American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

ONLINE PROPERTY AUCTION SYSTEM FOR BANGLADESH

A Software Engineering Project Submitted

By

Semester: Summer_23_24		Section:F	Group Number:8	
SN	**Student Name**	**Student ID**	**Contribution (CO3+CO4)**	Individual Marks
1	MD.ABDULLAH AL MAMUN SAYKAT	22-46593-1	20%	
2	Rafiul Hasan Efti	22-47141-1	20%	
3	Abdullah Al Maruf	22-47111-1	20%	
4	Riazul Zannah	22-47218-1	20%	
5	ASADUZZAMAN SAYMON		20%	

The project will be Evaluated for the following Course Outcomes

CO3: *Select* appropriate software engineering models, project management roles and their associated skills for the complex software engineering project and evaluate the sustainability of developed software, taking into consideration the societal and environmental aspects	**Total Marks**	
Appropriate Process Model Selection and Argumentation with Evidence	**[5 Marks]**	
Evidence of Argumentation regarding process model selection	**[5Marks]**	
Analysis the impact of societal, health, safety, legal and cultural issues	**[5Marks]**	
Submission, Defense, Completeness, Spelling, grammar and Organization of the Project report	**[5Marks]**	
CO4: *Develop* project management plan to manage software engineering projects following the principles of engineering management and economic decision process	**Total Marks**	
Develop the project plan, its components of the proposed software products	**[5Marks]**	
Identify all the activities/tasks related to project management and categorize them within the WBS structure. Perform detailed effort estimation correspond with the WBS and schedule the activities with resources	**[5Marks]**	
Identify all the potential risks in your project and prioritize them to overcome these risk factors.	**[5Marks]**	

Description of Student's Contribution in the Project work

Student Name: MD.ABDULLAH AL MAMUN SAYKAT

Student ID:22-46593-1

Contribution in Percentage (%):20

Contribution in the Project:

- **.Project proposal**
- **.Property Listing for Auction**
- **.Use Case Diagram**

_____SAYKAT_____

Signature of the Student

Student Name: Abdullah Al Maruf

Student ID: 22-47111-1

Contribution in Percentage (%): 20

Contribution in the Project:

- **Project Proposal**
- **Literature Review**
- **State Diagram**

Maruf

Signature of the Student

Student Name: Rafiul Hasan Efti

Student ID: 22-47141-1

Contribution in Percentage (%): 20

<u>Contribution in the Project:</u>

.Project Proposal

.Activity Diagram

.Payment Process

EFTI

_____

Signature of the Student

Student Name: Riazul Zannah

Student ID: 22-47218-1

Contribution in Percentage (%): 20

<u>Contribution in the Project:</u>

Class Diagram

Feedback

Riazul

_____

Signature of the Student

Student Name: ASADUZZAMAN SAYMON

Student ID: 22-47158-1

Contribution in Percentage (%): 20

Contribution in the Project:

- **System Login**
- **Registration**
- **Non Functional Requirements**

Saymon

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Signature of the Student

Background to the problem:

Background Description

Traditional property transactions in Bangladesh often lack transparency. The market is inefficient and full of mistrust since buyers and sellers find it difficult to obtain accurate and thorough information on homes. Currently, purchasing and selling properties requires a drawn-out process with numerous brokers, which slows down and delays transactions. Sellers find it difficult to reach a large audience and mostly rely on word-of-mouth and local agencies, which narrows the pool of possible buyers and lessens the chance of competitive bidding.

Physical auctions may not be convenient for purchasers who live far away or have hectic schedules. The traditional market is prone to fraudulent activities, such as misrepresenting property details, illegal sales, and ownership disputes. The absence of a centralized platform for property transactions leads to market fragmentation, reducing efficiency and competitiveness.

Solutions to the problem

To develop a secure, user-friendly online platform that facilitates the transparent, efficient, and equitable auctioning of properties across Bangladesh, ensuring wider access, fair competition, and streamlined processes for buyers, sellers, and regulatory authorities.

Develop a secure, user-friendly online platform. Implement transparent bidding processes with real-time updates. Integrate with government databases for property verification and legal compliance. Provide features for detailed property listings, virtual tours, and user reviews.

Proposed Solutions and Appropriateness Solutions:

Secure Online Platform: Utilize secure login methods to protect user data and transactions. Transparent Bidding Process: Implement real-time bidding with visible bid history and automated notifications to ensure fairness. Integration with Government Databases: Verify property ownership and legal status, reducing fraud and legal complications. Detailed Property Listings: Include high-quality images, virtual tours, and detailed descriptions to give users comprehensive property information

Basic Functionalities and Impact

Basic Functionalities:

User Registration and Profile Management: Secure sign-up and profile customization. Property Listing and Search: Advanced search filters, detailed property information, and virtual tours. Bidding System: Real-time bidding, automated notifications, and bid history transparency. Payment Gateway Integration: Secure payment processing for transactions and deposits. Review and Rating System: User reviews and ratings for properties and sellers. Admin Panel: For managing listings, monitoring transactions, and ensuring compliance.

