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Home Coming Home



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This Project titled “**Constructional Support**”, Submitted by **Fahima Nizam Nova**, ID No: **183-16-384** to the Department of Computing & Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on-03-03-2021.

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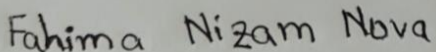
I hereby declare that this project has been done by me under the supervisor of **Ms. Nayeema Rahman, SR.** Lecturer of the department of CIS of Daffodil International University. It is also declared that neither this project nor any part of there has been submitted anywhere else for the award of any degree, diploma, or other qualifications.



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**Dedicated
to
My Family
and
Teachers**

Exclusive Summary

Constructional Support will be able to deal with both the real-world and eCommerce. As people want to learn nearly everything online. The site will be able to make them satisfied by giving all the necessary information. The user will be able to be facilitated by the consultant. This system will help both buyer and seller to know each other. Users will be able to filter the store of necessary constructional products according to the area. The general price and source of products will be also given on the website. Now a day's landowner finds the opportunity to give their land to the developers for building the house. But there is less opportunity for them in the online world to get the exact information about the developers and give the advertisement of their lands. This site will give this opportunity to the user to introduce themselves as the landowner and tread their lands. The developer's group will also be able to attach their information in the developer's field of the system. The main target of the system is to facilitate the user with all the requirements from one place.

This system will also facilitate the construction workers to get work. The user will be able to find the information on necessary transport from this system.

The system has been developed by analyzing several technologies concerning the server and client servers.

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Chapter – 1: Introduction

Initial Description of the project:

Now it is necessary to provide every information on the internet. Construction is one of the most important parts of our development. And this sector is increasing day by day according to the development of the country and the citizen. Besides, many people earn their livelihood through working in this sector. There are many types of workers who are there for earning and helping a person to build his/her expected home or building. Many users are there, who wants to gather idea and information about constructing a building. The target of this site is to help those customers and users or other involving members to meet in a common platform. People like to learn about the price and best source of products before purchasing them. There is a lot of online platforms or justify the best products with the right cost. People also want to know the local source of products, materials, and other important things like land, manpower. It is a very time-consuming process to find the source or other information by going there physically. It is also a hassle for the information seeker to justify the right thing at the right price. The platform – **“Constructional Support”** will provide all the solutions for getting information and required things. Users will be able to register for having the facilities of the platform and initially all the process of maintaining security and authentication will be maintained by the admin of the site.

Chapter – 2: Initial Study

Project Proposal:

The proposed system is based on “Construction” that can be helpful for the people related to construction work. The system can reduce the hassle of collecting information about necessary people related to construction and the product related to construction. It only requires few clicks and gives a little information for getting into the system and get access to know about people who can help in solving the constructional problem. It is required to provide valid information such as NID Identity card number or passport number for signing up in the system. Admin permission is necessary for entering into the site.

The user will be able to send add request to another user for communication purposes via the system.

There will be different types of users such as Seller, Landowner, Buyer, Developer, Consultant, Architect. The user will be authenticated by the admin before signing in for the first time. The suspicious users will be blocked. Besides, one user will be able to see other user’s information with their permission. The current price of probable necessary products will be given by the admin manually.

The users will be able to add area-based workers’ information as the workers are not trained for using this system. The users can also find the area-based transport and store information through this site.

Background of the project

It is now the demand of time to be smart by treading every possible thing through using online and technology. Every day for knowing about an unknown thing, the use of the internet is a must. There was a time when the physical meeting was crucial for any type of deal. But technology makes it possible to have every type of facility from home by making some smart steps. In the last few years, people lost their jobs and many businesses lost their flow of run due to the lack of using technology. And from 2020, the pandemic of COVID-19 has a very bad impact on the job sector and also the business sector. It also affected the construction site.

Much constructional work has stopped till now for the communication gap. But online business platforms get huge popularity and people find that it is easy to get information and probable products and force from the online world.

So, “Constructional Support” has been planned according to the situation and demand. At least people would be able to know information and communicate for trading products and processes by using this system.

Problem Area

Bangladesh has a bunch of internet users and all most users like to get information online. But it is found that there is less information about constructional products or wages. Some required area:

- Information about the area based construction store
- Information about area-based worker’s information.
- Information about area-based transports information.
- Information about Landowner who wants to sell their land.
- Information about all the developers in a place
- The current rate of products
- The genre and variety of products.
- All the probable products that can be needed.

Possible Solution

After analyzing the problem area, it is found that there are lots of resources online but the information is not well-organized and unites in a commonplace. If the information and seekers get into a commonplace they can find out each other and easily find the answer to their question related to construction. It is also possible to find out the area-based workers from the website. And the current rate and genre of products will also be up to date by the admin.

Chapter – 3: Literature Review

Discussion on problem domain based on published articles

There is some site that provides the construction product information, there is also some site like B property that can help the landowners to trade their lands and some of the service management site like “Sheba. xyz” helps people to find out the household workers. But is no such platform that can help the user to find out the area-based shop information or the worker’s information in Bangladesh. But it is required to gather all the information in one place for reducing the hassle of browsing and finding out a reliable source. Some identified problem areas are explained below:

- The people of our country have to lack internet literacy
- Low affordability of internet connection and device
- Less availability of information
- Awareness about security and privacy

Discussion on problem solutions based on published articles

“Constructional Support” is a system that will be able to unite all the information and users in one place. As construction is a big and lengthy process, the system will not provide the payment gateway for the users. But users will be able to find out reliable users who can satisfy their needs. The e-commerce domain is used for managing the system.

The user can also get the contact information of the users for communicating with them face to face. Some area has been discussed about “Constructional Support” that can be the solution of the arising problem:

- Workers Information:

As most of the construction workers’ are not that much educated, they cannot use the system. So, the area-based users have access in this sector to add their information to the site. As this will be an open-source site initially, the area-based users will be able to get more accessibility benefits from the system by adding more than ten workers or transports information.

- Reliability of the system:
As there are lots of resources on the internet, it is quite impossible to give personal information or believe on any given information of any site. But this system will authenticate and validate users.
- Privacy and security:
One user can get another user's information according to his/her permission. It is also not possible to communicate with other users without their permission. And the user will be able to modify (Update/delete) his/her profile.

Comparison of three/four leading solutions

As the technology-based working process is increasing every day. There are a lot of solutions to a probable problem on the internet. It is really hard to find out any unique technology that can solve a problem fully. But the motto of every solution is to satisfy the user's need. The existing similar to "Constructional Support" systems that can be found are discussed below:

1. Nirmankari (<https://nirmankari.com/>)

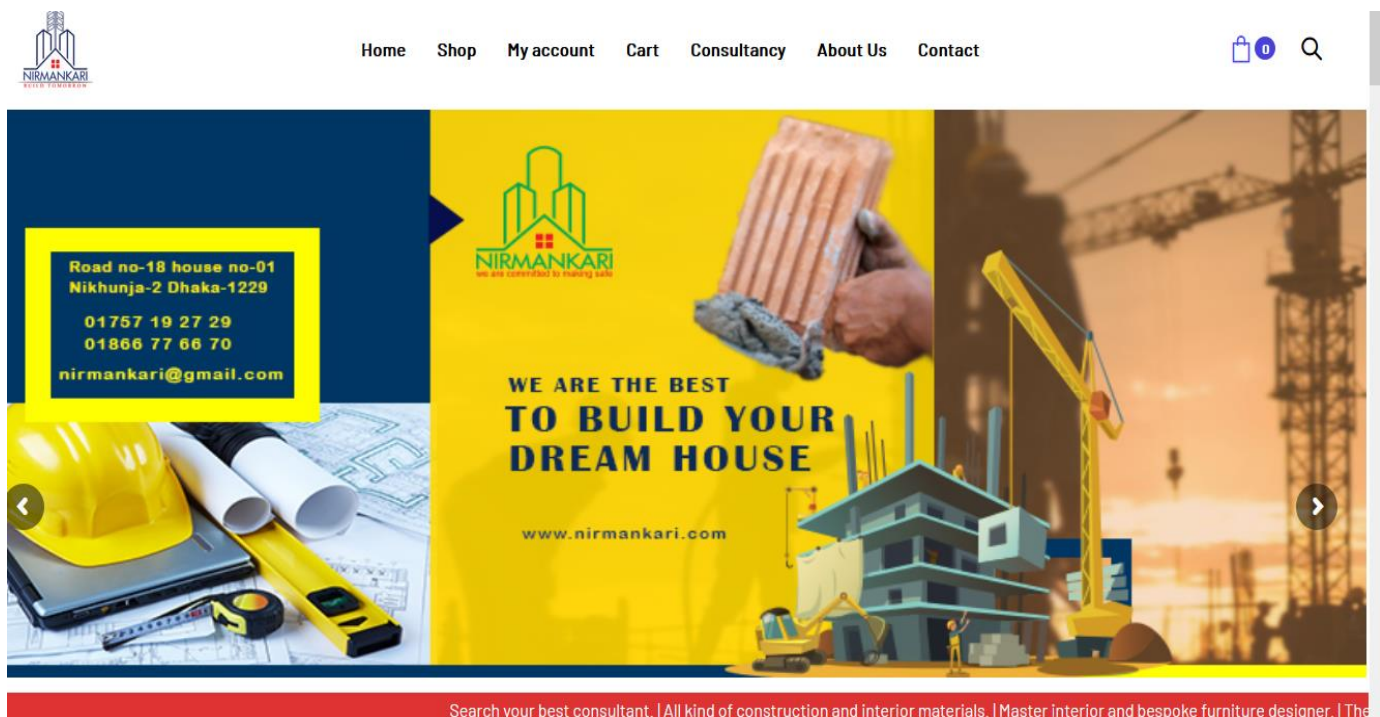


Figure 1: The home page of nirmankari

- Best features:
 - A variety of products can be seen category-wise.
 - There is an option for consultancy.
 - It also facilitates people by providing architectural supports.
 - Consultants can share about their service in detail via the option “available projects.”
 - The total price of products can be got from the shopping cart
- Limitations:
 - It is not providing other services.
 - The product brand is not defined.
 - Products information should be more specific.
 - Users won’t be able to know about other users and their reviews.

2. Buildbari (<https://buildbari.com.bd/>)

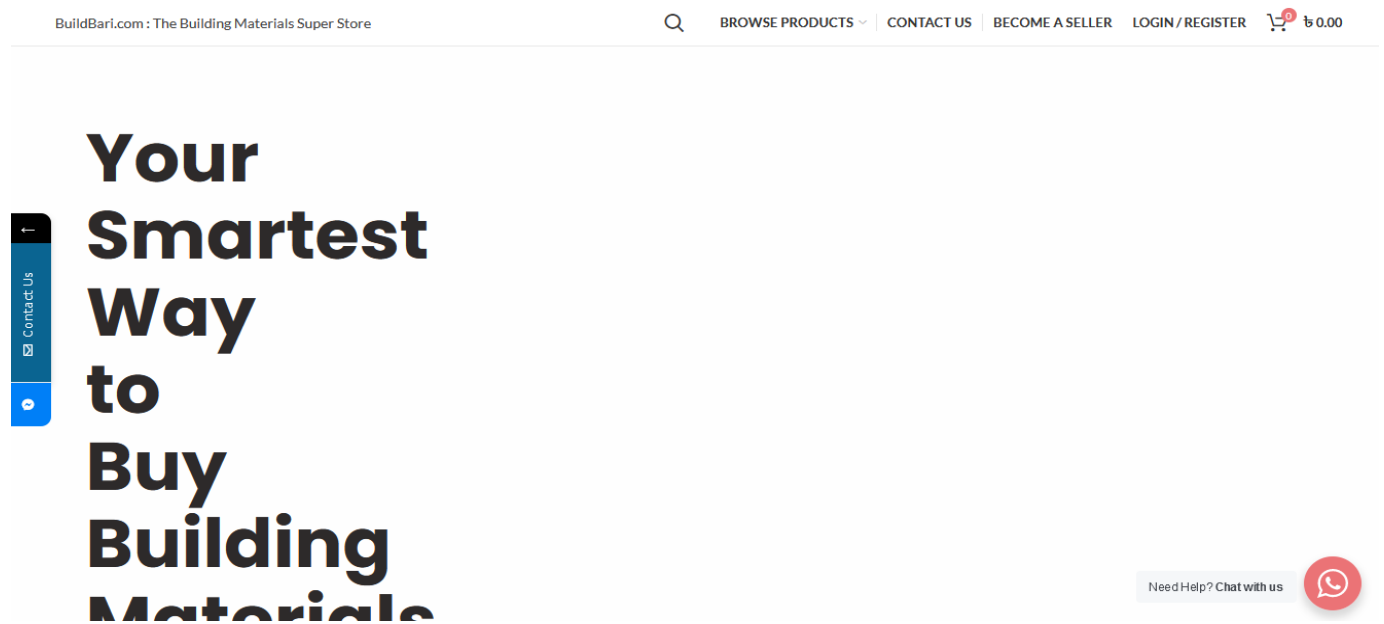


Figure 2: Home page of build bari

- Best features:
 - Facilitate with full information of products
 - There is an option for a buyer named “buying guide”
 - There is an option for calculating material price named “Material Calculator”

- Limitations:
 - It is just an e-commerce site.
 - Cart can't be used without login into the site
 - Users won't be able to know about other users and their reviews.

3. BProperty (<https://www.bproperty.com/>)

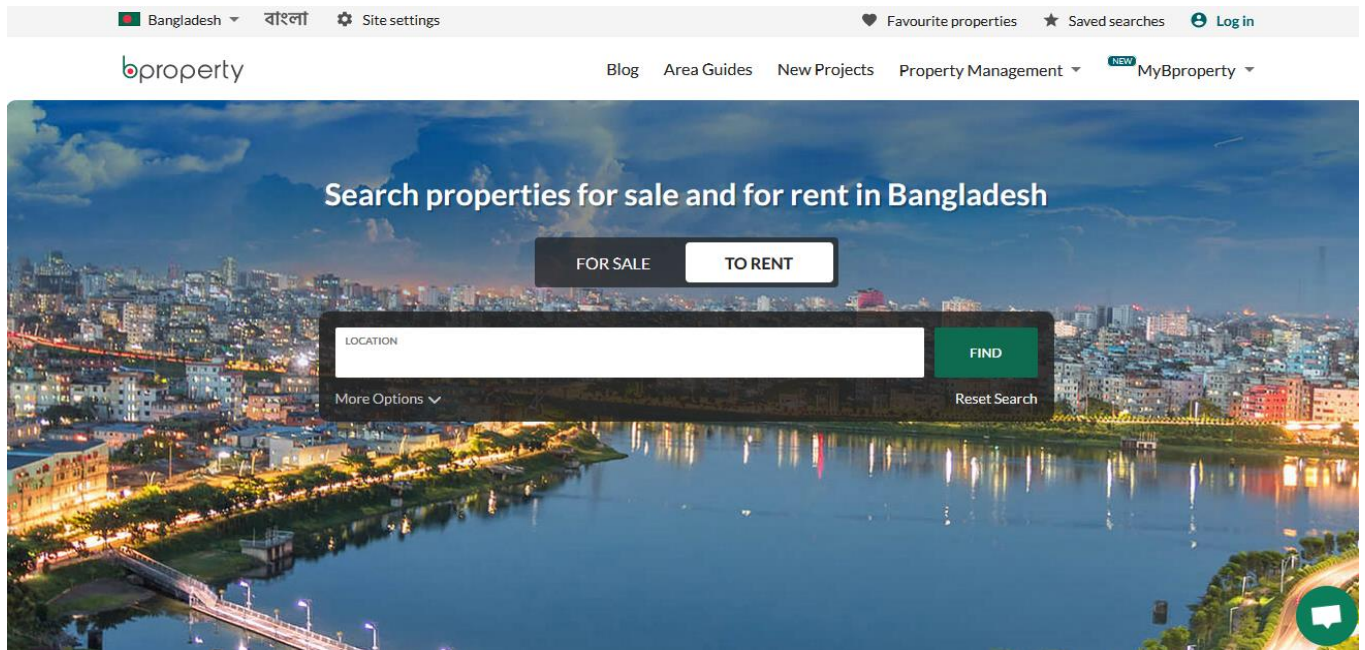


Figure 3: Home page of BProperty

- Best features
 - Area wise service can be found.
 - Real Estate solutions can be found
 - People can get home loan information and loan calculator
 - Easy way to buy or rent a home/flat.
 - Limitations
 - Users won't be able to communicate with other users without the help of the system.
 - This site is only for property owners, clients.
- ### 4. Sheba.xyz (<https://www.sheba.xyz/>)

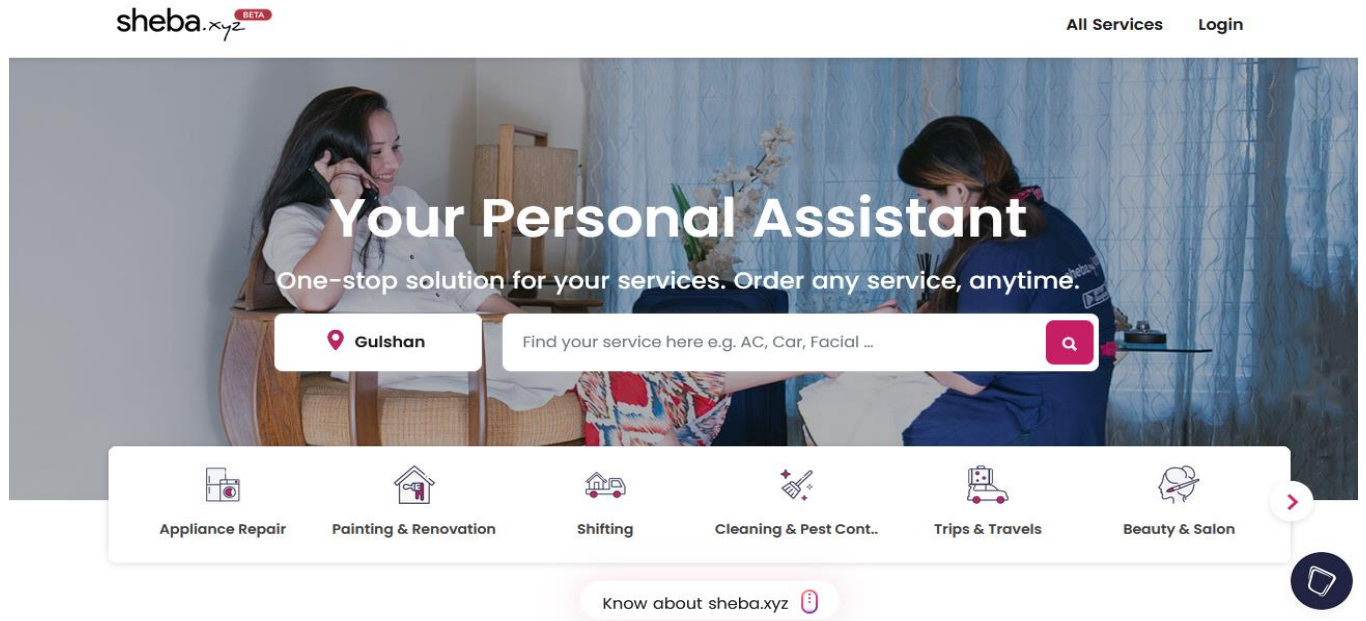


Figure 4: Home page of Sheba xyz

- Best features
 - Registration and login process
 - Filtering process for finding the necessary service
 - Filtering according to area
 - Payment gateway
- Limitations
 - Not that much informative
 - User interface is not well defined
 - The working timetable of the worker is not defined.
 - It is suite for the house hold work.

