United International University

CSE 3411 - System Analysis and Design

SRS Document

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Project Name: Local e-Market

A website to sell products more quickly and profitably

1. Introduction

1.1 Project Summary:

Local e-Market is a project that makes trading in the local e-market simpler for buyers and sellers. Bidding and delivery systems are the main sources of revenue for us. We used Cash Flow Analysis and Net Present Value Analysis (NPV), as well as SWOT analysis, to determine whether our project is successful or not. We discovered that our concept was both profitable and feasible after conducting the study.

1.2 Purpose:

A feasibility study is an analysis that considers all of a project's relevant factors—including economic, technical, legal, and scheduling considerations—to ascertain the likelihood of completing the project successfully. Whether a project is feasible or not can depend on several factors, including the project's cost and return on investment, meaning whether the project generated enough revenue or sales from consumers. We complete our feasibility study to find out all mentioned information about our project.

1.3 Motivation:

Customers face problems when ordering online because there are too many categories and items to choose from.

• Our website will provide a categorical and organized way of displaying the items so that it's easy for the customers to order online.

• Customers often want to gift other customers online but its is not available on most e-commerce websites. Our system will provide that feature.

.In our website has a unique feature and it is a bidding system. Which is not available on other websites.

• Customers will get motivation from gaining experience points while purchasing items online. Which can be used for offers in buying items later on.

• Customers can track their delivery on modern e-commerce websites but, they cannot get live feedback from the delivery man, which we have decided to include as a feature.

2. Requirement Analysis

2.1 Present Scenario:

Despite the fact that there are numerous e-commerce websites available on the market today, none of them offer the option to sell at auction. However, we have provided sellers with the option to sell at auction, which has grown our client audience to new levels.

2.2 System Study

2.2.1 Benchmark study:

Features	Daraz	Evaly	Bikroy	Dhamaka Shopping	Alesha Mart	Chaldal	Local e-Market (Our Project)
1. Advance Payment	Yes	Yes	No	Yes	Yes	Yes	Yes
2. Category	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Cart System	Yes	Yes	No	Yes	Yes	Yes	Yes
4. Notification(Optional)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5. Chat	Yes	Yes	Yes	Yes	No	Yes	Yes
6. Profile	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7. Search	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8. Bidding System	No	No	No	No	No	No	Yes
9. Delivery Live Feedback	No	No	No	No	No	No	Yes
10. Delivery Within 24/48 hours(Otherwise 5% off)	No	No	No	No	No	No	Yes
11. Gifting Option	Yes	Yes	No	No	No	No	Yes
12.Review	Yes	No	Yes	No	No	Yes	Yes

2.2.2 Research Paper

We obtained all of our e-commerce knowledge from the following link.

1. Powerful Personalization in Ecommerce - No Big Data Required

2. Improve Ecommerce Site Search With Intelligent Query Suggestions
3. https://dfam.auctionmarts.com/Sales

2.2.3 Online Study

International Websites

eBay: eBay: Electronics, Cars, Fashion, Collectibles & More
Auction.com: Auction.com: Real Estate Auctions for Foreclosures and Bank Owned Properties
Copart: Salvage Cars for Sale | Online Used Car Auctions - Copart Auto Auction
For example, on eBay, A seller lists an item for sale and chooses a starting price. Then interested buyers place bids only for a specific amount of time. When the listing ends, the highest bidder wins the auction and pays for the item.