Impact:

Societal Impact: Enhances market transparency, reduces fraud, and provides equal opportunities for all participants. Health and Safety: Virtual tours reduce the need for physical visits, minimizing health risks. Legal Compliance: Ensures all transactions comply with local laws, reducing legal disputes. Cultural Impact: Promotes inclusivity with multilingual support and easy access to property information.

Target Group of Users and Benefits

Target Group:

Individual Buyers and Sellers: Ordinary citizens looking to buy or sell property.

Real Estate Agents and Brokers: Professionals facilitating property transactions.

Investors: Both local and international investors seeking opportunities in Bangladesh.

Government and Regulatory Authorities: Ensuring compliance and transparency in the real estate market.

Benefits:

- Individual Buyers and Sellers: Gain access to a wider market, transparent pricing, and reduced risk of fraud. They can also benefit from detailed property information, virtual tours, and secure transaction processes.
- Real Estate Agents and Brokers: Streamlined processes, expanded client base, and enhanced efficiency in property transactions. The system provides tools for better client management and more effective marketing of properties.
- Investors: Reliable information and a fair bidding process increase investment confidence. They can access detailed analytics and market trends to make informed investment decisions.
- Government and Regulatory Authorities: Improved market oversight and reduced illegal transactions through better compliance and transparency. The platform facilitates easier enforcement of property laws and regulations.

Contribution to Scientific Results:

The Real Estate Transparency and Efficiency Platform (RETEP) is designed to address critical inefficiencies and transparency issues within the real estate market in Bangladesh. By leveraging advanced technologies and innovative methodologies, RETEP contributes to the development of scientific results in several key areas:

Data Transparency and Accessibility:

- **Research Contribution:** RETEP will facilitate the creation of a comprehensive, transparent database of property transactions, prices, and market trends.
- **Scientific Outcome:** This database can be used for empirical research, enabling economists, urban planners, and policy analysts to study market dynamics, price fluctuations, and the impact of policy changes on real estate markets with greater accuracy and detail.
- **Research Contribution:** The platform introduces algorithms and automated processes to streamline property transactions, reducing the time and cost involved.

- **Scientific Outcome:** The efficiency of these processes can be quantified and analyzed, providing data for studies on the impact of automation in real estate markets. Insights from these studies can inform the development of similar platforms in other emerging markets.

Policy and Regulatory Impact:

Research Contribution: The platform's data can be used to assess the impact of various regulatory policies on the real estate market.

- **Scientific Outcome:** Policy analysts and regulatory bodies can use these insights to formulate data-driven policies that promote market transparency and efficiency, contributing to the field of public policy and administration.

Literature Review: Enhancing Transparency and Efficiency in Real Estate Markets

Blockchain Technology in Real Estate Transactions:

- **Study:** "Blockchain for Real Estate: New Business Models and Socio-Technical Implications" by De Filippi and Wright (2018).
- **Findings:** This study explores how blockchain technology can enhance transparency, reduce fraud, and streamline transactions in real estate markets. It highlights the potential for blockchain to create a decentralized and secure ledger for property transactions.
- **Application in RETEP:** RETEP incorporates blockchain to ensure secure and transparent property transactions, extending the study by implementing a practical, scalable solution within the Bangladeshi market.

Automated Valuation Models (AVMs):

- **Study:** "Automated Valuation Models: An Application to the Real Estate Market in China" by Xu, Zhang, and Li (2020).
- **Findings:** The study demonstrates the effectiveness of AVMs in providing accurate property valuations using machine learning algorithms. It emphasizes the importance of data quality and algorithmic transparency.

Market Behavior and Predictive Analytics:

- **Study:** "Predictive Analytics in Real Estate: Forecasting Market Trends with Big Data" by Kumar and Gupta (2017).

- **Findings:** The study highlights the use of big data and predictive analytics to forecast real estate market trends. It underscores the role of data analytics in enhancing decision-making processes for investors and policymakers.

Existing Studies on Real Estate Market Challenges

Blockchain Technology in Real Estate Transactions:

- **Study:** “Blockchain for Real Estate: New Business Models and Socio-Technical Implications” by De Filippi and Wright (2018).
- **Focus:** The study explores how blockchain technology can be applied to real estate transactions to enhance transparency, reduce fraud, and streamline the transaction process.
- **Findings:** Blockchain offers a decentralized and secure ledger for property transactions, which can significantly increase trust and efficiency in the market.

Geographic Information Systems (GIS) in Real Estate:

- **Study:** “GIS-Based Real Estate Analysis: The Integration of Urban Planning and Housing Market Analysis” by Batty et al. (2019).
- **Focus:** The study discusses the use of GIS for spatial analysis of real estate data, aiding urban planning and market analysis.

Real-Time Data and Interactivity:

- RETEP offers real-time data updates and interactive tools, enabling dynamic user engagement and informed decision-making, which goes beyond the static data presentation of many existing platforms.