Recommended approach

As the main target of creating any system is to solve users' problem, the system must be user friendly and well defined. After analyzing different sites, it is found that some must have features are there that should be implemented in the proposed site:

Users Information:

- User type should be defined before allowing them in the site.

- User should have to provide reliable documents for getting access into the system.
- Area based filtering process should be implemented.
- Role based user filtering process should be implemented.
- User's information should be authenticated.
- Privacy and security of the user should be maintained.

Workers and Transports information:

- The correct information of the workers and transports should be provided.
- Users' should have the ability to add workers and transports information.
- Area based filtering process should be implement for the workers and transports.

Communication Process:

- The communication process should be restricted according to the users wish.
- One user can connect with another user by sending requests.
- Users will be able to see other users' profile where users' activity on the system will be shown.

Post and Advertisements:

- An advertisement panel should be provided.
- Advertisement should have necessary filtering process also for getting topic wise information.
- Lands and other real estate property can be bought and sold via this service.
- Developers can find out the landowners, as well as owners can find real estate solutions.
- Users can get consultancy and architectural support.

Product option:

- There will be a product page.
- Products' full-fledged information will be provided by the admin
- Users will be able to add product to cart.
- Users will be able to order products from cart with address and other information.
- There will be an option for payment.
- Admin will distribute the order to the sellers of the system according to the area.

Systems' portability:

- The system should be accessible by any type of smart device.
- Search button should be dynamic for quickly finding out required information.

Chapter – 4: Methodology

What to use

For developing the system, DSDM (agile framework) methodology. The selected methodology on creating a system more dynamic in a fixed budget and time. The main ideology of DSDM are:

- The main focus is to deliver the products as early as possible.
- Fixed time boxes make sure the tight schedule.
- It is goal oriented and focuses on developing the proposed system
- During the iterative development period, the attachment of end user or tester is very important.

Why to use

The reason for choosing the system has been discussed below:

- As the proposed system should be completed in a fixed time and budget. DSDM helps to implement the right product focusing on the time limit and budget.
- The project requirements have been prioritized using MoSCoW prioritization for defining right time frame focusing on time limit.
- The main part of DSDM is iterative development that helps to implement logic and objectives and use them correctly in the project.

There are many more facilities that is founded from DSDM during implementing the project.

Sections of methodology

There are seven phases under five sections in this methodology. How the phases are completed is explained below

Pre-project:

This is the initial phase of the project where the project analysis, project proposal, Resources, project plan, measurement of requirements and other project related study has been made.

Feasibility:

At first the scope of the solution has been analyzed where it will be implemented. After that the time estimation from development to deployment has been made. After that the features has been listed out.

Foundation:

In this phase, the listed features have been prioritized by using MoSCoW prioritization method. Some time frame has also defined that was helpful for creating each feature.

Exploration:

In this phase, the features have been implemented according to the priority list. This phase is quite lengthy and process is iterative. In each loop is consisted with the following steps:

- Analysis of the feature
- Making Database
- UI design
- Development
- Unit testing
- Integration testing with other features
- Debugging

Engineering:

This phase is about iterative development. The features have been tested from the users' point of view to find out the problems and bugs. It is necessary to have software quality assurance. The validation of performance has been done in this phase.

Deployment:

This is the last phase that is implemented after evaluating the features' functionality. The features have been deployed to the main solution as a shippable functionality.

Post-Project:

Project documentation, user manual, user training has been created in this phase. And finally the system is ready to handover to the user.

Implementation plans

Different plans can be used for implementing DSDM. Here, some of the plans has been explained:

MoSCoW Prioritization:

The requirements should be prioritized according to this methodology. There are some key factors for listing requirements like business scope, security issue, data and integration maintenance, performance speed and aim of the system. The definition of the key words (Must have, should have, could have, Won't have) is given in the table.

Must have	Must have requirements are marked as the key requirements of the system that can meet the projects' target.
Should have	Should have requirements are the requirements that is not mandatory for the system but make the system better.
Could have	Requirements that is not necessary but may be necessary for making the system well structured.
Won't have	Requirements that is not relevant to the system are explained in this part.

Time Boxing

The whole process of project implementation is divided into several part and a limited time is bound for completing each part. Time box also defines the sequences of part by part task, whole time duration of completing the system.

Iterative Development

Using iterative development, the large development process can be divided into small chunks. Iterative development is applicable in every stage of DSDM so that the previous stage can be reviewed easily in this way.

- ✓ The solutions can be appraised.
- ✓ Short plans can be set.
- ✓ The tasks can be measured and reviewed again and again.

Chapter – 5: Planning

Project Plan

Before starting any types of work it is necessary to have a perfect plan. In time of making the plan, the requirements, business value can be found. So, planning can be helpful for implementing the project. A brief description of some of the planning process has been explained below:

Management Plan/Work Breakdown Structure (WBS)

Task name	Duration	Start date	End date
Initial Study of the project <ul style="list-style-type: none"> ▪ Analysis the project ▪ Analysis the existing solutions ▪ Find out the benefits & limitations 	03 days	01.10.2020	03.10.2020
Project Proposal <ul style="list-style-type: none"> ▪ Create a Project proposal ▪ Submit the proposal to the Supervisor and take feedback. ▪ Make further analysis according to the feedback. 	04 days	04.10.2020	08.10.2020
Project plan <ul style="list-style-type: none"> ▪ Make market research ▪ Make a plan for completing the project 	04 days	09.10.2020	12.10.2020
Feasibility Analysis <ul style="list-style-type: none"> ▪ Functional Feasibility ▪ Technical Feasibility ▪ Market Analysis 	03 days	13.10.2020	16.10.2020
	02 days	17.10.2020	18.10.2020
	05 days	19.10.2020	23.10.2020

▪ Economic Feasibility	02 days	24.10.2020	25.10.2020
Planning & System Analysis			
▪ System Requirements	03 days	25.10.2020	27.10.2020
▪ Functional Requirements	03 days	27.10.2020	29.10.2020
▪ Non-functional Requirements	03 days	29.10.2020	31.10.2020
Design			
▪ Interface Design	02 days	30.10.2020	31.10.2020
▪ System Design	03 days	01.11.2020	03.11.2020
▪ Database Design	02 days	04.11.2020	05.11.2020
▪ Class diagram	01 days	06.11.2020	06.11.2020
▪ Sequence diagram	01 days	07.11.2020	07.11.2020
Implementation/Development			
▪ Interface Implementation	07 days	08.11.2020	14.11.2020
▪ Database Create	04 days	15.11.2020	18.11.2020
▪ System Development	20 days	19.11.2020	09.11.2020
Testing			
▪ Black box Testing	02 days	10.12.2020	11.12.2020
▪ White box Testing	02 days	12.12.2020	13.12.2020
▪ Unit Testing	02 days	13.12.2020	14.12.2020
▪ Integration Testing	01 days	15.12.2020	15.12.2020
▪ Regression Testing	01 days	16.12.2020	16.12.2020
▪ Acceptance testing	01 days	17.12.2020	17.12.2020
▪ Performance testing	01 days	18.12.2020	18.12.2020
	01 days	19.12.2020	19.12.2020

- Security testing

Installation	02 days	20.12.2020	21.12.2020
Documentation	10 days	21.12.2020	31.12.2020
Total	96 days	01.10.2020	31.12.2020

Time Duration/ Time Boxing

No	Task name	Duration	Resource Name
1	Introduction	03 days	Analyst
2	Initial Study of the project	04 days	Analyst
3	Literature Review	04 days	Analyst
4	Methodology	12 days	Analyst, Developer
5	Planning	09 days	Analyst, User
6	Feasibility	09 days	Analyst, Developer
7	Foundation	15 days	Analyst, Developer

8	Exploration	07 days	Analyst, Developer
9	Engineering	02 days	Analyst, Developer
10	Deployment	11 days	Developer, Tester
11	Testing	11 days	Tester
12	Implementation	5 days	Developer
13	Evaluation	1 days	Analyst, Developer
14	Critical Appraisal	1 days	Analyst, Developer
15	Lesson Learned	1 days	Analyst
16	Conclusion	1 days	Analyst, Developer, Tester
	Total	96 days	

Gantt Chart

The visual representation of work breakdown structure of the project is Gantt Chart.

Every task of a project can be found with time duration in this chart:

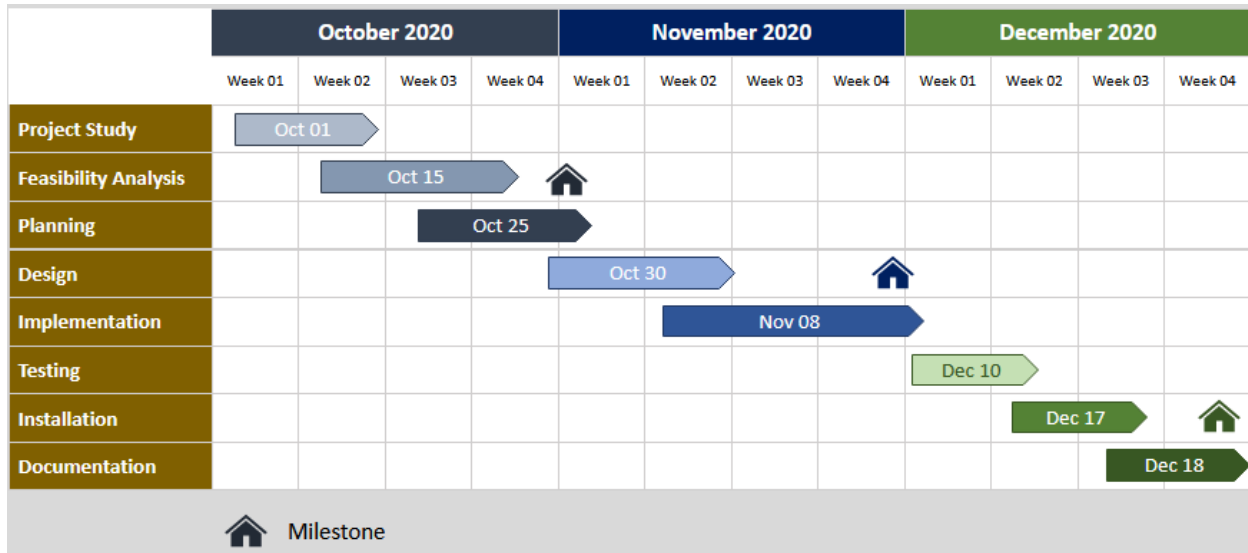


Figure 5: Gantt Chart

Test plan

In this part, the plan for testing the full features and requirements of the software has been explained. The bugs and faults can be found from the system by testing properly. Testing plans are set and testing is done according to the plan for measuring the process of the system effectively.

Testing against time boxes

Testing process has been completed in a fixed time box. 9 days is fixed for testing. 2 days for black box testing, 2 days for white box testing, 2 days for unit testing, 1 days for integration, 1 days for regression testing, 1 days for acceptance testing, 1 days for performance testing, 1 days for security testing. As testing is an important part of software development, so it is quite tough to make the testing process in a limited time. Several testing takes part in time of developing the system.

Required tests

As mentioned in the time box, several testing took place for completing the whole testing process. The test methodology that is used in this system is explained below:

Black Box Testing – It is for testing the external working process.

White Box Testing – It is for testing the internal code or program.

Unit Testing – Individual unit of a system is tested here.

Integration Testing – Grouped features are tested in integration testing.

Regression Testing – The change of code affects the existing features or not.

Module testing – Evaluation and workability of the integrated key features are tested here.

Acceptance Testing – It tests if the requirements and criteria meet the business standards.

Performance Testing – The effectiveness, stability, reliability of a system is measured in this testing process.

Security Testing – It finds the threats, weakness of the system.

Chapter – 6: Feasibility

All possible type of feasibility

For determining the benefits and risks for proceeding with any project it is required to do feasibility study. It also helps to identify potential obstacle that may disrupt its operations and recognize the amount of funding it will need to run the project. Most of the organization has their own process and certain format for feasibility analysis. Here, three areas have been analyzed and the result of appraising the feasibility factors are combined into feasibility study.

Technical feasibility

Technical feasibility gives the answer of question “Can we build it?”

In technical feasibility, the answer of the question “Can we build the system?” is made by analyzing the present resources for the required technology alongside hardware and software. Technical feasibility also analyzes the compatibility of the technology with the proposed scenario, technical skills and capabilities of the developer, drawbacks of existing technologies, ease of use of the proposed system.

The technical feasibility has been analyzed for the project “Home Coming Home”. The outcomes have been given below:

1. It is easy to implement with the current resources as it is a simple website.
2. There is no such useful website from where client can get the answer of his queries, so this website will help them to find out the necessary queries.

3. Though there are some constructional site like buildbari, nirmankari, sindabad where people can buy constructional elements from online but they do not provide any local area based information and they do not provide constructional service holders information.
4. This system won't provide any trade service directly yet, it can be used as trade service but it is mainly for the people to learn about the constructional issues with the help of consultant and find the nearest store or service.
5. As it is similar with some e-commerce site, it can be easy to use.
6. The system is lite weight, so it would be easy to maintain.

Operational feasibility

Operational feasibility analysis the acceptability of the application by its users and stakeholders. It helps to get the answer of "If we build it, will they come?". It will be an easy to use application and it will be open source application. So, if it fulfills the user requirements then maybe it will be accepted by the users.

- Find the constructional services easily.
- Find the services filtered on area wise.
- Upload blogs for requirements and Queries.
- Estimate total purchase of elements.
- Hire services from online
- Communicate with each other via the system.

A user instruction will be provided.

Economic feasibility

Economic feasibility is called cost benefit analysis. This sector gives the answer of the question "should we build the system?". It will analysis the cost effectiveness and benefits. The cost of this project is described below:

System Implementation Cost

Components	Quantity	Total Cost (BDT)
Hardware	3	52,000
Software	6	48,000
Web Hosting Cost	1	1,000
Other Components	1	13,000

Hardware Cost

Components	Quantity	Total Cost (BDT)
Computer	1	50,000
Wi-Fi Router	1	1,500
Electric Components	3	500

Software Cost

Components	Quantity	Total Cost (BDT)
VS Code	1	0
Browser	1	0
Microsoft Office	1	10,000
Adobe Creative Cloud	1	12,000
OS (Windows)	1	26,000
SQ Lite	1	0

Hosting Cost

Components	Quantity	Total Cost (BDT)
www.HomeComingHome.com	1	1,000

Other Components

Components	Quantity	Total Cost (BDT)
Internet Connection/Year	12 month	1,000
Electric Bill/Year	12 month	1,500
Maintenance(Security)	1	6,500
Employee Training	1	4,000

After analyzing the economic feasibility, it is cost effective because many of the required item I already have that minimize the total cost.

Cost-benefit Analysis

Cost benefit analysis find out the deference between cost of required components and the benefit that will come from the developed system. The cost and benefit tables are:

Cost estimation

Components	Quantity	Total Cost (BDT)
Hardware	3	52,000
Software	6	48,000
Web Hosting Cost	1	1,000
Implementation	1	20,000
Maintenance		9,000
Total		1,30,000

Benefit Estimation

Basic For	Benefits (BDT)
Business Improvement	70,000
Improvement of Productivity	30,000
Savings from Changes (Structural)	70,000
Total	1,70,000

DSDM – good or not for this project

DSDM don't compromise with the quality of the project. The iterative development process makes sure the quality of project. According to the feasibility analysis it can be assured that the project can be developed, as it is a new type of business platform. And DSDM is the perfect methodology for developing the project.

Chapter – 7: Founded

Overall Requirements List

From the view of the user demands and expectations, the requirements have been listen up. The requirements are specified according to the functional and non-functional order. The requirements are described below:

Functional Requirements:

- User registration with the option of user type.
- User registration confirmation key will be also sent when user get registered after the permission of admin.
- Registered member will be able to get into the system.
- Users will be able to communicate with each other via chat.
- Users will be able to write blog for seeking service, related job, property or product.
- Users will be able to Add product to cart.
- Users will be able to order product from cart and make online payment.
- Users will be able to Filter products, blogs, services according to the area and topic.