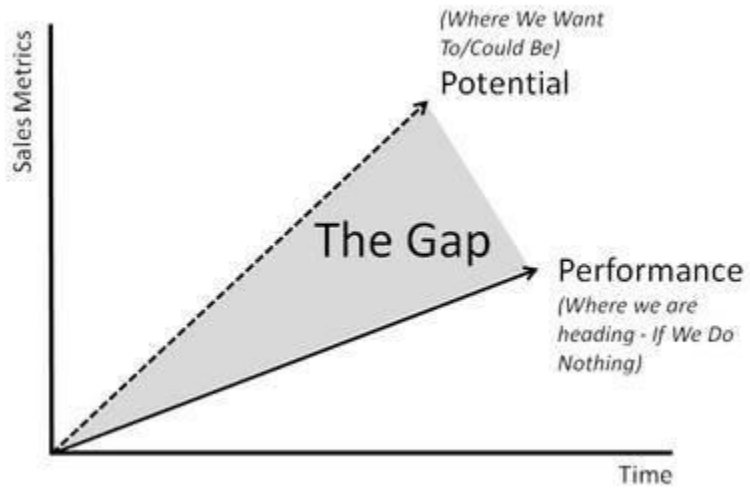
Bangladeshi Websites

Bikroy.com Bikroy.com - Electronics, Cars, Property and Jobs in Bangladesh
Daraz https://www.daraz.com.bd/
Dhamaka https://dhamakashopping.com/
Alesha Mart https://aleshamart.com/
Chaldal.com Chaldal Online Grocery Shopping and Delivery in Bangladesh | Buy fresh food items, personal care, baby products and more

2.3 Gap Analysis

A gap analysis is the process by which a company compares its present performance to its intended, expected

performance. This research is used to examine whether a company is achieving expectations and successfully utilizing its resources.



After our feasibility study, We find out our gap of our project which is describe in the following:

1.We were at a loss for the first seven months.

2.At the beginning of the business, the delivery system has to be done by someone else.

3.In the beginning we did not have many users.

2.4 Requirement Fixation

2.4.1 Functional Requirement:

Functional requirements are responsible for the behavior of our website and can vary as per the needs and business industry niche. Here is the same functional requirement that we must consider for our e-commerce website.

i) Third Party Integrations are important to know which third-party integrations we require on our developed e-commerce site.

ii) Mobile Responsive, In today's era, the most number of users for the website are coming through mobile devices especially smartphones. The numbers are only going to increase in the future. Thus investing in the development of a mobile-responsive website can earn more than a few bucks. We will also get increased customer loyalty from the customer base.

iii) Social media platforms are highly important for our local e-market business. Letting a user share the content of our website on a social media platform will increase the awareness of our brand and bring us closer to our present and potential customers.

2.4.2 Non-functional Requirement:

As we mentioned above, these requirements are responsible for the positive user experience and optimal website performance. Here are the major non-functional requirements for which we must give high attention.

i) Regardless of the size of our local e-market business, the website of our business should be easy to use for even a non-technical user.

ii) Security comes with utmost importance if our business site is dealing with monetary transactions, users' financial and sensitive data. Using a data privacy policy will create trust among the users for our website.

iii) For increasing the traffic on our website, We have to give special attention to the performance in the

non-functional requirements documentation. The focus should be on loading the e-commerce store as fast as possible regardless of the number of integrations and traffic on our website.

iv) Scalability, We have to look for a future-proof solution considering the scalability. It will define how the website can grow and increase its features and functionality without impacting the performance of our e-commerce website. We must be able to add more memory, servers, or disc space for making more transactions on our local e-market website.

2.5 System Organogram (sitemap)

1.Home
2.Categories
    2.1 Fruits & Grocery
    2.2 Electronics
    2.3 Fashion
        2.3.1 Men’s Fashion
        2.3.2 Women’s Fashion
    2.4 Babies & Toys
    2.5 Health & Beauty
    2.6 Books & Stationery
3. Product
    3.1 Add to Cart
    3.2 Product Details
    3.3 Compare Products
4. Bidding Room
    4.1 Bid Time
    4.2 Bid Rank
    4.3 Results

5. Orders
    5.1 Order List
    5.2 Cancel Order
    5.3 Finalize Order
6. Feedback & review
7. Profile
    7.1 Order History
    7.2 Gift Card
    7.3 Voucher
    7.4 P
    7.5 Logout
8. About Us

3. Feasibility Analysis

3.1 SWOT Analysis:

SWOT analysis (strengths, weaknesses, opportunities, and threats) is a strategy for identifying and analyzing internal and external strengths and weaknesses, as well as opportunities and threats, that influence current and future operations and assist in establishing strategic goals.