Existing Software Solutions for Real Estate Market Challenges

Propy:

- **Description:** Propy is a global real estate marketplace that uses blockchain technology to facilitate secure and transparent real estate transactions.
- **Features:**
    - Decentralized title registry
    - Smart contracts for transactions
    - International property listings
- **Limitations:** Propy's focus is primarily on international markets, and it may not be adapted to the specific needs of the Bangladeshi market.

- **Zillow:**

- **Description:** Zillow is a popular real estate platform in the United States that provides property listings, valuations, and market trends.
- **Features:**
    - Automated Valuation Models (AVMs)
    - Comprehensive property data
    - Market trend analysis
- **Limitations:** Zillow is tailored to the U.S. market, with data and features that may not be applicable or relevant to Bangladesh

Functional Requirements:

1 System login:

1.1 User will need valid id and password.

1.2 Log in will verified with database.

1.3 Also user will get a verify message on his/her cell number

1.4 User will go to home page.

1.5 If user forget the password, he/she will able to recover his/her password through forgotten password.

1.6 If user try to attempt more than 3 times, it will get locked for 5 mins and if he/she do that again id will be locked for 20 mins, but if user cross attempt more than 10 times id will be blocked until he contact with authorized community to recover the id.

Priority: High.
Pre-conditions: The user needs to login.

2 Registration:

2.1 User have to provide his/her NID or birth certificate if user is under 18 years old

2.2 User have to give his/her phone number which is mandatory and email id is necessary

2.3 User have to provide his/her approved all legal device documents

2.4 User have to give password at least 8 digit and highest 12 digit. Password must be mixed with alphabets and numbers.

2.5 User have to provide his/her username. Priority: High Pre-conditions: The user need must register.

Priority: High.
Pre-conditions: The user must be need registration

3.1 User Profile;

3.1.1. user can view and edit personal information.
3.1.2 manage account setting and preferences.

3.2 Property Listings:
3..2.1 Display a list of available properties with key details (images, description, starting bid, current bid, auction end time)

3.3 Auction Participation
3.3.1 place bids in real-time and view bid history

3.1.4 Payment Management
3.1.4.1 View and manage payment options.
3.1.4.2 Securely process payment for winning bids
3.1.4.3 Track transaction history and payment status.
3.1.5.1 Access a history of participated auctions and outcomes.

3.2.1 User Profile:
3.2.1.1 View and edit personal information.
3.2.1.2 manage account setting and preferences.

3.2.2 Property Management:
3.2.2.1 Add new property listings with comprehensive details (images, descriptions, location, starting bid, auction duration).
3.2.2.2 Edit or delete existing property listings.
3.2.2.3 View the status of listed properties (active, sold, expired).

3.2.3 Auction Management:
3.2.3.1Schedule auctions and set auction parameters.
3.2.3.2 Monitor real-time bidding activity on listed properties.

3.2.3.3 Manage auction details and make adjustments if necessary.

3.2.4 Sales History:

3.2.4.1 Access a history of sold properties and auction outcomes.

Priority: High.

4. Property Listing for Auction:

4.1. Property ID: Unique identifier for the property.

4.2. Title: Concise title describing the property.

4.3. Description: Detailed description of the property, including features, amenities, and any unique selling points.

4.4. Property Type: Type of property (e.g., residential, commercial, land).

4.5. Location: Address and geographic coordinates of the property.

4.6. Size: Area of the property (e.g., square feet, acres).

4.7. Ownership Status: Information on current ownership and any liens or mortgages.

4.8. Legal Compliance: Verification of legal documentation and compliance with local laws.

4.9. Photos: High-quality images of the property from various angles

4.10 Starting Bid: Initial price for the auction.

4.11. Current Bid: Most recent bid amount.

4.12. Payment Terms: Details on payment methods, deposit requirements, and timelines.

4.13. Auction Start Date: Date and time when the auction begins.

4.14. Auction End Date: Date and time when the auction ends.

Priority: High.

5. Bidding Process:

5.1. Live Auction: Auctions are conducted in real-time, with users able to place bids within the specified auction period.

5.2. Bid Submission: Users submit bids by entering their bid amount and confirming the bid.

5.3. Starting Bid: Each property has a starting bid set by the seller, which is the minimum amount to start the auction.

5.4. Bid Increment: The platform specifies the minimum amount by which a new bid must exceed the current highest bid.

5.4. Automatic Notifications: Users receive real-time notifications (email, SMS, or app alerts) when they are outbid or when the auction is about to end.

5.5. Bid History: The platform displays the bid history, showing all bids placed along with timestamps and user anonymization to ensure transparency.

5.6. Bid Management: The system ensures that proxy bids are placed incrementally based on the current highest bid and the bid increment.

5.7. Auction End Time: The auction ends at the specified time unless extended by late bidding activity (e.g., last-minute bids may extend the auction by a few minutes to prevent sniping).