Non-functional Requirements:

The development quality and its performance to the end users are determined as non-functional requirements. The non-functional requirements that should be available are as follows:

- **Performance:** Constructional Support is fast and suitable to any device to use. The performance won't down.
- **Availability:** Constructional Support is a web application that will be hosted on a hosting server in the internet. So, it will be available to everyone as required.
- **Security:** A bunch of validation has been applied for ensuring the security. Admin based authentication and authorization has been applied also for security purpose. And Admin will be able to assign staff for performing these authentication and authorization process.
- **Manageability:** Constructional Support system is robust with part by part development. It is extremely manageable.
- **Data Integrity:** Same data is used for different actions of this application. But It keeps the data integrated.
- **Usability:** The application is easy to use and it is user friendly with instruction. And it is similar with many other websites that provides the trading and blogging service.
- **Scalability:** The application can manage the users request in an easy way with the lowest resources to the hosting server. So the site is scalable.

The functional and non-functional requirements make the application acceptable to the end-users. So, these requirements needed extra attention in order to the success of the Constructional Support. **The requirement catalog is given in the appendix.**

What Technology to be implemented (Client/Web/Standalone)

Two types of technology have been chosen for implementing the system. There are given below with explanation.

Web Server Application

The web server application is hosted in the server with unique domain name. It can be easily accessible by the users without installing any software.

Benefits: No need to install any software. Accessible via any types of browser.

Drawbacks: Internet speed should be good. Not findable without correct URL link.

Client/Server Application

The system is hosted and ran into user's machine in this technology. Client machine give access to the client according to the client request. This technology needs to perform fast for catching various featured based on client server.

Benefits: In this sector, user has no need to install any software.





Drawbacks: It is difficult to handle it. It is not able to maintain a bunch of users

Recommendations and justifications

Recommendation:

The recommendation for this system is to use web server application. The system that is implemented based on web server is more utilizable.

Justification:

-  The installation of any supportive software is not necessary.
-  It is accessible from anywhere with any browser.
-  A bunch of users can use web server at the same time.
-  Most popular and swiftly used server.

Chapter – 8: Exploration

Old Full System Use Case

Use case diagram allow the development team to visualize the accessibility of the various functions to the end-users and their feedback to those functions to the development teams. The use case of this project is given below:

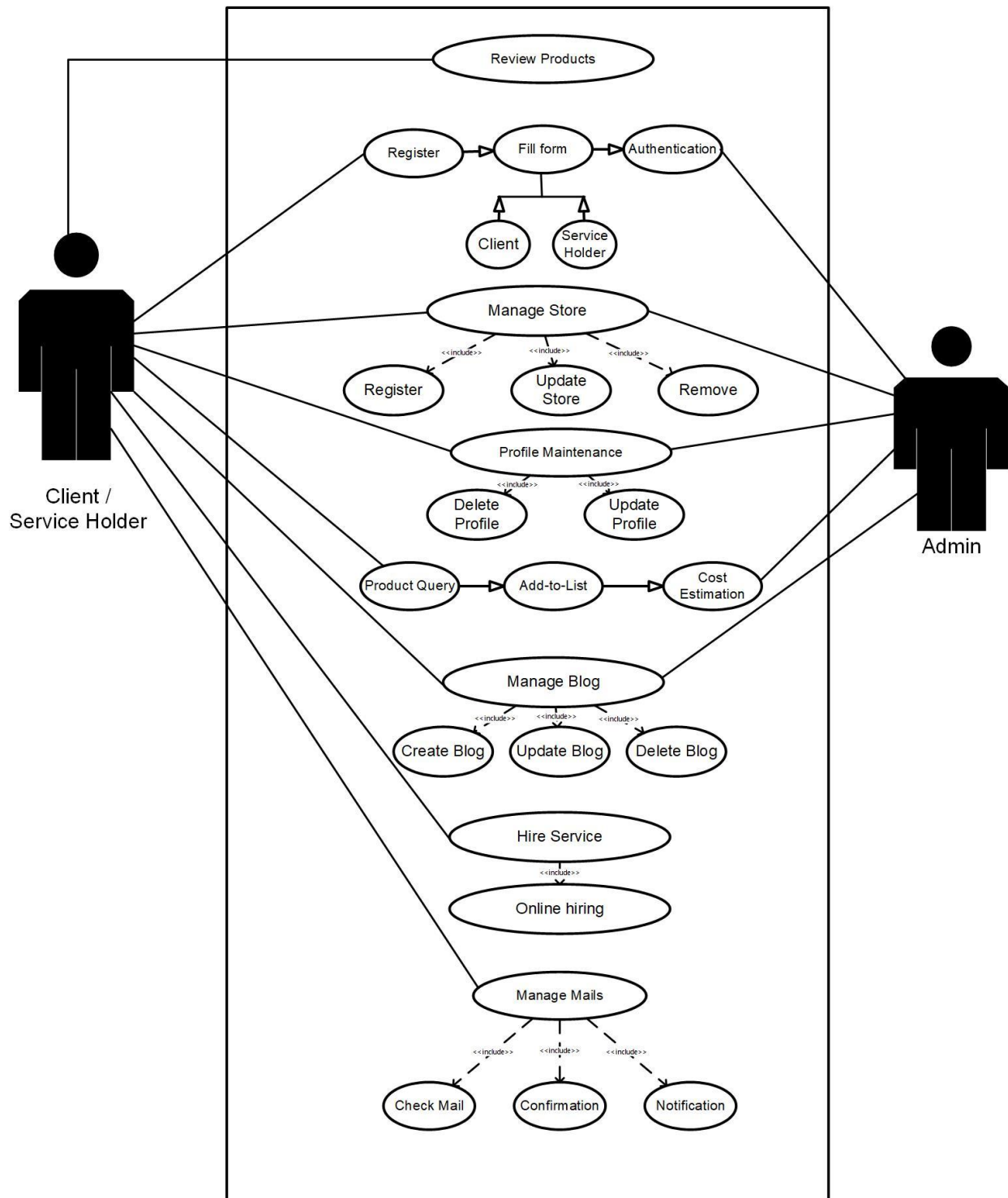


Figure 6: Old Use case diagram

Old full system Activity Diagram

The old activity diagram is given below:

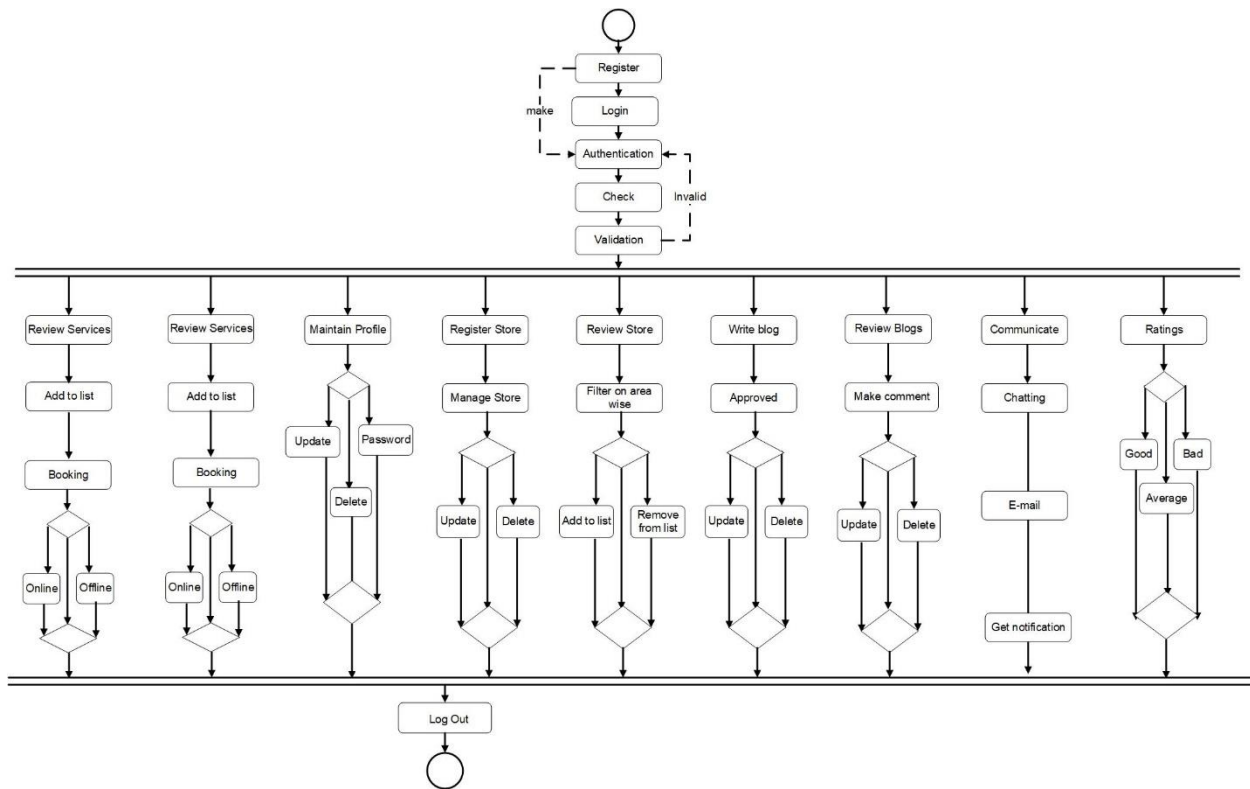


Figure 7: Old activity diagram

Prioritized Requirement List(PRL)

Requirements of the system has been divided into two sections and the requirements has been prioritized using the MoSCoW methodology. Functional requirements and the non-functional requirements are very necessary for getting the best performance of the system. The possible requirements have been listed out according to the priority by following the processes of the system. The key points that is followed for listing the requirements has been given below:

- The Business process of Constructional Support Scope
- The scope of Constructional Support system
- Security issue
- Data and integration maintenance
- Performance speed
- The aim of the system

Functional Requirements

The functional requirements for the system “HCH” are as follows:

- ✓ User registration for using this system with efficient way.
- ✓ Login process for getting access into the system.
- ✓ Manage different type of data of the system.
- ✓ User communication system
- ✓ Product cart system
- ✓ Product order system
- ✓ Payment system
- ✓ Manage the system security.
- ✓ Manage Blog of the users.
- ✓ User feedback about the system.
- ✓ Filtering option for getting the required information.
- ✓ Dynamic searching facility

Moscow prioritization of the functional requirements:

Serial No.	Functional Requirements	Prioritized State
1	User registration system	Must have
2	User login system	Must have
3	User role	Must have

4	User logout system	Must have
5	User profile update system	Should have
6	Register Store	Must have
7	Approve Store	Must have
8	Update store info	Should have
9	Delete store	Must have
10	Show Store's all product	Should have
11	Filter Store on area wise	Must have
12	Filter Product on different fields	Should have
13	Choice Cart	Should have
14	Order Product	Should have

15	Payment Method	Should have
16	Write blog	Must have
17	Approve blog	Must have
18	Update blog	Should have
19	Delete blog	Would have
20	Write comment.	Must have
21	Delete comment	Must have
22	Dynamic search of the blog	Should have
23	User feedback & review	Should have
24	Service list	Must have
25	Service register	Should have

26	Approve Service	Should have
27	Update Service info	Should have
28	Delete service	Should have
29	Filter Service on area wise	Should have
30	Service hiring system	Should have
31	User Collaboration system	Should have

Prototype of new system

Here, the graphical representation view of the proposed system is given.

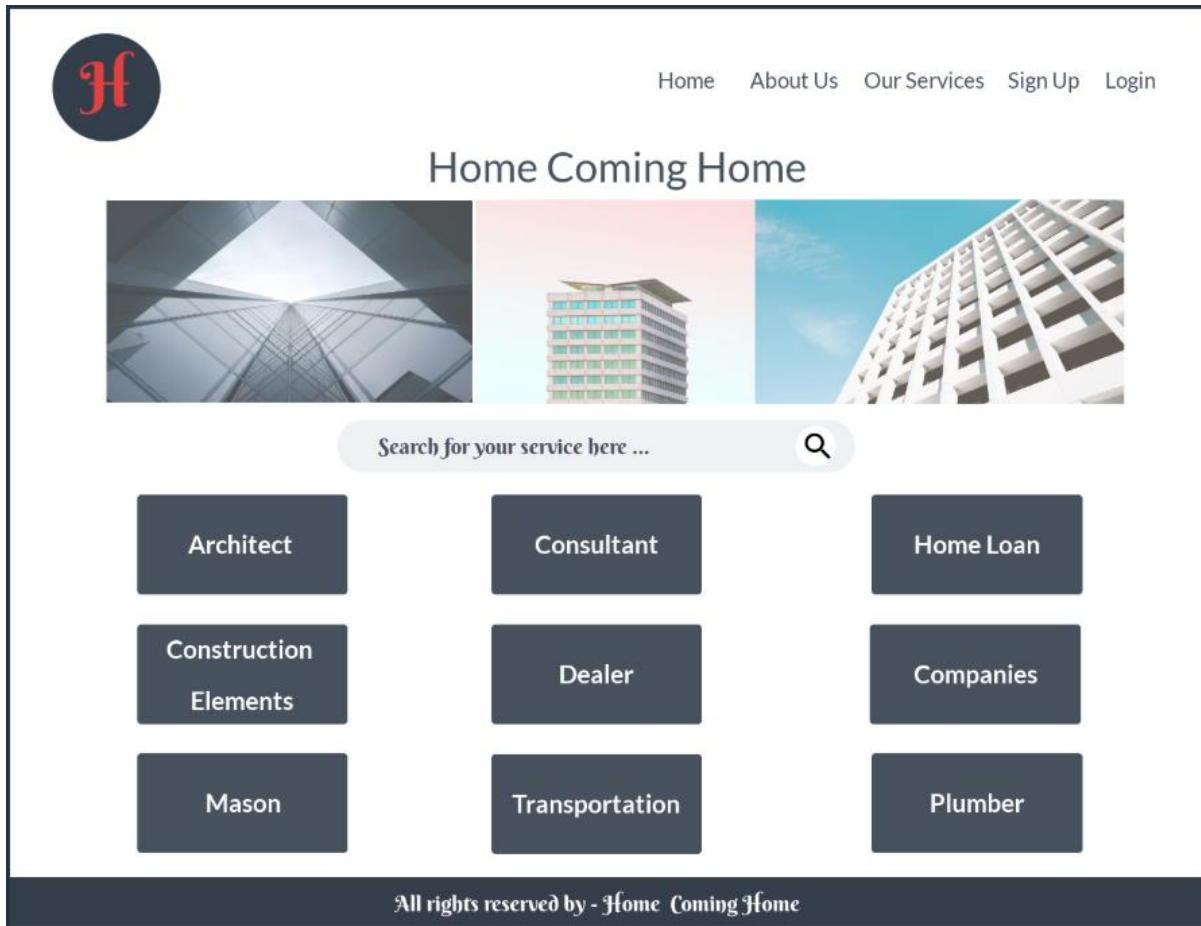


Figure 8: Prototype service page

Home About Us Our Services Sign Up Login

Home Coming Home

Sign Up

Lorem ipsum dolor sit amet, consectetur adipiscing elit.
In nec nibh vitae erat efficitur faucibus.

Full Name

Email

Join As ▼

Buyer...