Local e-Market

Strengths:

- **Unique Bidding System.**
- **Quick Delivery.**
- **Multiple Payment Options**
- **New Idea in our society**
- **24hrs sale & communication practice**
- **Optimized Website & Easy navigation**
- **Good customer care**

Opportunities:

- **More online purchases due to the pandemic situation.**
- **Open offline shop**
- **Introduce our own branded products.**
- **More Revenue scope is possible**
- **Global Influence possible**

Weaknesses:

- **Cash flow will be unreliable in the early stages**
- **Quality Control**
- **Can't provide products from our own sources**
- **No existing user base**
- **No prior online experience**

Threats:

- **Failure to deliver product on time.**
- **Failure to sustain quality of product.**
- **People may not accept this type platform**
- **Approach could be copied by competitor**

Strategy:

We should be more careful about on time delivery and quality of products. During this pandemic situation the opportunity of online business is great so we have to emphasize to attract more customers by providing our service more efficiently.

So, after this SWOT analysis, we find this project feasible.

3.2 Cash Flow Analysis:

The cash flow statement is a financial statement that details the amount of cash and cash equivalents that go in and out of a business.

Expenses:

Website cost: 25,000/- (one time)

Salary expense (3employee) : 3*7000 =21000 per month

Advertisement expense : 5000 (Jan - June,December) ,3000(July - November)

Utility & Fees expense : 9000 (approximate)

Tax expense : 50,000(end of year)

Revenue:

Selling Service: Starting revenue 650, end of year revenue 74500
Increasing approximately 1.5x speed per month.

Bidding Service: Starting revenue 500, end of year revenue 76000
Increasing approximately 1.5x speed per month.

Delivery Service: Starting revenue 250, end of year revenue 3600
Increasing approximately 1.5x speed per month.

Cash Flow Analysis

Description / Month	January	February	March	April	May	June	July	August	September	October	November	December
Expenses	111000	36000	36000	36000	36000	36000	36000	34000	34000	34000	34000	104000
Revenue	1400	6000	13500	30600	36600	47500	73100	83500	97000	120500	153000	187000
Cash Flow (Rev. - Exp.)	-109600	-30000	-22500	-5400	600	11500	37100	49500	63000	86500	119000	83000
Accumulating Cash Flow	-109600	-139600	-162100	-167500	-166900	-155400	-118300	-68800	-5800	80700	199700	282700

We can see from this cash flow that the accumulated cash flow is positive. As a result, our business will be profitable.

3.3 NPV Method:(10% Interest rate)

Expense:

$$NPV = \frac{111000}{(1+.1)^0} + \frac{36000}{(1+.1)^1} + \frac{36000}{(1+.1)^2} + \frac{36000}{(1+.1)^3} + \frac{36000}{(1+.1)^4} + \frac{36000}{(1+.1)^5} + \frac{36000}{(1+.1)^6} + \frac{34000}{(1+.1)^7} + \frac{34000}{(1+.1)^8} + \frac{34000}{(1+.1)^9} + \frac{34000}{(1+.1)^{10}} + \frac{104000}{(1+.1)^{11}}$$

$$= 354986.2594$$

Revenue:

$$NPV = \frac{1400}{(1+.1)^0} + \frac{6000}{(1+.1)^1} + \frac{13500}{(1+.1)^2} + \frac{30600}{(1+.1)^3} + \frac{36600}{(1+.1)^4} + \frac{47500}{(1+.1)^5} + \frac{73100}{(1+.1)^6} + \frac{83500}{(1+.1)^7} + \frac{97000}{(1+.1)^8} + \frac{120500}{(1+.1)^9} + \frac{153000}{(1+.1)^{10}} + \frac{187000}{(1+.1)^{11}}$$

= 400491.061

Profit = Revenue - Expense
= 400491.061 - 354986.2594
= 4104.8016

As, our Profit > 0
So, this project is profitable.