5.8. Winning Bid: The highest bid at the end of the auction period is declared the winning bid.

5.9. Winner Notification: The winning bidder receives a notification confirming their successful bid and detailing the next steps for payment and property transfer.

Priority: High.

6. Payment Process

6.1. Account Verification: Users must verify their identity and link a valid payment method (e.g., credit card, bank account, digital wallet) to their account before participating in auctions.

6.2. Deposit Requirement: Users may be required to make an initial deposit or provide a pre-authorization on their payment method to confirm their commitment to bidding.

6.3. Payment Deadline: The winning bidder must complete the payment within a specified timeframe (e.g., 5 business days) as outlined in the auction terms and conditions.

6.4. Reminders: Automated reminders are sent to the winning bidder to ensure timely payment.

6.5. Bank Transfer: Direct transfer of funds from the buyer's bank account to the platform's escrow account.

6.6. Credit/Debit Card: Secure online payment using a credit or debit card.

6.7. Digital Wallets: Payments via popular digital wallets (e.g., Bkash, Rocket, Nagad, Upay).

6.8. Receipt Issuance: Once payment is received, a payment receipt is issued to the buyer and a confirmation is sent to the seller.

6.9. Data Encryption: All payment transactions are secured using advanced encryption methods to protect user data.

6.10. Refund Policy: The platform outlines clear refund policies for situations such as auction cancellations or legal issues that prevent the completion of the sale.

6.11. Processing Refunds: In case of a refund, the platform processes the refund through the original payment method and provides a confirmation to the user.

Priority: High.

7. Feedback

7.1. Automated Prompt: After the completion of a transaction, both buyers and sellers receive an automated invitation to leave feedback about their experience.

7.2. Rating System: Users can rate their experience on a scale (e.g., 1 to 5 stars) based on various criteria such as communication, transaction smoothness, and overall satisfaction.

7.3. Comment Section: Users are encouraged to provide detailed comments about their experience. This can include praise for positive aspects and constructive criticism for areas needing improvement.

7.4. Public Reviews: Feedback and ratings are displayed publicly on the platform, providing transparency and helping other users make informed decisions.

7.5. User Improvement: Users receive periodic summaries of their feedback, helping them understand areas of strength and opportunities for improvement.

Priority: Low

Non-Functional Requirements:

Response Time: Implement load balancing and ensure quick response times.

High Availability: Deploy the system across multiple data centers.

User-Friendly Interface**:** Conduct user testing and use design principles to create an intuitive interface.

Modular Design: Use microservices architecture to ensure easy maintenance.

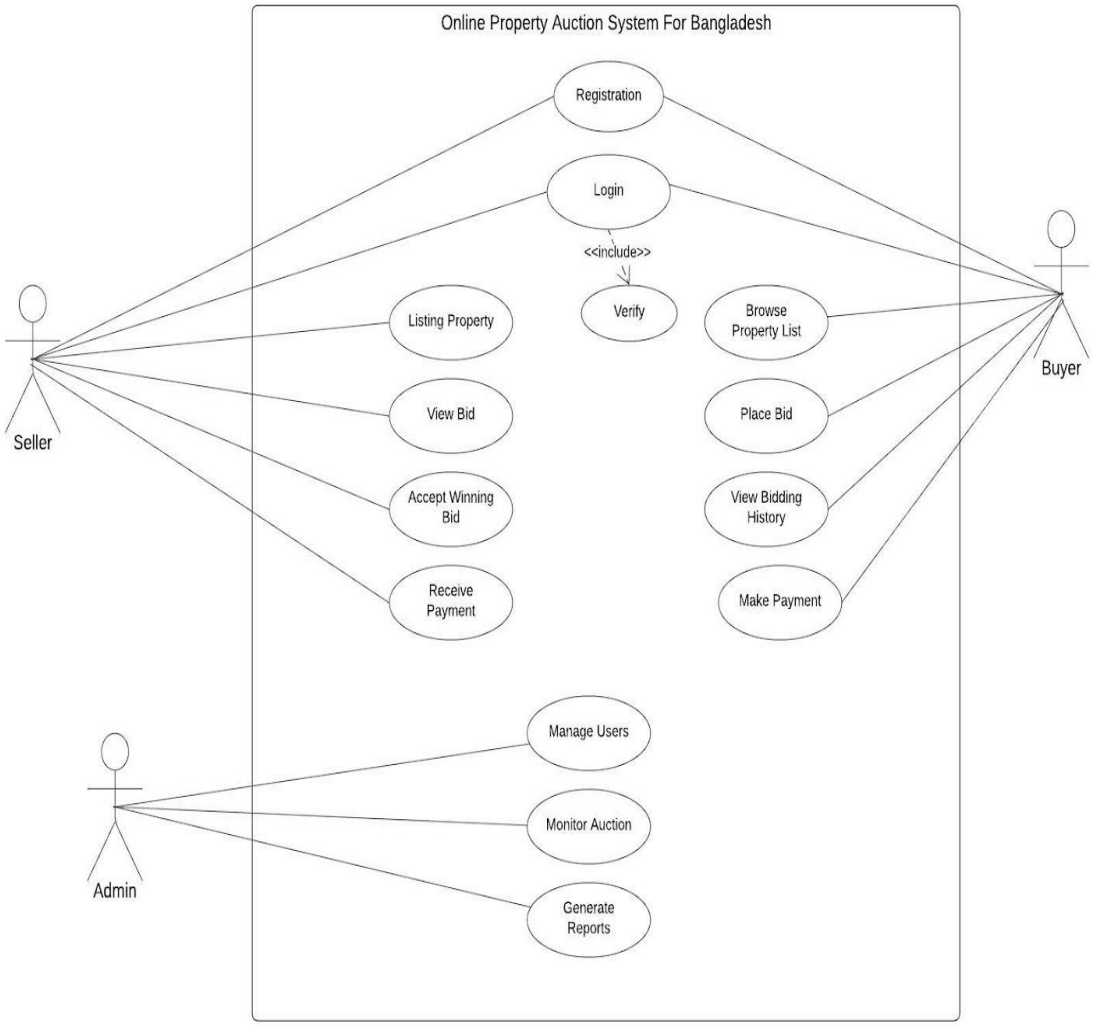
Documentation: Maintain comprehensive documentation for developers and users.