Phone

Password

I agree with the terms & conditions

Sign up

All rights reserved by - Home Coming Home

Figure 9: Prototype sign up page

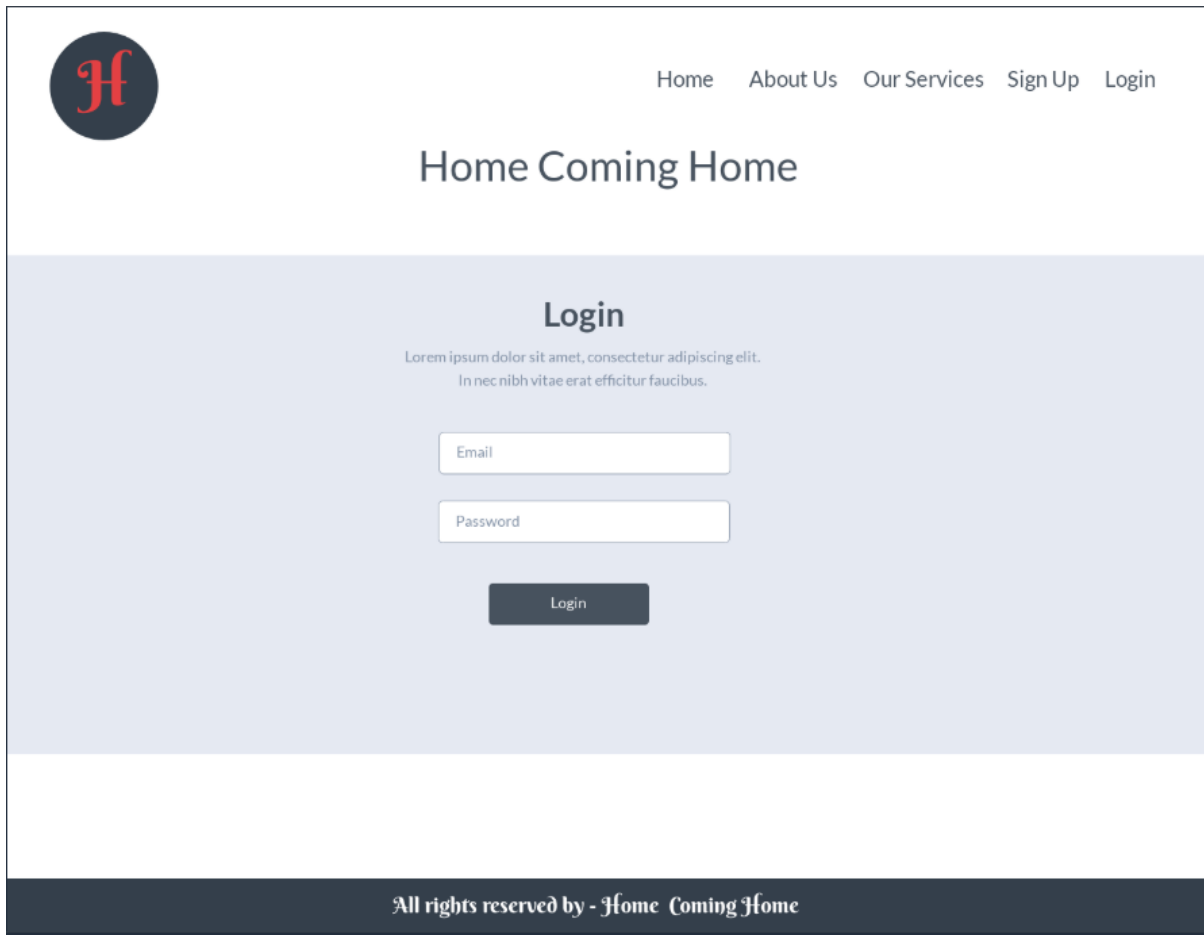


Figure 10: Prototype home page

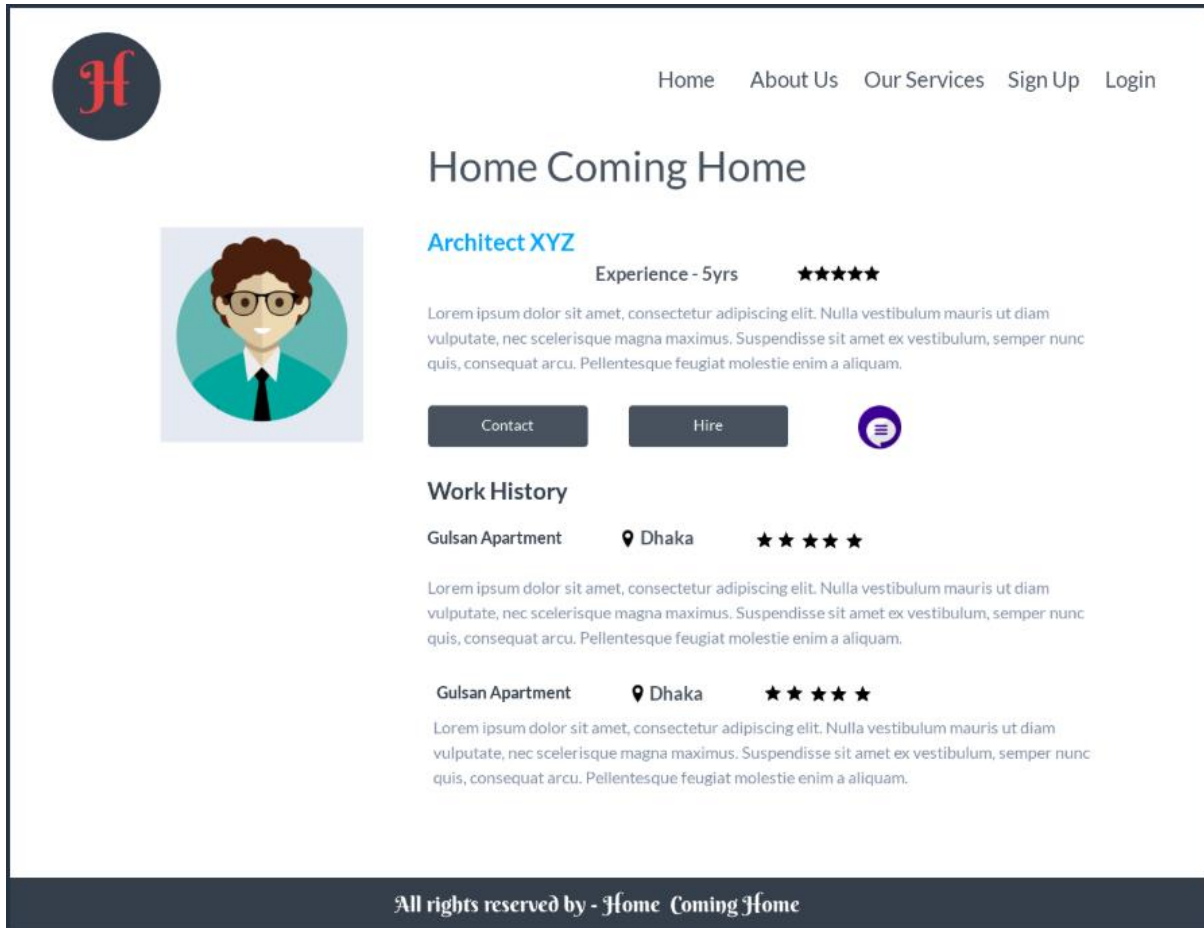


Figure 11: Prototype user profile

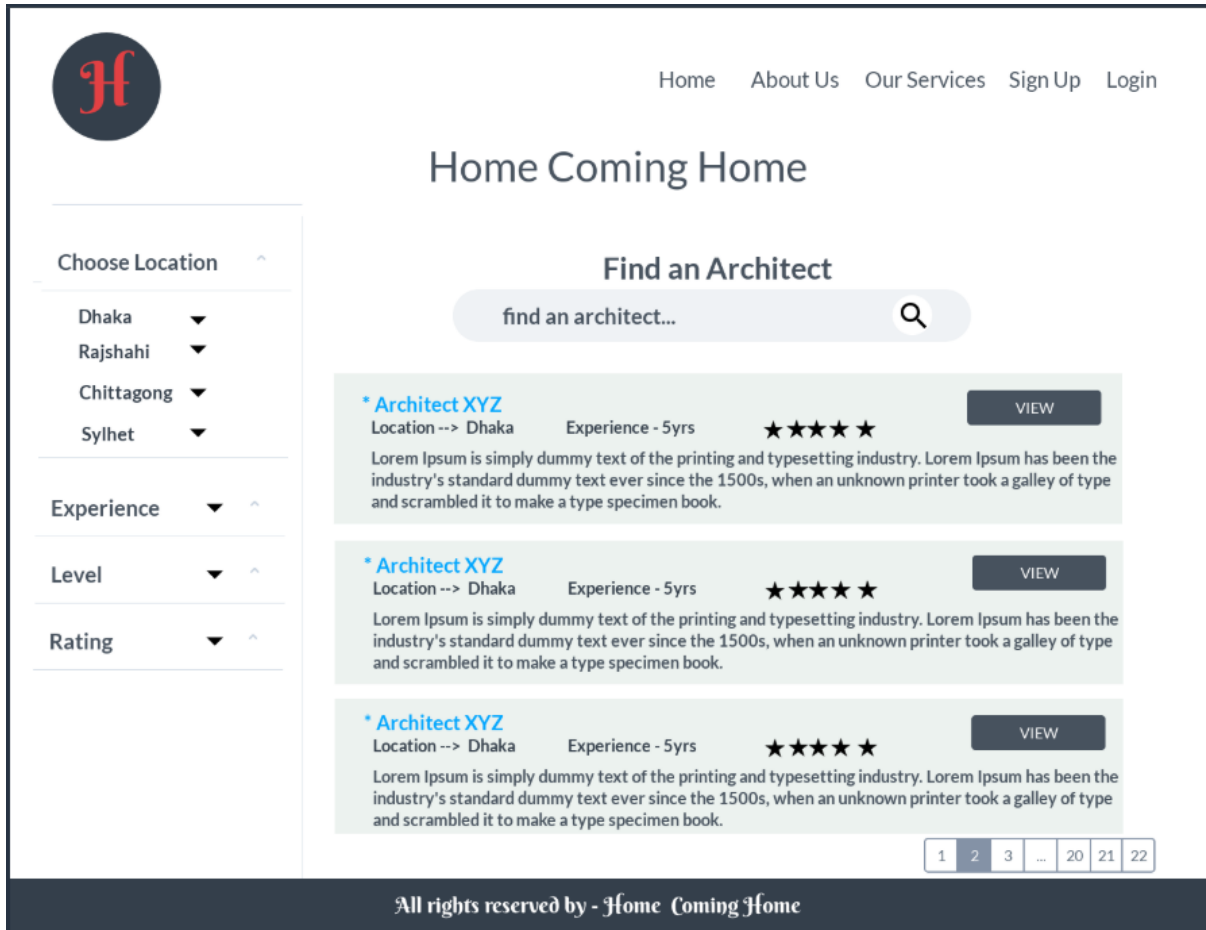


Figure 12: Category and are wise service page



Figure 13: Product page

Chapter – 9: Engineering

New System Modules

Some new modules have been added with the existing modules.

- Product order
- Payment Method
- Blog filter according to the topic
- User authentication with reliable doc file
- Feedback and Contact option

Use Case

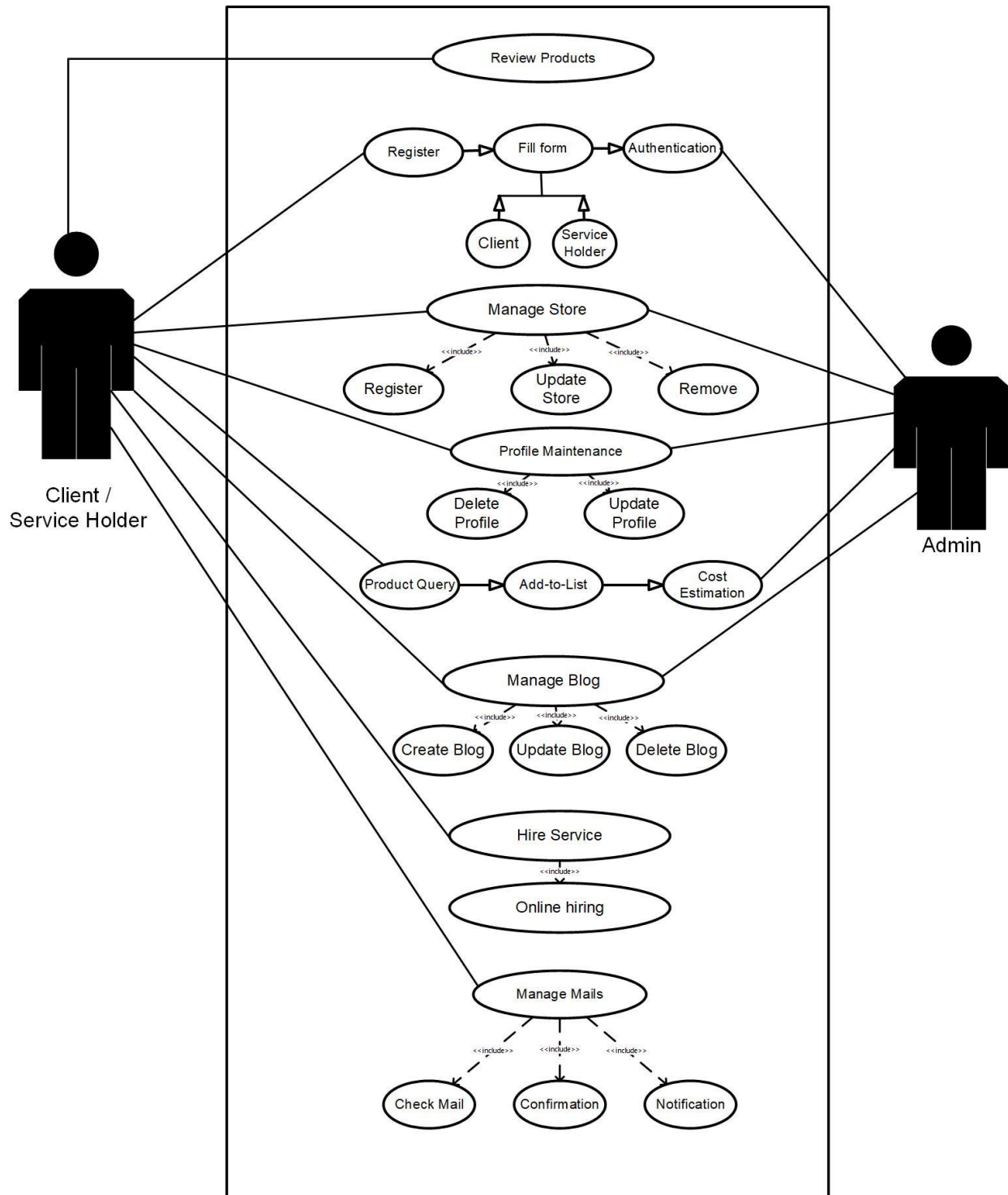


Figure 14: Use case diagram of the system

Use case description:

UCD-1	User Sign Up
Use Case Description	User can register
Actor	New user
Basic flow of event	<ul style="list-style-type: none"> • Fill out the registration form properly • Data inserted into the database

UCD-2	Log in
Use Case Description	Registered user can Login
Actor	Registered User
Basic flow of event	<ul style="list-style-type: none"> • Fill out the Login form properly • Login to the application

UCD-3	Manage store
Use Case Description	User can register, update, remove store
Actor	User
Basic flow of event	<ul style="list-style-type: none"> • Fill out the registration form properly • Data inserted into the database • Insert valid data. • Remove store

UCD-4	Profile maintenance
Use Case Description	User can update, remove profile
Actor	User
Basic flow of event	<ul style="list-style-type: none"> • Fill out the update form properly • Data inserted into the database • Remove profile

UCD-6	Product Query
Use Case Description	User can search for product, store or worker
Actor	User
Basic flow of event	<ul style="list-style-type: none"> • Search from the dynamic searching option • Choose right option

UCD-7	Add to list
Use Case Description	User can enlist the chosen products
Actor	User
Basic flow of event	<ul style="list-style-type: none"> • Click on add sign of product • Product will be added in the list

UCD-8	Cost estimation
Use Case Description	User can get the whole price from the listed product
Actor	User
Basic flow of event	<ul style="list-style-type: none"> • Click on calculation bar • The total cost of products will be given in a invoice.

UCD-9	Hiring service
Use Case Description	User can hire other user
Actor	User
Basic flow of event	<ul style="list-style-type: none"> • User can check the review of others from their user list • User can filter the user list according to work and place • User can send hire request by clicking hiring button

UCD-10	Notification
Use Case Description	User can check mails and notification
Actor	User, Admin
Basic flow of event	<ul style="list-style-type: none"> • Admin can send important messages via mails • User can get notification from the notification bar and mails.