3.4 Alternative Solutions:

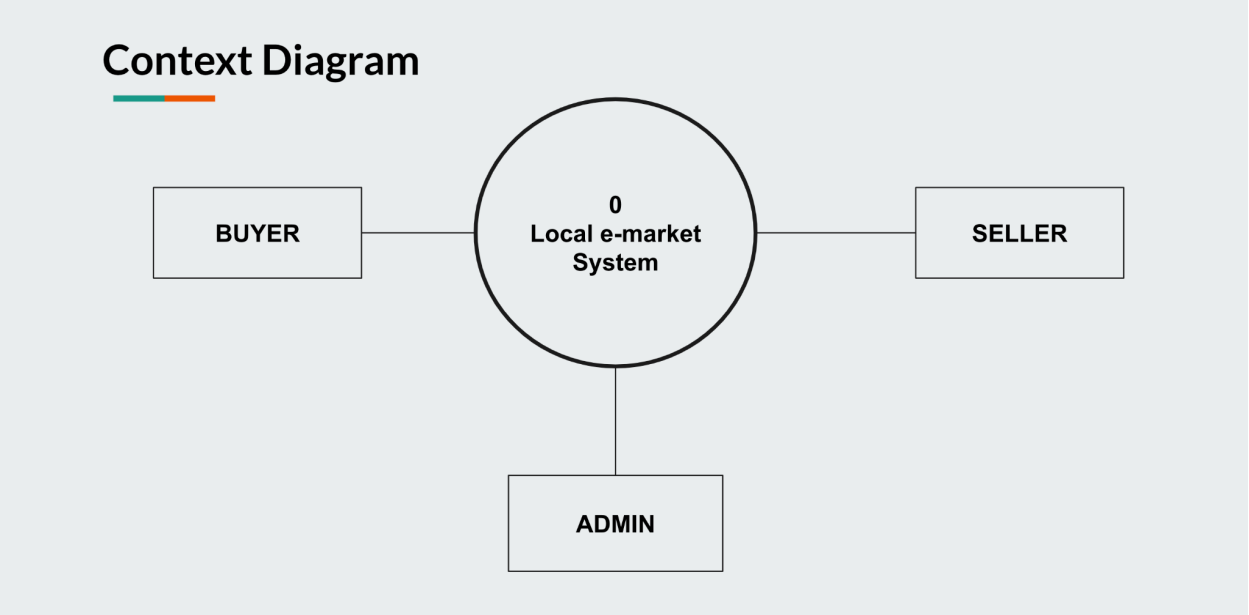
We are doing business online because we had fewer clients at the start of the company, so if we were to do business offline, we would have a higher risk of losing money, however, if we were to do business online, the chances of losing money would be lower.

3.5 Recommendation:

We are optimistic about this project because our Cash Flow Analysis and NPV analysis, as well as our SWOT Analysis, revealed that it is profitable and feasible.