Responsive Design: Use responsive design techniques to ensure functionality on all device types.

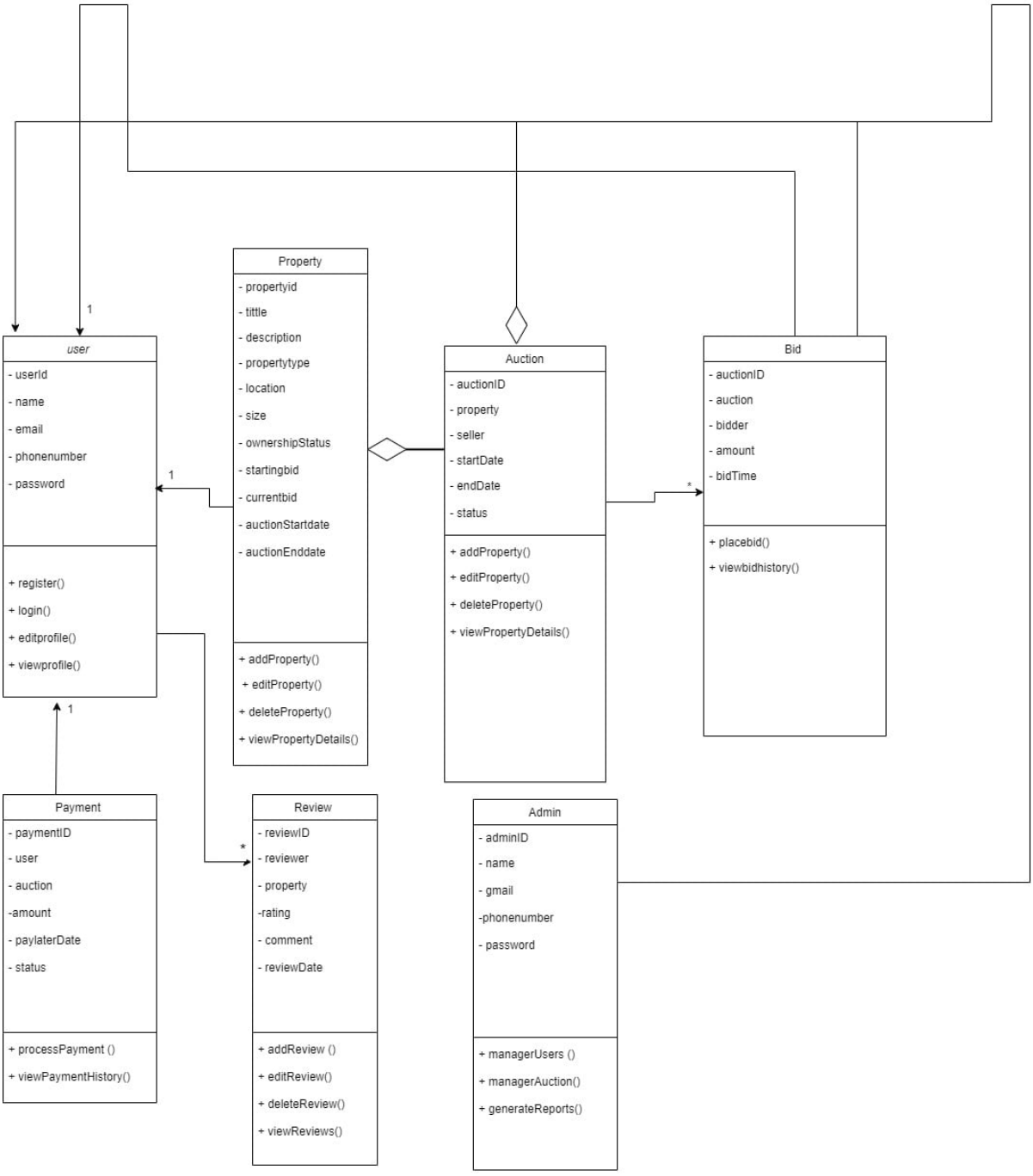
Efficiency: Perform regular code optimization and use efficient algorithms.