Class Diagram

Initial Class Diagram

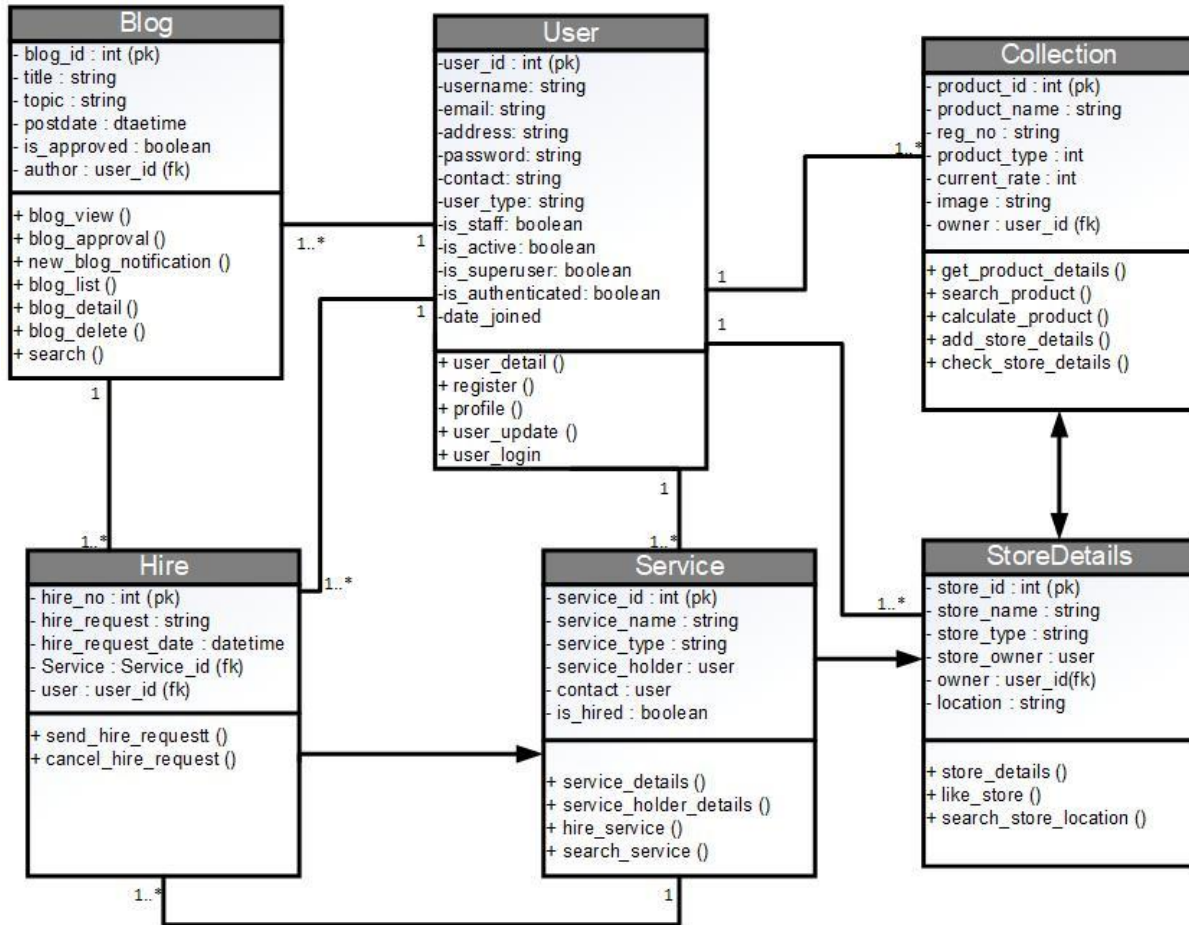


Figure 15: Initial Class diagram

Detailed class diagram

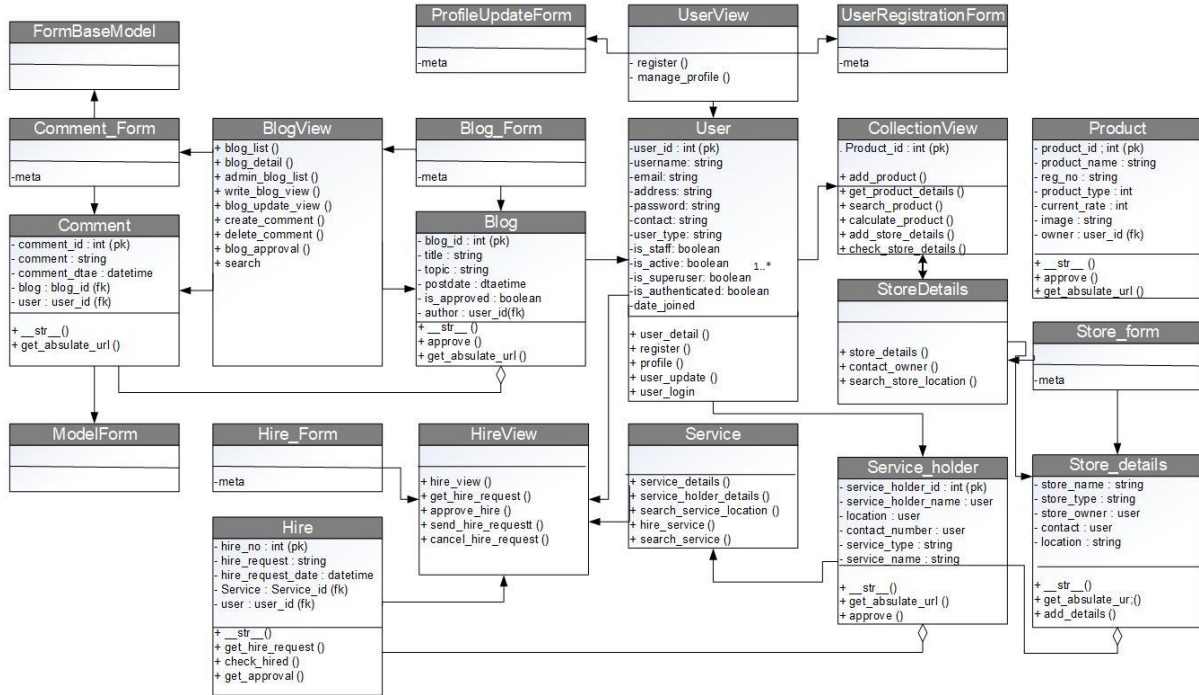


Figure 16: Detailed class diagram

ERD Diagram

ERD diagram of the proposed system is given below:

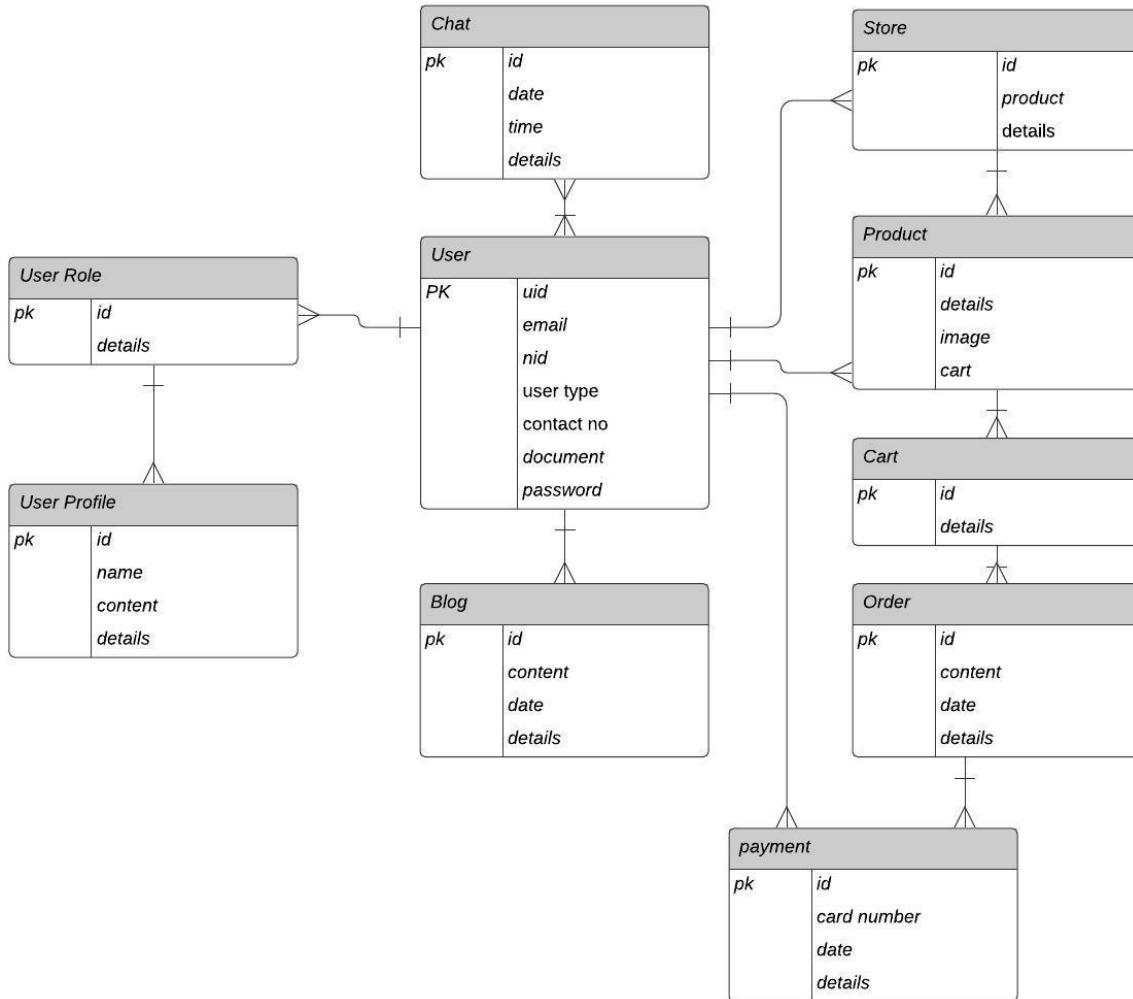


Figure 17: ERD diagram

Sequence Diagram

Store Sequence Diagram

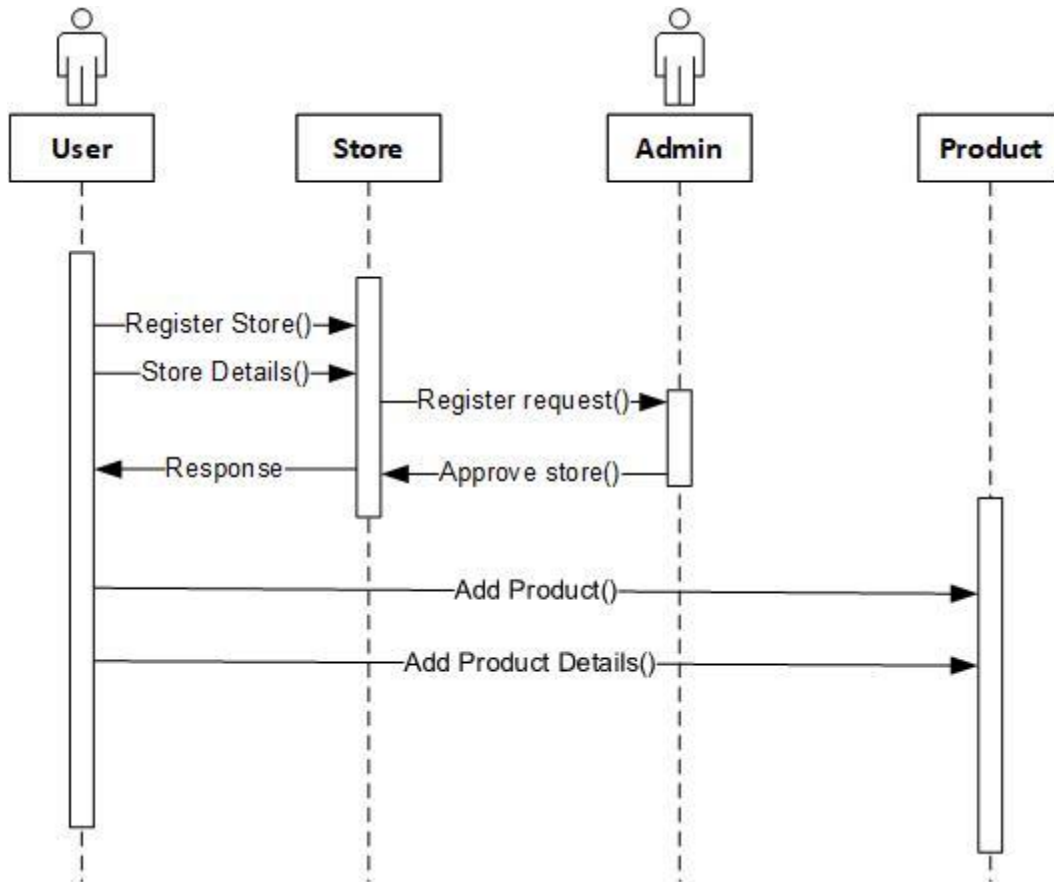


Figure 18: Store sequence diagram

Authenticated store owner's instance will request for the store registration form and the store app will send response with registration form with store instance. After the successful registration of store application will show the registered stores' details. Admin instance will approve the store. After that the owner instance will be able to add product in the product instance with product details.

Service Sequence Diagram

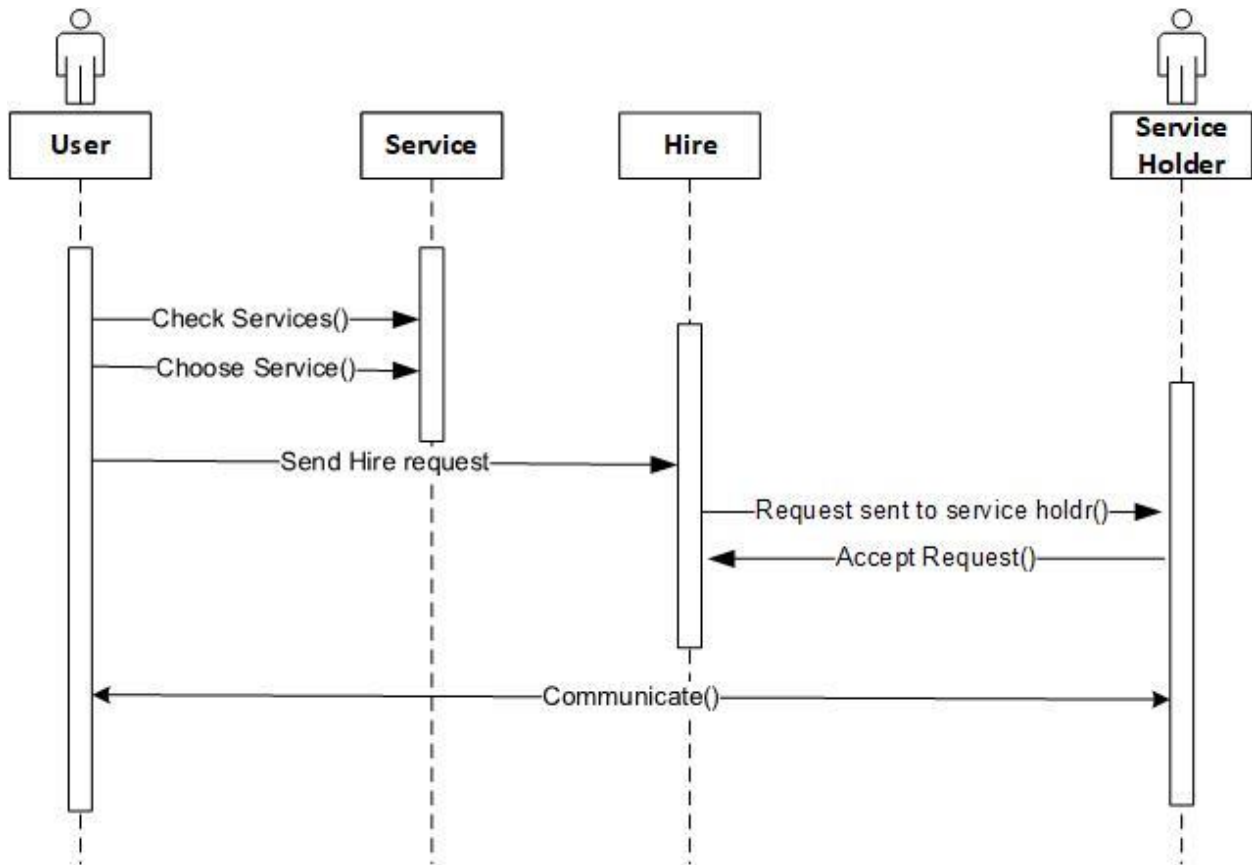


Figure 19: Service sequence diagram

Authenticated clients' user instance will check and choose services from service instance. Then, the clients' user instance will send request to hire instance for hiring a service. The hire instance will pass the request to the service holders' user instance. If the service holder accepts the hiring request, then the client and service holder will be able to communicate with each other.

Cost-estimation diagram

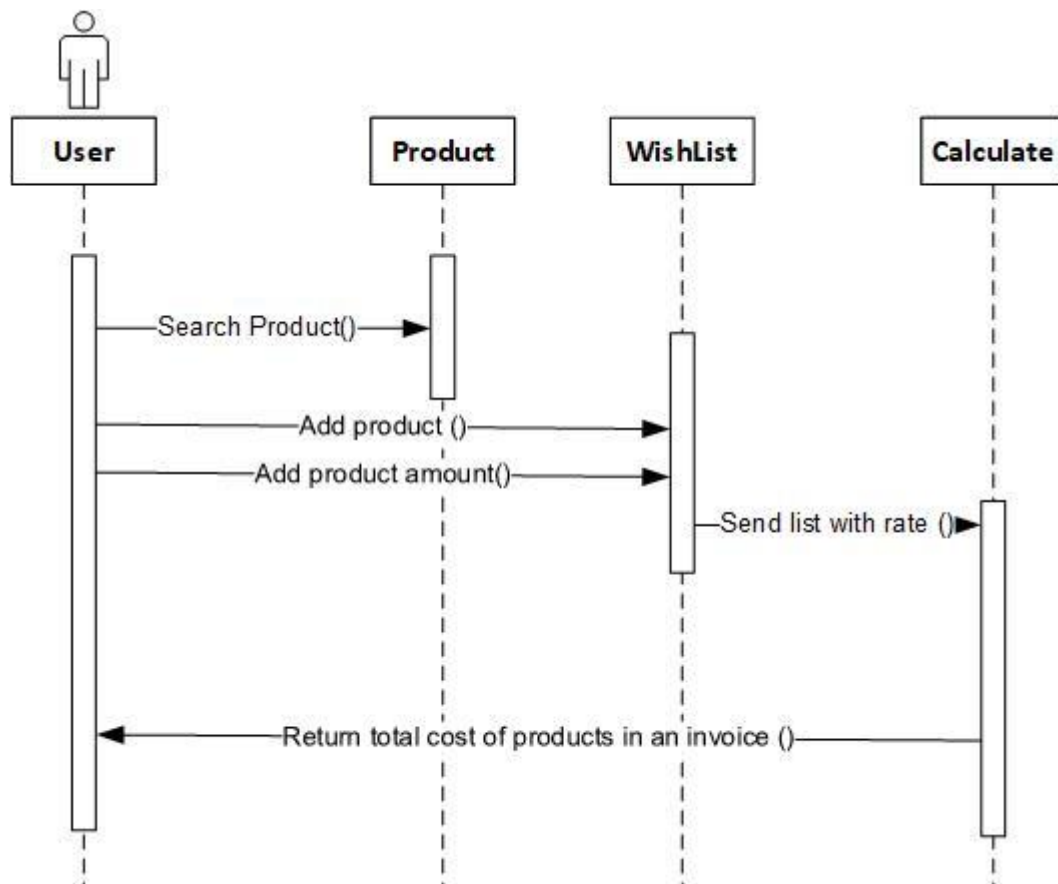


Figure 20: Cost estimation sequence diagram

Authenticated clients' user instance will be able to search and add products with the number of products in the wish-list. After that the wish-list instance send the list with the rate of products to the calculate instance for calculating the whole cost. The calculate instance will return the total cost of products to the clients' user instance in the form of invoice.

Behavioral models help to visualize the applications internal behavior. Without behavioral models, it would be too much difficult to understand the HCH web application. In fact, this diagrams help to keep the track of applications' workflow.