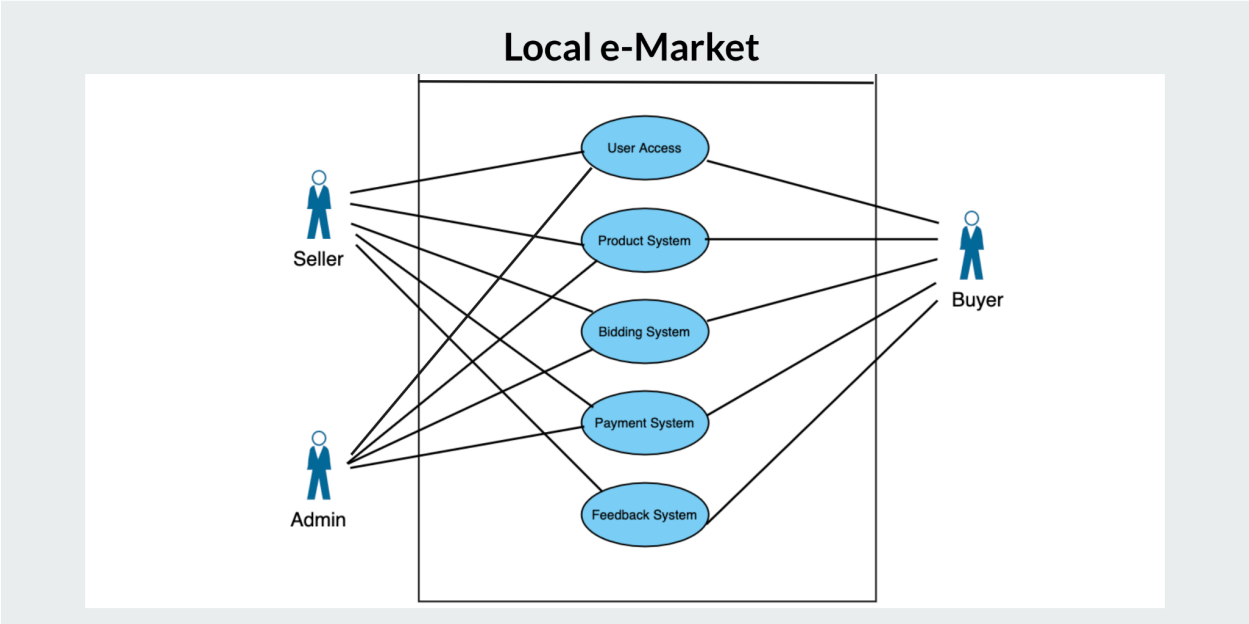
4. System Design

4.1 Context Diagram



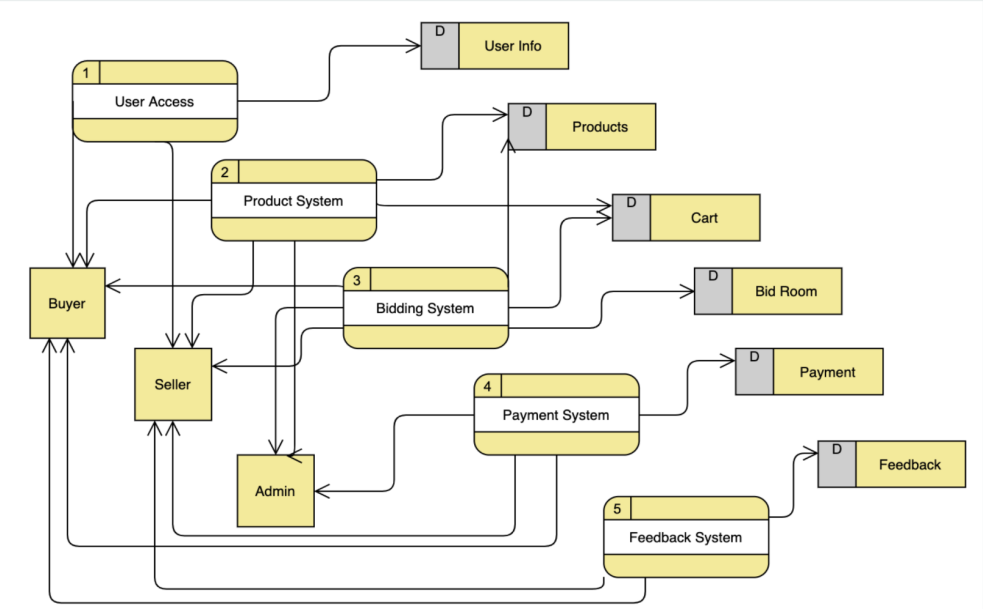
4.2 Use Case Diagram

User Case Diagram



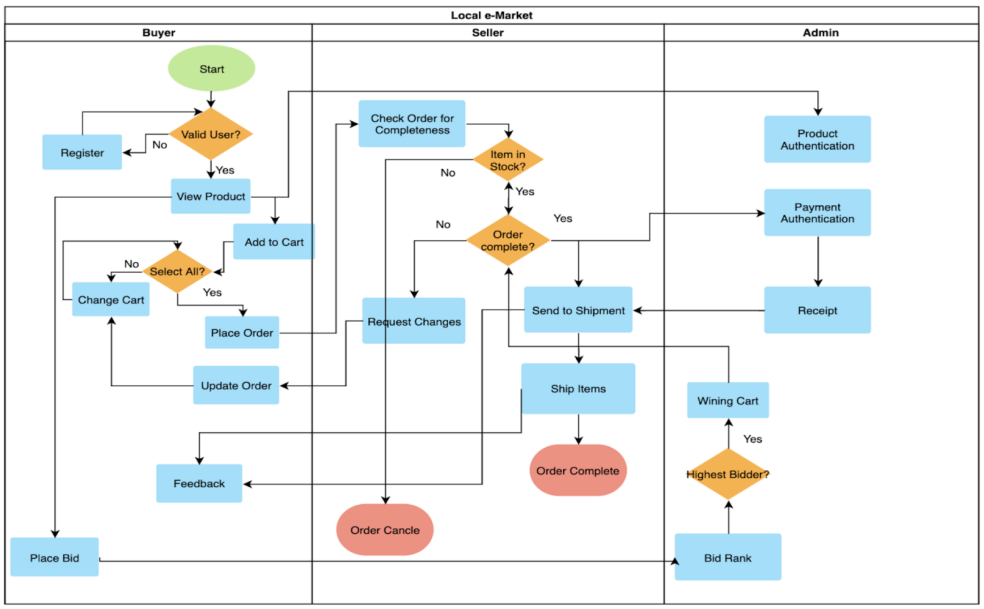