Data Protection: Keep detailed logs of user actions and system changes.

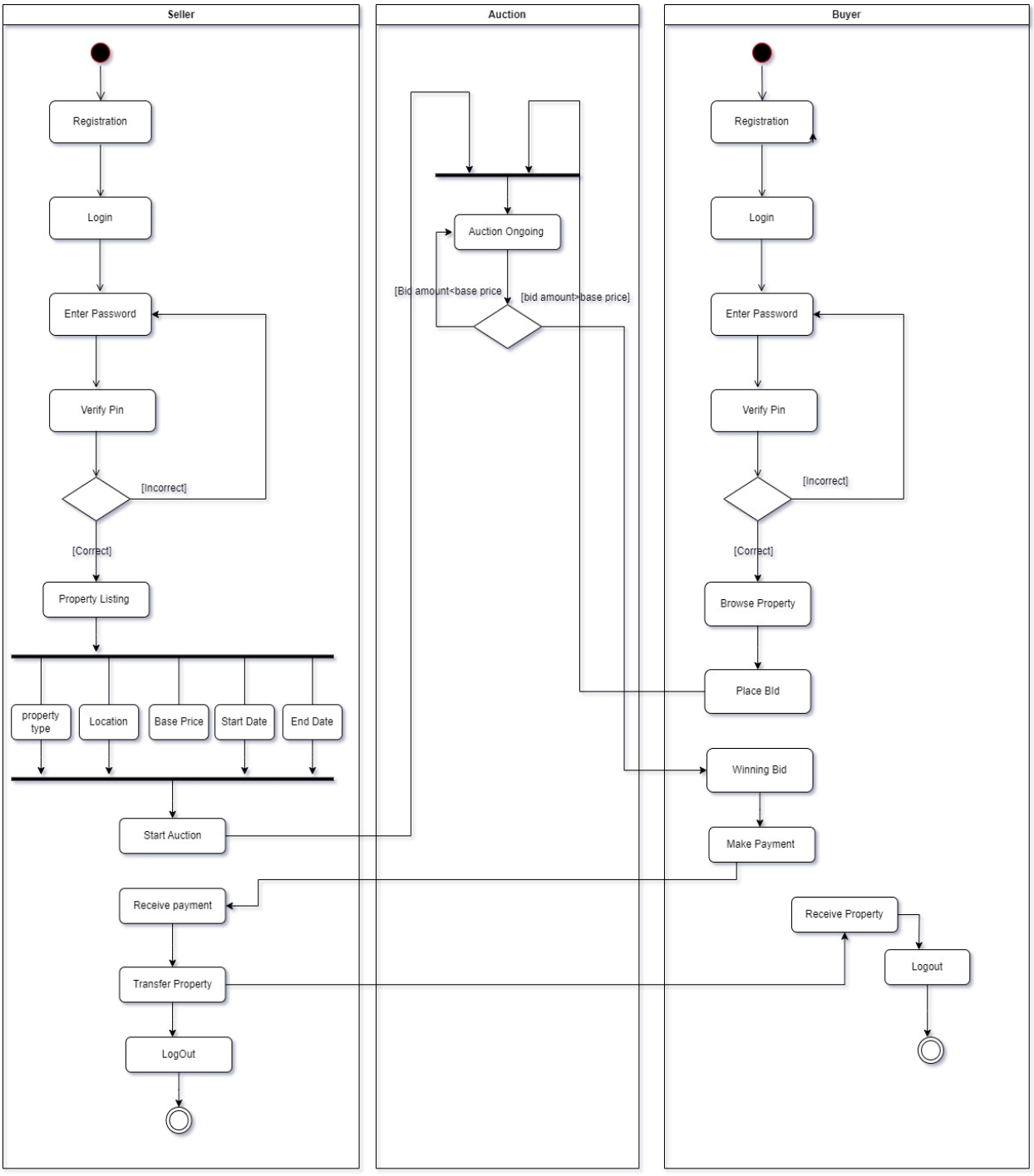
Use Case Diagram :