Interface Design / Prototype

The interface design is given below:

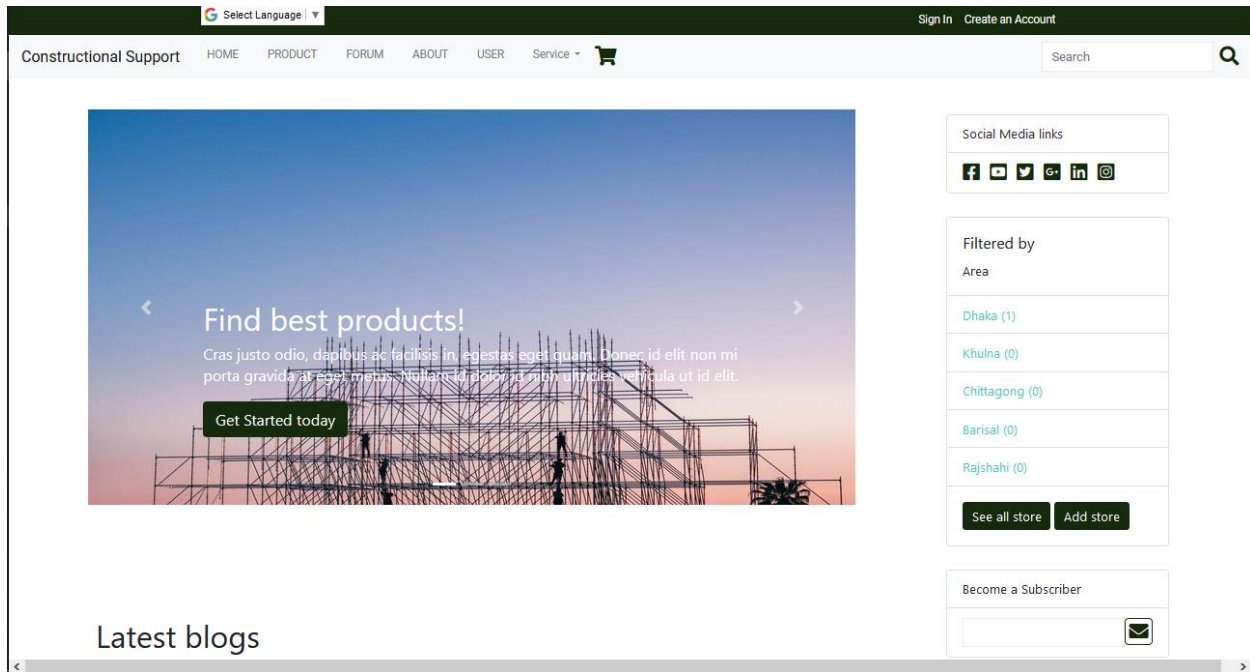


Figure 21: Project interface home page

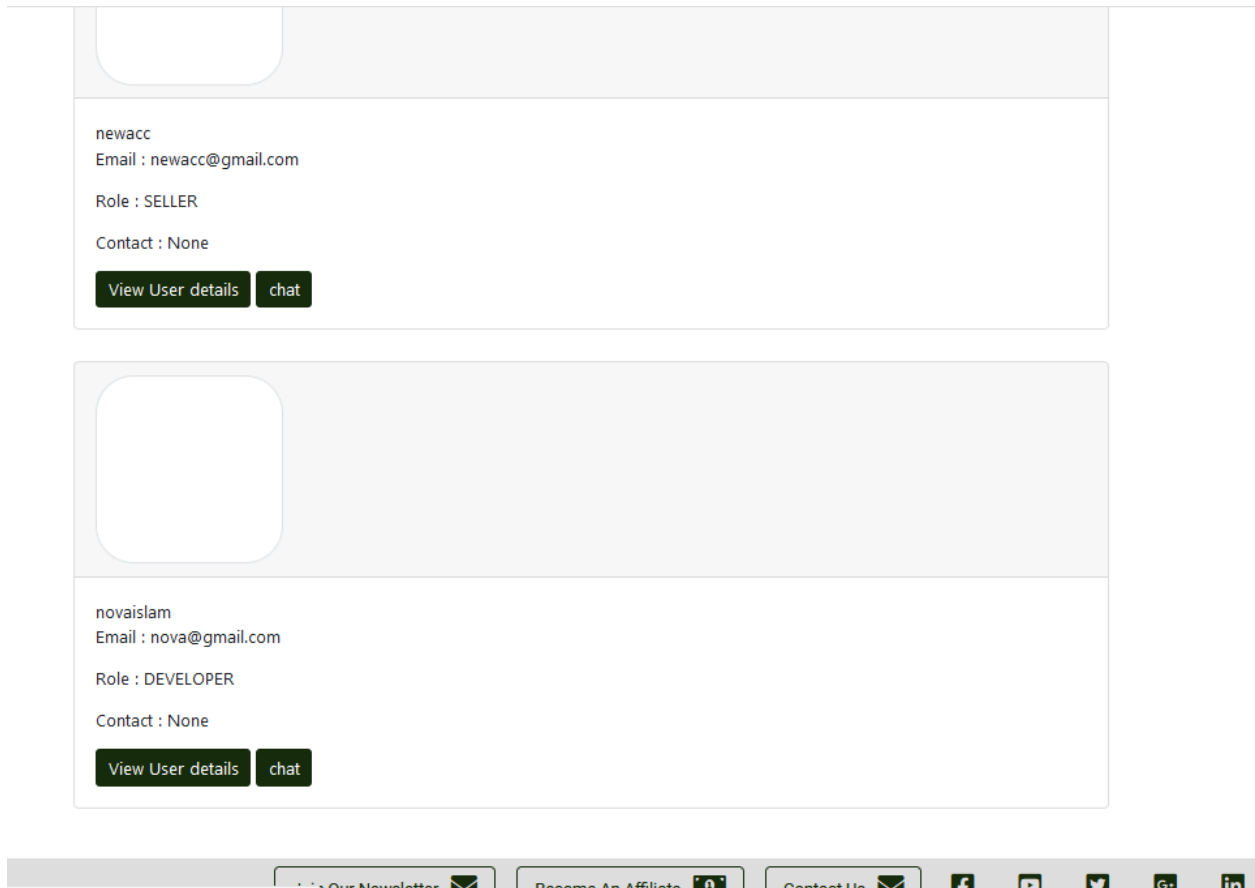




Figure 22: Project interface user list


Our Services




Consultant
Describe my self as a Consultant who can help you to suggest the best plan for your home.I love travelling and discovering new places.




Developer
describe myself as a developer who loves coding, open source, and the web platform.I love travelling and discovering new places.




Land Owner
describe myself as a developer who loves coding, open source, and the web platform.I love travelling and discovering new places.




Architect
describe myself as a developer who loves coding, open source, and the web platform.I love travelling and discovering new places.



Construction Worker
describe myself as a developer who loves coding, open source, and the web platform.I love travelling and discovering new places.



Transports
describe myself as a developer who loves coding, open source, and the web platform.I love travelling and discovering new places.



Seller's Store
describe myself as a developer who loves coding, open source, and the web platform.I love travelling and

Figure 23: Service page

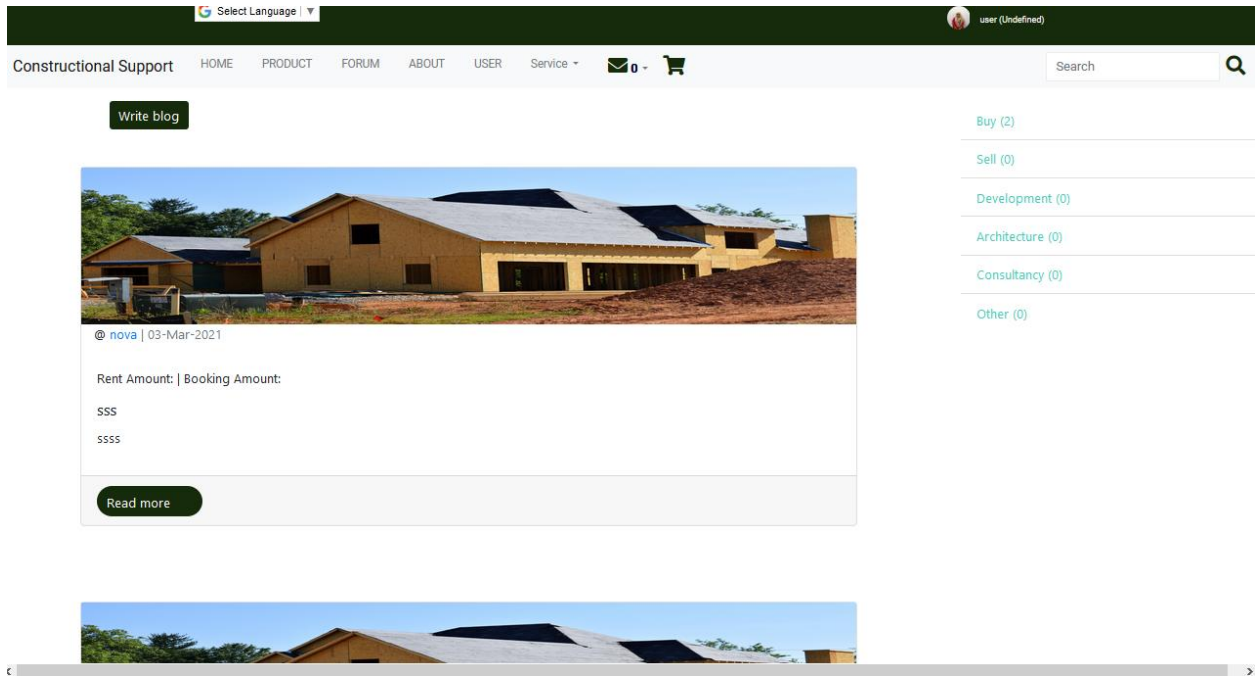


Figure 24: Blog page

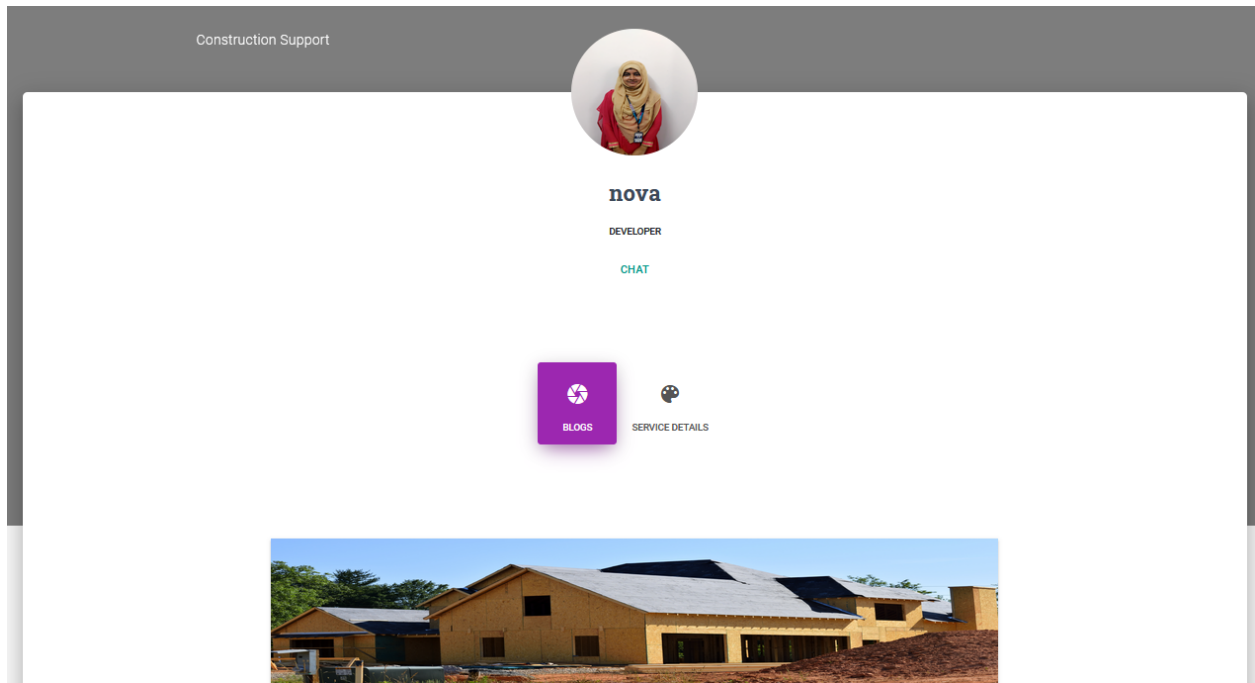


Figure 25: User Profile page

Cart (0 items)



rod 2

DESCRIPTION - 2211344

PRICE: 20

Remove item

Add to Cart

20

Figure 26: Product list

Constructional Support HOME PRODUCT FORUM ABOUT USER Service ▾ 0 1

rod 2 added to cart successfully!

My Cart

Name	Image	Quantity	Price	Description	Remove From Cart
rod 2	Profile Pic	1	20	2211344	

Figure 27: Product cart page

Give your Address and info for make purchase!

Log In

Email*

Mobile*

Address*

Login

First Add Product In Cart*

Figure 28: Login page

ata won't be recorded

Payment Details

CARD NUMBER Remember

EXPIRY DATE CV CODE

Final Payment: 20 ₹

Figure 29: Payment page

Payment Successful !

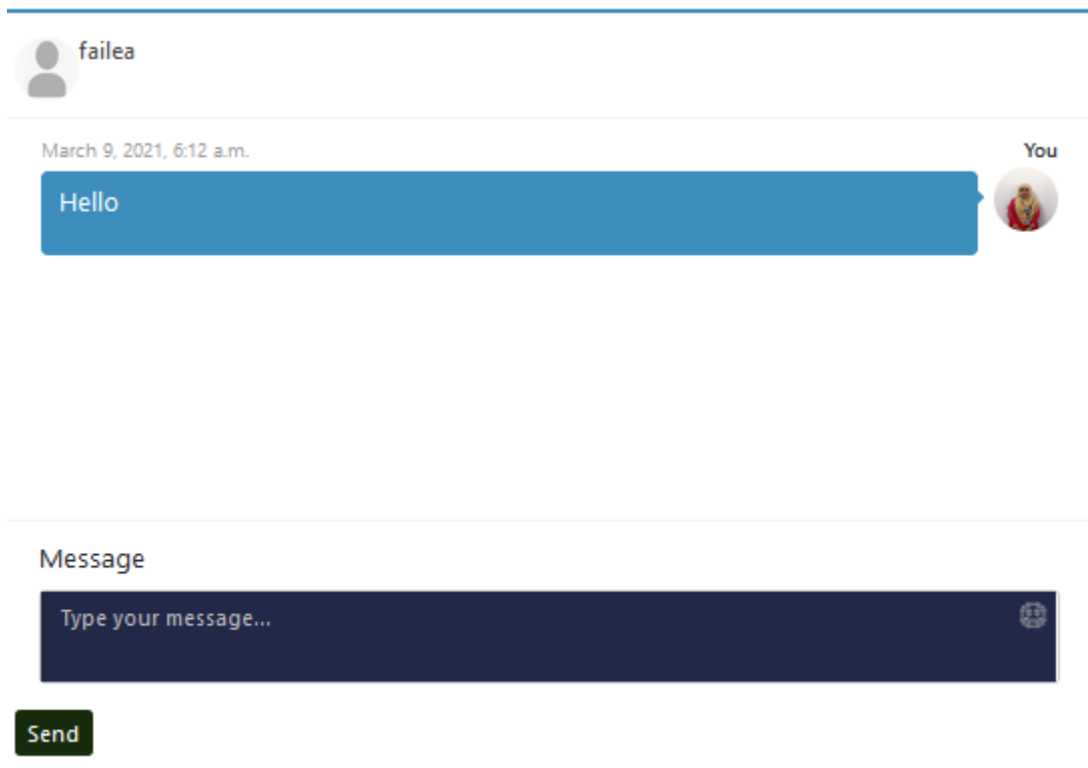
We are delighted to inform you that we received your payments



The screenshot shows an invoice page with the following details:

- Image:** A product image of a red and white box labeled "SHAH".
- Shipment Address:** dhaka
- Status:** Pending
- Name:** rod 2
- Description:** 2211344
- Price:** 20
- Action:** [Download Invoice](#)
- Order Status:** Order Pending (with a sad face icon)

Figure 30: Invoice page



The screenshot shows a chat interface with the following elements:

- Contact Name:** failea
- Date/Time:** March 9, 2021, 6:12 a.m.
- Message:** Hello
- Sender:** You (with a profile picture)
- Input Field:** Type your message...
- Send Button:** Send


Figure 31: Chat box page

Messages

failea : Hello
(0 minutes ago)

See all messages

All Messages

 [FAILEA](#)
[Hello](#)

March 9, 2021, 6:12 a.m.