4.3 Data Flow Diagram

Data Flow Diagram



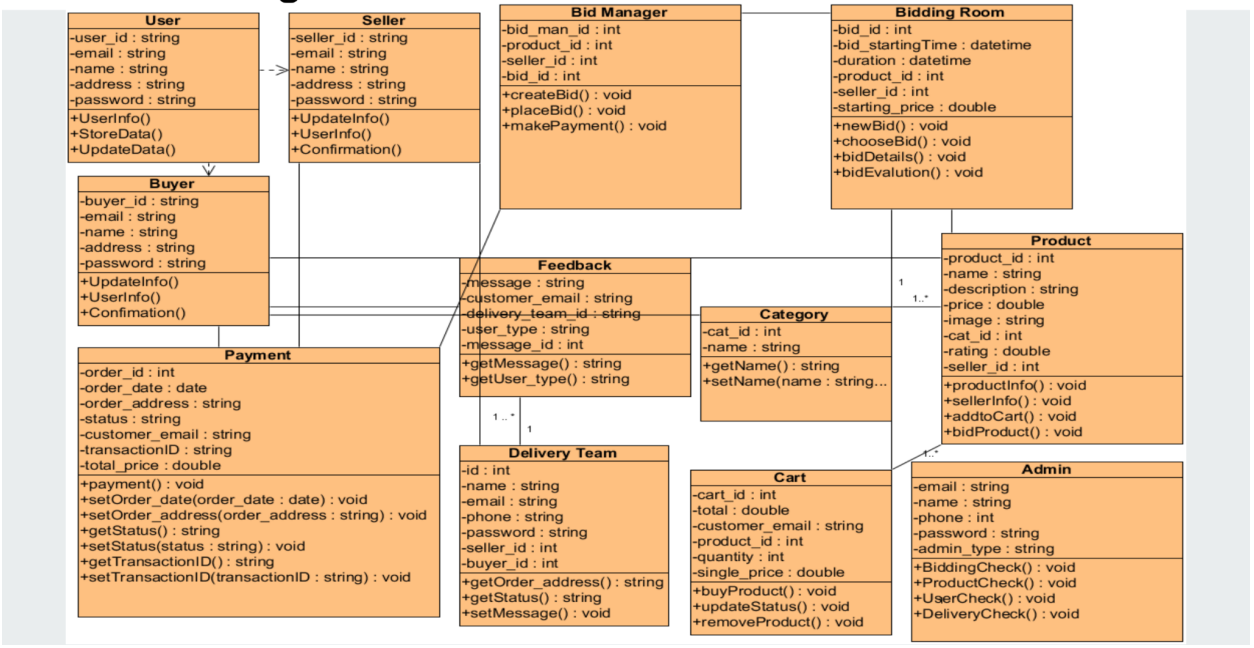
4.4 Swim Lane Diagram

Swim Lane Diagram



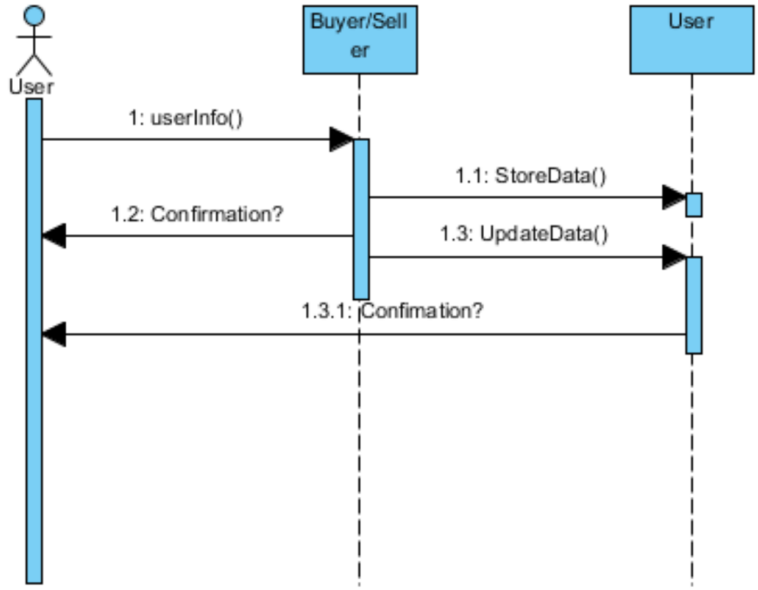
4.5 Class Diagram