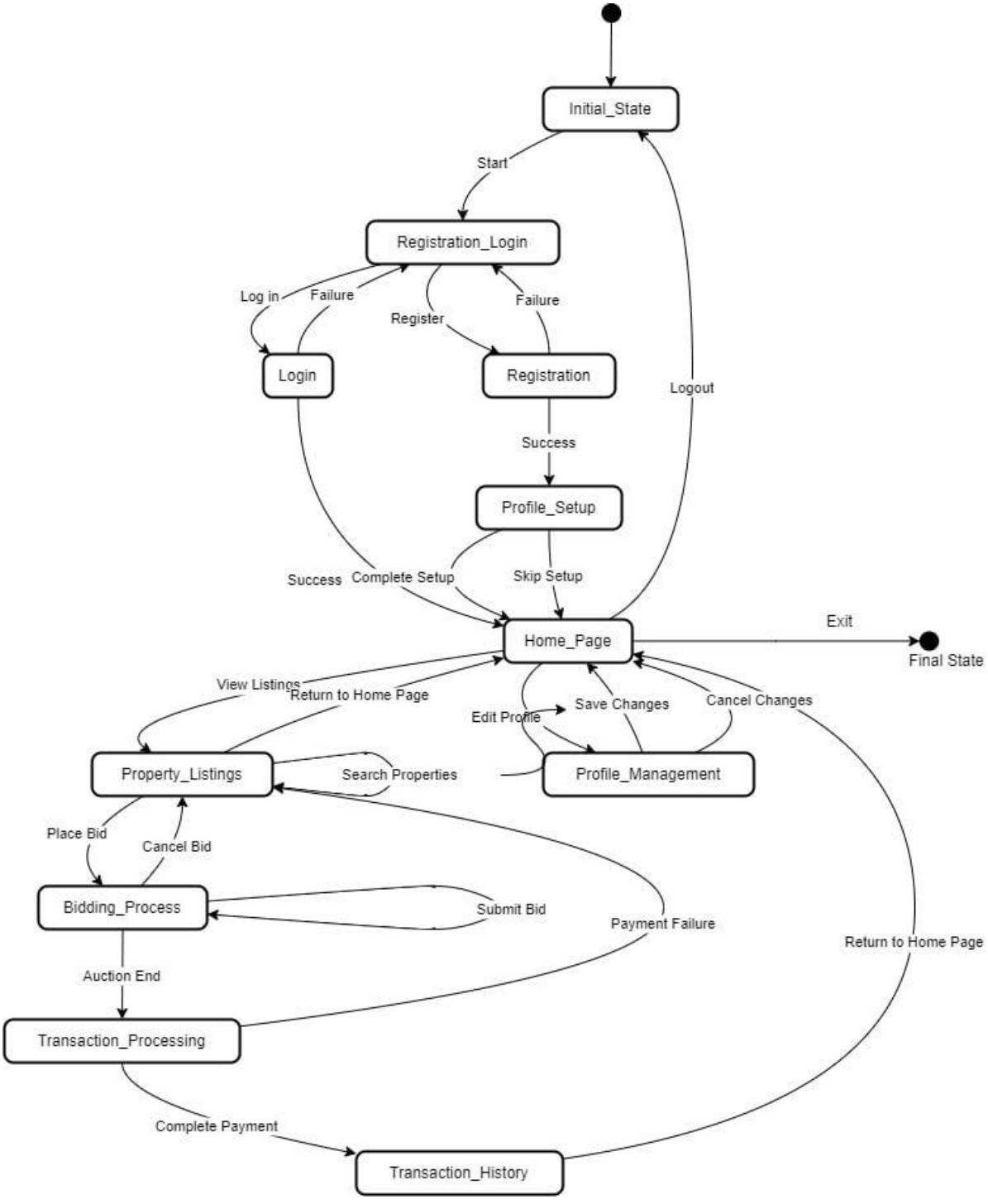
Class Diagram:



Activity Diagram:



State Diagram:



Process Model:

We have chosen the Scrum process model for this project because, the requirements for an online property auction system can evolve based on user feedback, market trends, and regulatory changes. The Scrum model allows for flexibility and iterative refinement of requirements. An auction system involves multiple user types (buyers, sellers, admin) with different needs. With its focus on user stories and frequent user feedback, the scrum model ensures that the system is developed to meet user expectations and improve usability. Features are delivered incrementally, providing value to users early and often, which is crucial in a dynamic market like property auction. Scrum's emphasis on inspection and adaptation helps manage the project's complexity, ensuring that the final product is robust and effective.

Project Roles and Responsibilities:

For online property Auction system for Bangladesh the key roles that play distinct responsibilities throughout the development process, such as

Product Owner: Defines the vision, prioritizes the backlog, and ensures that the team is building the right product. The Scrum Master, the client, and the management choose him. He makes the final decisions of the tasks related to product Backlog.

Scrum Master: Facilitates the Scrum process, helps resolve impediments, and ensures the team follows practices. Scrum Master interacts with the project team as well as with the customer and the management during the project.

Scrum Team: Responsible for delivering potentially shippable increments of the product at the end of each sprint.

Customer: Customer participates in the tasks related to product Backlog items for the system being developed or enhanced.

The impact of societal, health, safety, legal and cultural issues:

Many individuals in Bangladesh may lack access to the internet or digital devices, limiting their ability to participate in online auctions. Additionally, societal trust in online platforms is still evolving. Potential users may be wary of online transactions due to concerns about fraud and security. We must Implement robust security measures and transparency features to mitigate these societal impacts. Users should be educated through workshops and information dissemination to build confidence in the system.

