trains, or airlines.