Class Diagram

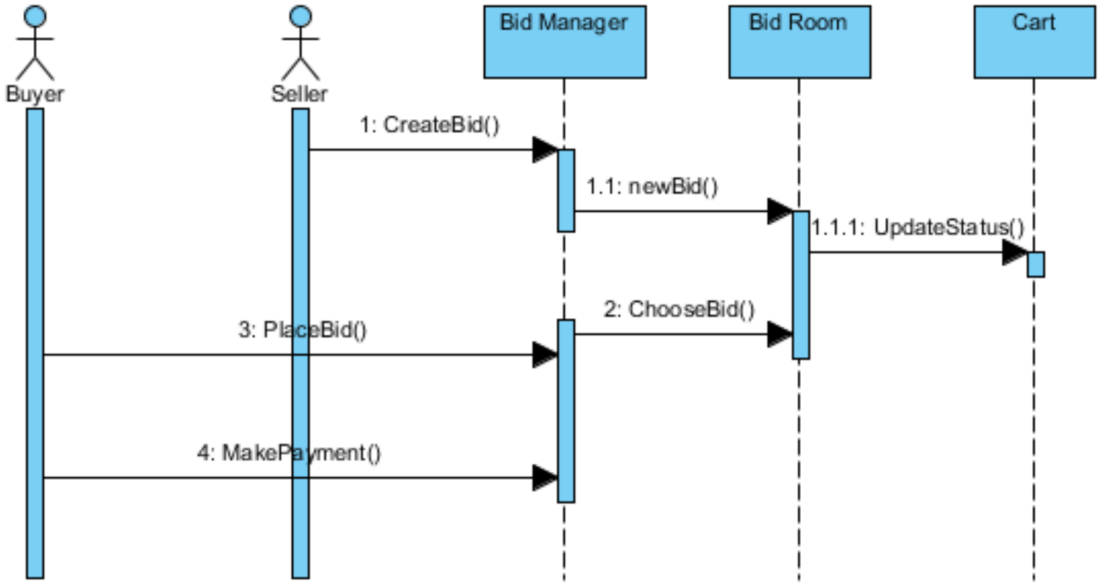


4.6 Sequence Diagram

Sequence Diagram (User Access)

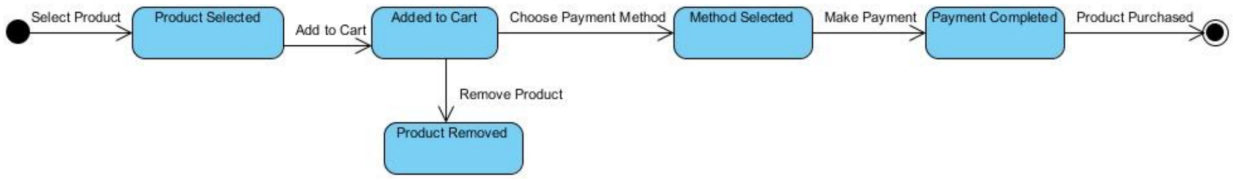


Sequence Diagram (Bidding System)