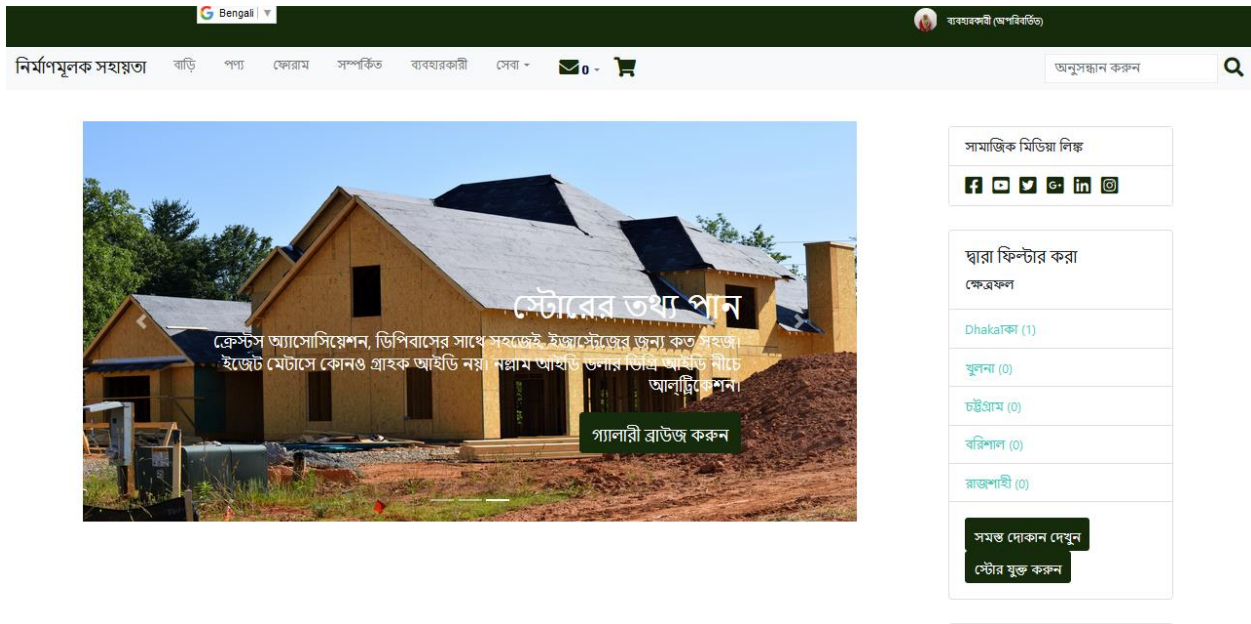
Select Language

Afrikaans	Catalan	Estonian	Hausa	Japanese	Latvian	Mongolian	Russian	Spanish	Ukrainian
Albanian	Cebuano	Filipino	Hawaiian	Javanese	Lithuanian	Nepali	Scots Gaelic	Sundanese	Urdu
Amharic	Chichewa	Finnish	Hebrew	Kannada	Luxembourgish	Norwegian	Serbian	Swedish	Uzbek
Arabic	Chinese (Simplified)	French	Hindi	Kazakh	Macedonian	Odia (Oriya)	Sesotho	Tajik	Vietnamese
Armenian	Chinese (Traditional)	Frisian	Hmong	Khmer	Malagasy	Pashto	Shona	Tamil	Welsh
Azerbaijani	Corsican	Galician	Hungarian	Kinyarwanda	Malay	Persian	Sindhi	Tatar	Xhosa
Basque	Croatian	Georgian	Icelandic	Korean	Malayalam	Polish	Sinhala	Telugu	Yiddish
Belarusian	Czech	German	Igbo	Kurdish (Kurmanji)	Maltese	Portuguese	Slovak	Thai	Yoruba
Bengali	Danish	Greek	Indonesian	Kyrgyz	Maori	Punjabi	Slovenian	Turkish	Zulu
Bosnian	Dutch	Gujarati	Irish	Lao	Marathi	Romanian	Somali	Turkmen	

Filtered by Area

Dhaka (1)

Figure 32: Multi lingual option



Chapter – 10: Deployment / Development

Core Module Coding Samples

Code of User account and profile:

Model.py

```

class UserProfile(models.Model):
    BUYER = 0
    SELLER = 1
    DEVELOPER = 2
    LAND_OWNER = 3
    CONSULTANT = 4
    ARCHITECT = 5
    ACCOUNT_TYPE_CHOICES = (
        (BUYER, "Buyer"),
        (SELLER, "Seller"),
        (DEVELOPER, "Developer"),
        (LAND_OWNER, "Land Owner"),
        (CONSULTANT, "Consultant"),
        (ARCHITECT, "Architect"),
    )
    user = models.OneToOneField(
        settings.AUTH_USER_MODEL, on_delete=models.CASCADE, unique=True, related_name='profile', verbose_name='user')
    slug = models.SlugField(unique=True, verbose_name='slug')
    account_type = models.PositiveSmallIntegerField(choices=ACCOUNT_TYPE_CHOICES, verbose_name='account type', blank=True, null=True)
    docfile = models.FileField(default="images/defaultprofile.png", null=True, blank=True)
    nid = models.CharField(max_length=15, blank=True, null=True)
    profile_photo = models.ImageField(default="images/defaultprofile.png", null=True, blank=True)
    contact = models.CharField(max_length=15, blank=True, null=True)
    is_accepted = models.BooleanField(default=False, verbose_name="is accepted")
    
```

```

@receiver(post_save, sender=settings.AUTH_USER_MODEL)
def create_or_update_user_profile(sender, instance, created, **kwargs):
    username = instance.username.lower()
    slug_binding = username+'-'+time_str_mix_slug()
    try:
        request = RequestMiddleware(get_response=None)
        request = request.thread_local.current_request
        account_type = request.POST.get("account_type")
        docfile = request.FILES.get("docfile")
        nid = request.POST.get("nid")
        print(docfile)
        if created:
            UserProfile.objects.create(user=instance,nid=nid,docfile=docfile, account_type=account_type, slug=slug_binding)
    except AttributeError:
        if created:
            UserProfile.objects.create(
                user=instance, slug=slug_binding
            )
    instance.profile.save()

class Notice(models.Model):
    date = models.DateField(auto_now=True)
    by = models.CharField(max_length=20, null=True, default='constructional Support')
    message = models.CharField(max_length=500)

```

Forms.py

```

class CustomSignupForm(SignupForm):
    NONE = ''
    BUYER = 0
    SELLER = 1
    DEVELOPER = 2
    LAND_OWNER = 3
    CONSULTANT = 4
    ARCHITECT = 5
    ACCOUNT_TYPE_CHOICES = (
        (NONE, '--- Select Account Type ---'),
        (BUYER, "Buyer"),
        (SELLER, "Seller"),
        (DEVELOPER, "Developer"),
        (LAND_OWNER, "Land Owner"),
        (CONSULTANT, "Consultant"),
        (ARCHITECT, "Architect"),
    )
    account_type = forms.ChoiceField(
        choices=ACCOUNT_TYPE_CHOICES, label="Account Type", initial='',
        widget=forms.Select(), required=True)
    nid = forms.CharField(label="Plase give your NID number")
    docfile = forms.FileField(label='Your file', help_text='max. 42 megabytes')

    def signup(self, request, user):
        user.save()

```

Views.py

```

# Signup view
class CustomSignupView(SignupView):

    def form_valid(self, form):
        self.user = form.save(self.request)
        return redirect('/')

# After login view
def after_signup(request):
    template_name = 'user-dashboard/user_wait_for_approval.html'
    return render(request, template_name, {})

# User Profile update view
@login_required
def user_detail(request, pk=None):
    if pk:
        requested_user = get_object_or_404(User, id=pk)
    else:
        requested_user = request.user

```

Signup view interface design:

```

{% block head_title %}{% block page_title %}
Sign up
{% endblock %}{% endblock %}

{% block content %}
<div class="jumbotron col-sm-10 col-md-10 col-lg-8 col-xl-6 offset-sm-1 offset-md-1 offset-lg-2 offset-xl-1"
    <form method="POST" action="{% url 'account_signup' %}" data-toggle="validator"
        enctype="multipart/form-data">
        {% csrf_token %}
        <!-- Custom signup form -->
        {% include 'pages/account-form.html' %}
        <a href="{% url 'account_reset_password' %}" class="pull-right mt-xs"><small>Forgot password?</small></a>
        <button type="submit" class="btn btn-info">Sign up</button>
        <div class="line line-dashed"></div>
        <p class="text-muted text-center"><small>Already have an account?</small></p>
        <a href="{% login_url %}" class="btn btn-primary btn-block">Login</a>
    </form>
</div>
{% endblock %}


```

Signup User interface:

E-Mail

Username

Account Type

Plase Give Your Nid Number

Your File

max. 42 megabytes

Password

Password (Again)

[Forgot password?](#)

[Already have an account?](#)

Possible problem break down

In time of developing a project, a lot of problems has to be faced. A prioritization list be followed for solving the problems.

Design of Databases:

It is an important part to get the attributes, relationship among them. It helps to make database well-structured.

Development:

The system should be implement using the latest technology and make sure the proper validation of the system.

Validation & Verification:

The test scripts should be written by following the system requirements and the outcomes should be matched with the business requirements.

Interface design:

The interface should be designed with appropriate functionalities. And it should be user friendly that means the user should understand the functionalities and usability very easily.

Chapter – 11: Testing

Test Case

The test that is done depending on some predefined criteria of system feature is called test case. The features quality is measured by using this test case template. The test case template is created below:

Test Case ID		
Test Name		
Test Type		
Priority		
Pre-condition		
Post-condition		
steps	Expected Result	Actual Result

Unit Testing (2 to 3)

Unit test: 1		Test name: Validation for User Registration	Designed by: Fahima Nizam Nova	
Data source: user Entry		Objective: register user	Tester: Fahima Nizam Nova	
Test case	Description	Tasks	Expected result	Actual result
1.1	Register new user	Enter users' basic info: Name: Nova Email: nova@gmail.com Password: 12345678@# Confirm Password: 12345678@#	Register and data insert in the database.	Register and data insert in the database.

E-Mail

Username

Account Type

Plase Give Your Nid Number

Your File

max. 42 megabytes

Password

Password (Again)

Sign up [Forgot password?](#)

[Already have an account?](#)

Login

Unit test: 2	Test name: Validation for User log in	Designed by: Fahima Nizam Nova
Data source: user Entry	Objective: Login user	Tester: Fahima Nizam Nova

Test case	Description	Tasks	Expected result	Actual result
1.2	Login to the user account and go to the user profile.	Enter users' basic info: User email: nova@gmail.com Password: *****	Login and go to profile(if approved).	Login and don't login as the profile is not approved yet.

Not allowed! Account is not accepted by the admin!

The e-mail address and/or password you specified are not correct.

E-Mail

nova@gmail.com

Password

••••••••••

Remember Me

Login

[Forgot password?](#)

If you have not created an account yet, then please [sign up](#) first.

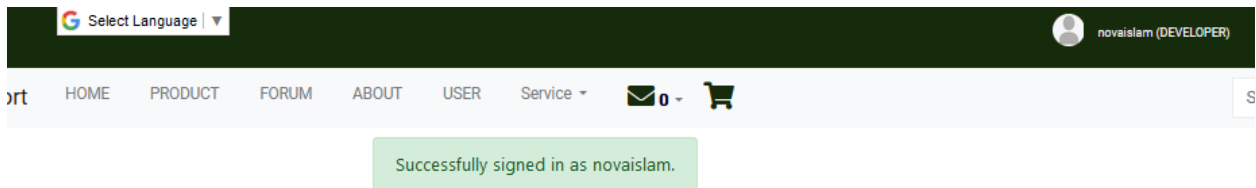
[Don't have an account?](#)

Create an account

Total User List				
Name	Account Type	Profile Photo	Update	Delete
failea	DEVELOPER			
resssss	DEVELOPER			
nova	DEVELOPER			
newacc	SELLER			

Pending User List					
Name	Account Type	Profile Photo	Approve	Update	Delete
aaaaaaa	Undefined				
novaislam	DEVELOPER				

As the user is pending yet. So, she/he can't login to the system until it approved by the admin. After being approved user can login as below.



Unit test: 3		Test name: Store register		Designed by: Fahima Nizam Nova	
Data source: user Entry		Objective: store register		Tester: Fahima Nizam Nova	
Test case	Description	Tasks		Expected result	Actual result
1.2	Login to the user account and go	Enter users' basic info: Store name: Constructional products limited Store address: Dhaka		Create store profile	Create store profile

	to the user profile.	Seller type: Manufacturer Location: Dhaka Products: cement, sand, tmt		
--	----------------------	---	--	--

Store form

Seller type*

- Manufacturer
 Authorised Dealer
 Distrubutor
 Dealer

Store name*

Constructional products limited

Store address*

Dhaka

Area*

Dhaka

- Cement
 Sand & Aggregates
 TMT Steel Bars

Submit

Constructional products limited information saved!

Module Testing (2 to 3)

Module test: 1		Test name: Module test of user form	Designed by: Fahima Nizam Nova	
Data source: user Entry		Objective: Validation of user signup data	Tester: Fahima Nizam Nova	
Test case	Description	Tasks: : Signup data entry	Expected result	Actual result
1.2	Login to the user account and go to the user profile.	Signup, login, go to user profile: Username: Nova Email: nova@gmail.com Password: 12345678@# Re-password: 123458	System show invalid data.	Invalid message shown as expected.

E-Mail

nova@gmail.com

A user is already registered with this e-mail address.

Username

novaislam

A user with that username already exists.

Account Type

Seller

Plase Give Your Nid Number

18496789

Your File

Browse... No file selected.

max. 42 megabytes

Password

Password

Password (Again)

Password (again)

You must type the same password each time.

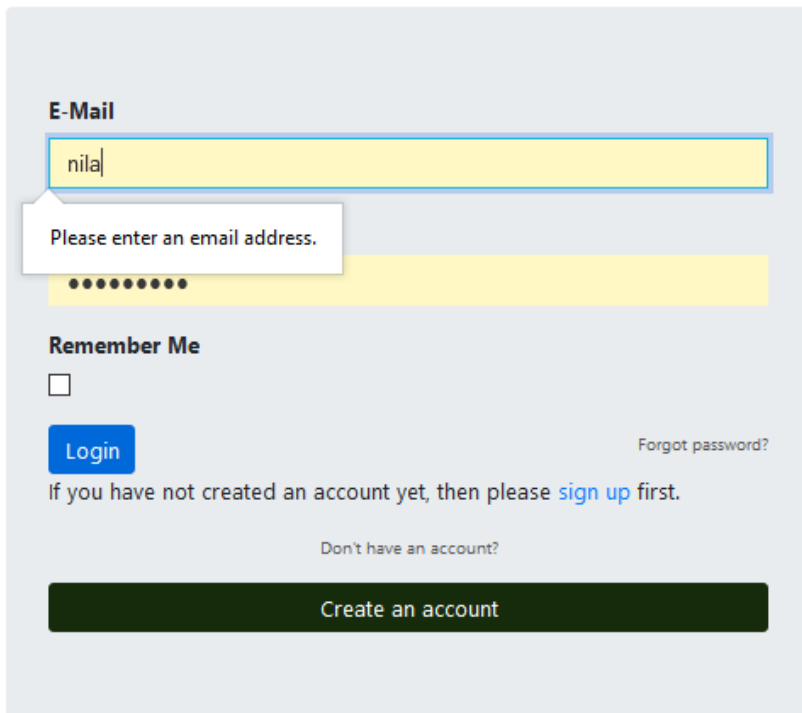
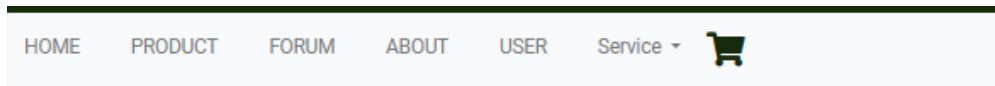
[Sign up](#) [Forgot password?](#)

[Already have an account?](#)

[Login](#)

Module test: 2	Test name: Module test of user login form	Designed by: Fahima Nizam Nova
Data source: user Entry	Objective: Validation of user login data	Tester: Fahima Nizam Nova

Test case	Description	Tasks: : login data entry	Expected result	Actual result
1.2	Login to the user account and go to the user profile.	login Email: nila (it is not an email) Password: 12345678@#	System show invalid data.	Invalid message shown as expected.



Module test: 3	Test name: Module test of user login access form	Designed by: Fahima Nizam Nova
Data source: user Entry	Objective: Validation of user login access data	Tester: Fahima Nizam Nova

Test case	Description	Tasks: : login data entry	Expected result	Actual result
1.2	Login to the user account and go to the user profile.	login Email: nova@gmail.com Password: 12345678@#	System show message that this account is not approved.	message shown as expected.

Not allowed! Account is not accepted by the admin!

The e-mail address and/or password you specified are not correct.

E-Mail

nova@gmail.com

Password

••••••••••

Remember Me

Login

[Forgot password?](#)

If you have not created an account yet, then please [sign up](#) first.

[Don't have an account?](#)

Create an account

Integration Testing (2 to 3)

Integration test: 1		Test name: System Control with Authentication	Designed by: Fahima Nizam Nova	
Data source: user Entry		Objective: Login access user	Tester: Fahima Nizam Nova	
Test case	Description	Tasks: : Signup, login and go to user profile	Expected result	Actual result

1.2	Login to the user account and go to the user profile.	Signup, login, go to user profile: Username: Nova Email: nova@gmail.com Password: 12345678@#	Successfully logged in and went to user profile.	Successfully logged in and went to user profile.
-----	---	---	--	--

E-Mail

Username

Account Type

Plase Give Your Nid Number

Your File

max. 42 megabytes

Password

Password (Again)

Sign up

[Forgot password?](#)

[Already have an account?](#)

Login

Not allowed! Account is not accepted by the admin!

The e-mail address and/or password you specified are not correct.

E-Mail

nova@gmail.com

Password

••••••••••

Remember Me

Login

[Forgot password?](#)

If you have not created an account yet, then please [sign up](#) first.

[Don't have an account?](#)

Create an account

Total User List				
Name	Account Type	Profile Photo	Update	Delete
failea	DEVELOPER			
resssss	DEVELOPER			
nova	DEVELOPER			
newacc	SELLER			

Pending User List					
Name	Account Type	Profile Photo	Approve	Update	Delete
aaaaaaa	Undefined				
novaislam	DEVELOPER				

Select Language | novaislam (DEVELOPER)

HOME PRODUCT FORUM ABOUT USER Service - 0

Successfully signed in as novaislam.

Integration test: 2		Test name: Store update	Designed by: Fahima Nizam Nova	
Data source: user Entry		Objective: Store modify	Tester: Fahima Nizam Nova	
Test case	Description	Tasks: : change info and save.	Expected result	Actual result
1.2	Login to the user account and go to the user profile.	Enter users' basic info: Store name: Constructional lmt. Store address: Dhaka Seller type: Manufacturer Location: Dhaka Products: cement, sand	Successfully updated the information.	Successfully updated the information.

Store Name: Constructional products limited

Dhaka

Owner:Nova

Dhaka

[Store details](#)

Store Name: Constructional products limited

Dhaka

Seller type: Distrubutor

Owner: Nova

Dhaka

Selling Products

Store Detail

1. Cement
2. Sand & Aggregates
3. TMT Steel Bars

[update](#)

- Manufacturer
- Authorised Dealer
- Distrubutor
- Dealer

Store name*

Constructional lmt.

Store address*

Dhaka

Area*

Dhaka

- Cement
- Sand & Aggregates
- TMT Steel Bars

Currently selling products:

Cement | Sand & Aggregates | TMT Steel Bars |

Submit

Constructional lmt. information updated!

Store Name: Constructional Int.