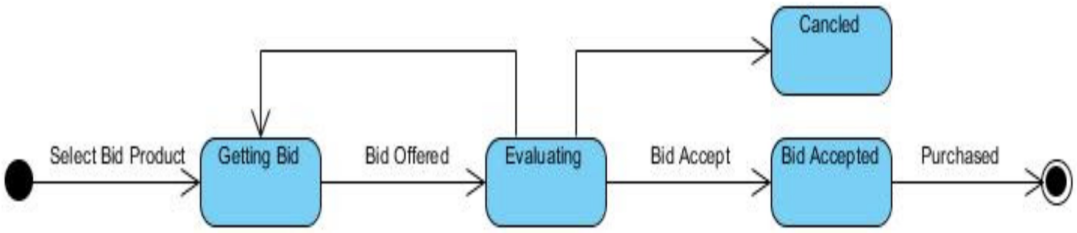


4.7 State Diagram

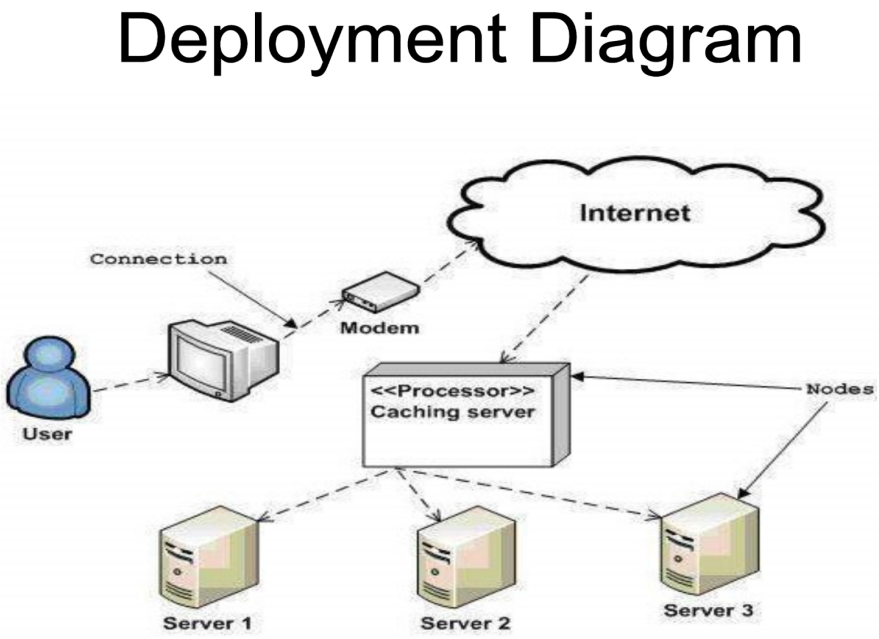
State Diagram (Product System)



State Diagram (Bidding System)



4.8 Deployment Diagram



4.9 Golden Rules of UI Design

The golden rules are divided into three groups:

1. **Place Users in Control**
   - Define interaction in such a way that the user is not into performing unnecessary or undesired actions
   - Provide for flexible interaction
   - Allow user interaction to be interruptible and reversible

2. **Reduce Users' Memory Load**
   - Reduce demands on user's short-term memory
   - Establish meaningful details
   - Define intuitive short-cuts
   - Visual layout of user interface should be based on familiar real world metaphor

3. **Make the Interface Consistent**
   - Allow user to put the current task into a meaningful context
   - Maintain consistency across a family of applications
   - If past interaction models have created user expectations, do not make changes unless there is a good reason to do so

5. Conclusion

5.1 Conclusion

To establish whether or not our project is successful, we employed Cash Flow Analysis and Net Present Value Analysis (NPV), SWOT analysis as well as System Diagrams. After performing the research, we determined that our approach was both profitable and feasible. All of our analyses led us to the idea that if we work hard on this project, we can succeed in the future.