Dhaka

Seller type: Distrubutor

Owner: Nova

Dhaka

Selling Products

Store Detail

1. Cement

2. Sand & Aggregates

Integration test: 3		Test name: User profile update	Designed by: Fahima Nizam Nova	
Data source: user Entry		Objective: User Profile Update	Tester: Fahima Nizam Nova	
Test case	Description	Tasks: : change info and save.	Expected result	Actual result
1.2	Login to the user account and go to the user profile.	Enter users' basic info: User name: Fahima Nizam Nova User Type: Consultant	Successfully updated the information.	Successfully updated the information.



Update Profile

Username*

user

Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.

Email*

user@gmail.com

Account type



Docfile

Currently: [documents/2021/03/02/BeautyPlus_20180629213429_fast.jpg](#)

Clear

Change:

No file selected.


Nid

Profile photo

Currently: [BeautyPlus_20170829140752_fast_cA2MNz7.jpg](#) Clear

Change:

No file selected.



Update Profile

Username*

Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.

Email*

Account type

Docfile

Currently: [documents/2021/03/02/BeautyPlus_20180629213429_fast.jpg](#)

Clear

Change:

 No file selected.

Nid

Profile photo

Currently: [BeautyPlus_20170829140752_fast_ca2MNz7.jpg](#) Clear

Change:

 FahimaNizamNova.jpg

Chapter – 12: Implementation

Training

The training session is for the end-users who will use the system. In this session the process of the system is described to the users.

User registration

Training Area	Time Limit	Description
Find Users' related to construction and make them understand about the signup page in a scheduled time.	Around 1 hour	User learn how to select their role, how to upload reliable document and wait for the approval.

Product Cart and make order

Training Area	Time Limit	Description
Show the users how to add product to cart and order.	Around 45 minutes	User learn how to select and add product to cart, how to remove product from cart and how to order them.

Blog, workers and store

As users' will be able to add blog for finding his/her necessary service or products, add store if he/she is a seller, add his/her known workers so they should be train up about how they can add them

Training Area	Time Limit	Description
Show the users how to add blog, store and workers.	Around 45 minutes	User learn how to add blog, store and workers.

Big Bang (no pilot, parallel implementation scheme)

Big bang is about running the new one by turning off the old system. This is a change to data loss of the system because it is much quicker process than others. As it is a very simple scheme, there is no need to implement that much planning. It is a very high risk model as it works on an existing system, so requirements could be misunderstood. This system is updated using this model. So the advantages and disadvantages has been explained below:

Advantages:

- Simple and easy to maintain
- No need to make big planning

- Flexible for development
- Few resources are required.

Disadvantages:

- Possibility of misunderstanding
- Risk of uncertainty
- Not good for large project

Chapter – 13: Critical Appraisal and Evaluation

The success and critical analysis of the project is described in this section. The project evaluation is also explained in this part.

Objective that could be met

As the time was limited, it was little difficult to implement all the process. The project should be or could be more user friendly if the time was not bound in a limit. But the identified requirements have been implemented

Success rate against each objective

The success rate for each objectives has been given in a table and the rate is given in percentage:

User friendly	The interface and functionalities are understandable.	98%
Functionality	Met with the requirements	95%
Security	The security of users and system has been maintained fully	100%
Performance	The systems' functionalities are responding as required in a very short time.	90%
Completion time	The system has been completed in the fixed time.	100%

How much better could have been done

The system has been developed according to the proposal. The system will provide the same service and support that was given in the project proposal.

- ✓ Functional and Non-functional requirements met
- ✓ The interface is user-friendly
- ✓ Authentication and verification is done successfully.
- ✓ Better user collaboration can get
- ✓ Better user interaction
- ✓ Can easily find anything related to the system

How better is the features of the solution?

The system is implemented with all the key features that was identified at the initial stage of the project.

- The user can sign up easily with necessary info and doc file.
- User can easily enter into the system after being approved.
- User can add product to cart.
- User can make order by make payment and giving shipment info.
- Users can talk with each other via chat app
- User can see other users profile and activity
- User can see category and area wise service
- User can post in the blog site for finding his/her necessary things

Which features could not be touched

There are many features that could be added for completing this system fully. As it takes a lot of time, they are eliminated for now. There are many programs for making this system more dynamic and user friendly. The features and programs that will be added in further development is:

- User will be able to find the nearest service and store using notifications.
- User will be able to call workers via the system
- Up-to-date product information such as current price.

- Updated bank loan information
- Chat bot for giving automated information.
- Mobile application or different devices access would be implemented.

Chapter – 14: Conclusion

Summary of the project

The project is implemented within four months according to the requirements that I found out at first. The project is developed based on constructional supports and elements. The project will provide necessary services such as consultancy, store, architectural support, technical support and transportation support. The users will be able to communicate with different service provider via this system. As the system is making the authentication process strictly, so the system is reliable for the user. User will be able to find his/her nearest store or service by filtering them according to the area. User will be able to post about his/her necessity and find the blogs related to his requirements by filtering the blogs according to the topic. The user will be able to add products from the product page and make purchase by making payment. The system will provide the users' all type of support as requirements and users will be able to suggest their further requirements via feedback and contact us page and the system will be up to date according to the valid requirements.

Goal of the project

The system idea came into my mind as the solution of construction support. The goals are:

- Reduce time and money wastage
- Make comfort zone for users
- Make reliable online based constructional Support
- Make working opportunities for the people occupied on construction
- Make a common platform for the people who is related to construction

My Experience

In time of doing my project I have got a lot of error and bugs in my code. Whenever I solve a bug, I have learned a new part of coding. In time of gathering features and

Chapter-15: Appendices

Appendix – 1

Test Scripts

Unit test: 4		Test name: Create a blog	Designed by: Fahima Nizam Nova	
Data source: user Entry		Objective: Create a blog	Tester: Fahima Nizam Nova	
Test case	Description	Tasks	Expected result	Actual result
1.4	Create a blog by the approved user.	Name: Need a land Description: I need a land near Khulna Topic: Buy Area: Khulna	Create blog and post successfully	Create blog and post successfully

Blog

Blog title*

Need a land

Content*

I need a land near Khulna

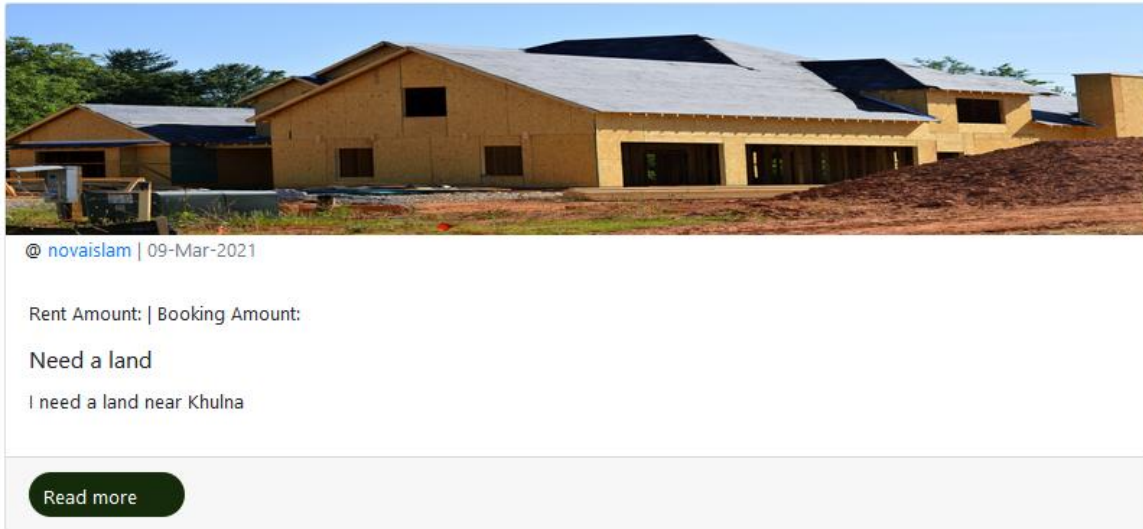
Topic*

Buy

Area*

Khulna

Post



Appendix – 2

User Guide

In order to use “Home Coming Home” website a user must follow the following operations and their steps:

User Profile:

1. Go to the user registration form page.
2. Fill-out the form properly.
3. Choose user type.
4. Submit form to the server.
5. To update go to Profile page
6. Fill out the changes and choose user profile picture.
7. Press submit button.

Filtering service according to area:

1. Go to sidebar of the user or service page.
2. Select the location.
3. Search the particular user from the searching bar.

Store Registration:

1. Go to store registration page.

2. Fill out the registration form.
3. Wait for the store approval.
4. To update click on the store.
5. Change according to the criteria.
6. To delete press the delete option

Filtering Store according to the area:

1. Go to Store page or home page's sidebar.
2. Select the location.
3. Select the particular store for knowing more.
4. Dynamic searching option is also available from where a particular store can be found.

Blog writing and other operations:

1. Go to write blog form page.
2. Fill out the blog form properly.
3. Submit the form to the server.
4. Wait until the approval of the blog.
5. Finally, see it on the blogs page.
6. Go to blog detail.
7. If blog owner edit and delete button will appear.
8. To update press update button and update the blog from the blog form.
9. To delete the blog press delete button and confirm the delete blog.

Comment on a blog operation:

1. Go the detail of a blog.
2. Write the comment in the comment form section.
3. Press submit button.
4. If comment owner delete button will appear.
5. Press the delete button to delete the comment.

Blog's dynamic search:

1. Got to blog list page.
2. Fill the search box with the text.
3. Click the search button

Appendix – 6

System Code

Homepage:

```
{% extends 'base.html' %}
{% load static %}

{% block content %}
<div class="row">
  <div class="col-xl-10 offset-xl-1">
    {% include 'carousel.html' %}
    <!--start blogs-->
    <p class="blog-list">
      <!-- {{blog.title}} -->
    </p>
    <section class="blogs" id="blog">
      <div class="container">
        <div class="row">
          <div class="section-title text-center">
            <h1>Latest blogs</h1>
          </div>
        </div>
        <div class="row">
          <div class="blogs-content">
          </div>
        </div>
      </div>
    </section>
    <!--end blogs-->
  </div>
</div>
```

User profile:

```

{% load static %}
<head>
  <link rel="stylesheet" href="{% static 'profile/style.css' %}">
  <link rel="stylesheet" href="{% static 'profile/glfont.css' %}">
  <link rel="stylesheet" href="{% static 'profile/boot.min.css' %}">
  <link rel="stylesheet" href="{% static 'css/fontawesome.min.css' %}">
  <link rel="stylesheet" type="text/css" href="{% static 'profile/gl2font.css' %}">
  <link rel="stylesgeet" href="{% static 'profile/style2.css' %}">
</head>

<body class="profile-page">
<nav class="navbar navbar-color-on-scroll navbar-transparent fixed-top navbar-expand-lg " color-on-scroll="100"
  id="sectionsNav">
  <div class="container">
    <div class="navbar-translate">
      <a class="navbar-brand" href="{% url 'service_app:service' %}">Construction Support</a>
    </div>
  </div>
</nav>

<div class="page-header header-filter" data-parallax="true"
  style="..">
</div>
<div class="main main-raised">
  <div class="profile-content">

```

Product:

```

{% extends 'base.html' %}
{% load static %}
{% block content %}
{%if products%}
<h3 style="..">{{word}}</h3>
<br>
<!-- products data start -->
<div class="container">
  <div class="row">
    {% for p in products %}
    <!--Grid column-->
    <div class="col-lg-8">
      <!-- Card -->
      <div class="mb-3">
        <div class="pt-4 wish-list">
          <h5 class="mb-4">Cart (<span>{{ product_count_in_cart }}</span> items)</h5>
          <hr class="mb-4">
          <div class="row mb-4">
            <div class="col-md-5 col-lg-3 col-xl-3">
              {% if p.product_image %}
              <div class="view zoom overlay z-depth-1 rounded mb-3 mb-md-0">
                
              </div>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
</div>

```

Store:

```

{% block content %}
  <div class="row">
    <div class="col-xl-10 offset-xl-1">
      <a href="{% url 'product_app:store-form' %}" class="btn btn-primary">add stores</a>
      {% for store in store_list %}
        <div class="card">
          <div class="card-header">
            <span>Store Name:</span> {{ store.store_name }}
          </div>
          <div class="card-body">
            <h5 class="card-title">{{ store.get_area_display }}</h5>
            <p class="card-text">Owner:{{ store.store_owner.username }}</p>
            <p class="card-text">{{ store.store_address }}</p>
            <a href="{% url 'product_app:store-detail' store.pk %}" class="btn btn-primary">Store details</a>
          </div>
        </div>
      {% endfor %}
    </div>
  </div>
{% endblock content %}
{% block addsidebar %}
  {% include 'sidebar.html' %}

```

Blog:

```

{% extends 'base.html' %}
{% load static %}

{% block content %}
<div class="container">
  <div class="row">
    <div class="col-10 offset-1">
      <a href="{% url 'blog_app:blog_form' %}" class="btn btn-primary">Write blog</a>
    </div>
  </div>
</div>
<!-- Card -->
{% for blog in blog_list %}
<div class="row">
  <div class="col-10 offset-1">
    <div class="card card-cascade wider my-5">
      
      <div class="card-title pl-3">
        <span>@ <a href="{% url 'user-profile' blog.author.pk %}"> {{blog.author.username}}</a><span
          class="text-muted"> | {{ blog.timestamp|date:'d-M-Y' }}</span></span>
      </div>
      <div class="card-body">
        <p>Rent Amount: {{ blog.rent_amount }} | Booking Amount: {{ blog.booking_amount }}</p>
        <p class="card-title h5">{{ blog.blog_title }}</p>

```

Chapter-16: References

Plagiarism Report of Project Report

<h2>Turnitin Originality Report</h2> <p>Processed on: 09-Mar-2021 14:56 +06 ID: 1528252539 Word Count: 9360 Submitted: 1</p> <p>Fahima_Nizam_Nova_183-16-384.pdf By Anonymous</p>		<table border="1"> <tr> <td>Similarity Index</td> <td>15%</td> </tr> </table>	Similarity Index	15%	<table border="1"> <tr> <th colspan="2">Similarity by Source</th> </tr> <tr> <td>Internet Sources:</td> <td>0%</td> </tr> <tr> <td>Publications:</td> <td>0%</td> </tr> <tr> <td>Student Papers:</td> <td>15%</td> </tr> </table>	Similarity by Source		Internet Sources:	0%	Publications:	0%	Student Papers:	15%
Similarity Index	15%												
Similarity by Source													
Internet Sources:	0%												
Publications:	0%												
Student Papers:	15%												

<p>5% match (student papers from 04-Nov-2019) Submitted to NCC Education on 2019-11-04</p>
<p>3% match (student papers from 04-Nov-2019) Submitted to NCC Education on 2019-11-04</p>
<p>1% match (student papers from 30-Jul-2020) Class: Final_Project_Spring 2020 Assignment: Final_Project_Spring_2020 Paper ID: 1363960066</p>
<p>1% match (student papers from 06-Jan-2019) Submitted to University of Greenwich on 2019-01-06</p>
<p>< 1% match (student papers from 30-Jul-2020) Class: Final_Project_Spring 2020 Assignment: Final_Project_Spring_2020 Paper ID: 1363960059</p>
<p>< 1% match (student papers from 25-Apr-2008) Submitted to University of Northumbria at Newcastle on 2008-04-25</p>
<p>< 1% match (student papers from 29-Dec-2019) Class: Final_project_Fall2019 Assignment: Project_Fall_2019 Paper ID: 1238621981</p>
<p>< 1% match (student papers from 08-May-2016) Submitted to Laureate Higher Education Group on 2016-05-08</p>
<p>< 1% match (student papers from 30-Jul-2020) Class: Final_Project_Spring 2020 Assignment: Final_Project_Spring_2020 Paper ID: 1363960004</p>
<p>< 1% match (student papers from 25-Jan-2019) Submitted to Metropolia Ammattikorkeakoulu on 2019-01-25</p>
<p>< 1% match (student papers from 18-Dec-2017) Submitted to University of Greenwich on 2017-12-18</p>
<p>< 1% match (student papers from 17-Jun-2019) Submitted to Gulf College Oman on 2019-06-17</p>
<p>< 1% match (student papers from 19-Aug-2020) Submitted to NCC Education on 2020-08-19</p>
<p>< 1% match (student papers from 30-Jul-2020) Class: Final_Project_Spring 2020 Assignment: Final_Project_Spring_2020 Paper ID: 1363960031</p>
<p>< 1% match (student papers from 06-Dec-2016) Submitted to University of Greenwich on 2016-12-06</p>
<p>< 1% match (student papers from 19-Aug-2020) Submitted to NCC Education on 2020-08-19</p>

<p>< 1% match (student papers from 19-May-2012) Submitted to International College of Hotel Management on 2012-05-19</p>
<p>< 1% match (student papers from 13-Jan-2020) Submitted to University of Greenwich on 2020-01-13</p>
<p>< 1% match (student papers from 21-Nov-2012) Submitted to Bilkent University on 2012-11-21</p>
<p>< 1% match (student papers from 12-May-2019) Submitted to University of Sheffield on 2019-05-12</p>
<p>< 1% match (student papers from 27-Apr-2018) Submitted to University of Portsmouth on 2018-04-27</p>
<p>< 1% match (student papers from 23-Jun-2020) Class: Final_Project_Spring 2020 Assignment: Final_Project_Spring_2020 Paper ID: 1348544156</p>
<p>< 1% match (student papers from 28-Apr-2016) Submitted to University of Greenwich on 2016-04-28</p>
<p>< 1% match (student papers from 20-Jul-2009) Submitted to Middlesex University on 2009-07-20</p>
<p>< 1% match (student papers from 13-Jan-2020) Submitted to University of Greenwich on 2020-01-13</p>
<p>< 1% match (student papers from 28-Apr-2016) Submitted to University of Greenwich on 2016-04-28</p>
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