The platform is at risk of cyberattacks since it will handle private and financial data. We must use data encryption, two-factor authentication, and frequent security assessments in order to address this issue. In Bangladesh, property deals frequently depend on interpersonal connections and in-person discussions. One could be skeptical of an online system. We must include elements that

resemble conventional negotiating procedures, such as preparatory consultations, to lessen this issue.

Testing

1. **Unit Testing**: Tests individual components or functions in isolation to ensure they work correctly.
2. **Integration Testing**: Verifies that different modules or components work together as expected.
3. **System Testing**: Evaluates the complete system against the functional and non-functional requirements in a production-like environment.
4. **Regression Testing**: Re-runs previous test cases to ensure that recent changes haven't negatively affected existing functionality.
5. **Acceptance Testing**: Ensures the system meets business requirements and is ready for deployment, often involving real users.
6. **Performance Testing**: Assesses the system's performance under various conditions, including load and stress testing.

Planning:

This project involves creating a detailed property listing for auction over a period of 4 weeks. It begins with defining the scope, gathering necessary property details, and verifying legal compliance. The process includes assigning roles, setting timelines, writing descriptions, capturing high-quality photos, and determining auction specifics like starting bids and payment terms. The final step is to review the listing for accuracy before launching the auction and monitoring bids.

1

Project Name : Online Property Auction System For Bangladesh			Test Designed by : Abdullah Al Maruf	
Test Case ID : FR01			Test Designed date : 2.09. 2024	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name :Login Session			Test Execution date :	
Test Title : Verify Login				
Description : Verify for logging in or not				
Precondition (If any) : User must have NID, Email and Password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1. Open the website. 2. User input valid NID, Email and Password 3. Click Login	**NID:** 9857458923 **Email:** : marufchowdhury2020@gmail.com **Password:** 123	User should login into the system after the NID, Email and password		

		matches with the database		
Post Condition :User has successfully login to the system.				

2

Project Name : Online Property Auction System For Bangladesh	Test Designed by : Riazul Zannah
Test Case ID : FR02	Test Designed date : 2.09.2024
Test Priority(Low, Medium, High) : High	Test Executed by :
Module Name : Registration	Test Execution date :
Test Title : New Application Registration	
Description : To use the service.	
Precondition (If any) : User must have valid NID and Phone number	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1. Open the website. 2. Click on the Registration button. 3. Do registration with credentials.	NID: 987654321456 Phone: 01854655546 NewPass: 8787979	Registration Complete.		
Post Condition : User have successfully registered.				

3

Project Name : Online Property Auction System For Bangladesh			Test Designed by : Rafiul Hasan Efti	
Test Case ID : FR03			Test Designed date : 2.09.2024	
Test Priority(Low, Medium, High) : Low			Test Executed by :	
Module Name : User profile			Test Execution date :	
Test Title : Check all the parts.				
Description : To check the profile				
Precondition (If any) : Need to login first.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1.User login to the system. 2.In the dashboard, user start searching services and notifications.	See the services and updates.	Find the topics.		
Post Condition : System have successfully shown the user profile.				

Project Name : Online Property Auction System For Bangladesh			Test Designed by : Asaduzzaman Saymon	
Test Case ID : FR04			Test Designed date : 2.09.2024	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Property listing for auction			Test Execution date :	
Test Title : Sample Residential Property auction system				
Description : It includes key information such as the property ID, title, description, type, location, size, and ownership status.				
Precondition (If any) :				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1.Property Id 2.Property Type 3. Payment	Property Id : 67 Property Type: Residential	Current Ownership		
Post Condition : System Succesfully Shown the owner ship status				

5

Project Name : Online Property Auction System For Bangladesh			Test Designed by : Rafiul Hasan Efti	
Test Case ID : FR05			Test Designed date : 2.09.2024	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Bidding process			Test Execution date :	
Test Title : Placing bid on property for auction				
Description : To bid the process				
Precondition (If any) : The auction continues until the end time or higher bids are placed.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1. Log In to the system. 2. The system displays a list of properties currently under active auction. 3. The system displays the auction details page for the selected property. 4. All auction details are displayed accurately, and the auction is open for bidding.	Bidder ID: [72362397429] Property: Pink Apartments Current Highest Bid: 60,00,000 BDT New Bid Amount: 61,00,000 BDT	Bid completed		

5. The bid amount is entered without errors, and the “Place Bid” button is enabled. 6.A confirmation dialog appears, asking the user to confirm the bid. 7. The system processes the bid, updates the auction details, and displays a confirmation message . 8. The auction page is updated in real-time, showing the new highest bid and the bidder’s details. 9. The bid appears in the bid history with accurate details, including amount, bidder ID, and timestamp.				
Post Condition : System Succesfully Shown the bidding process.				

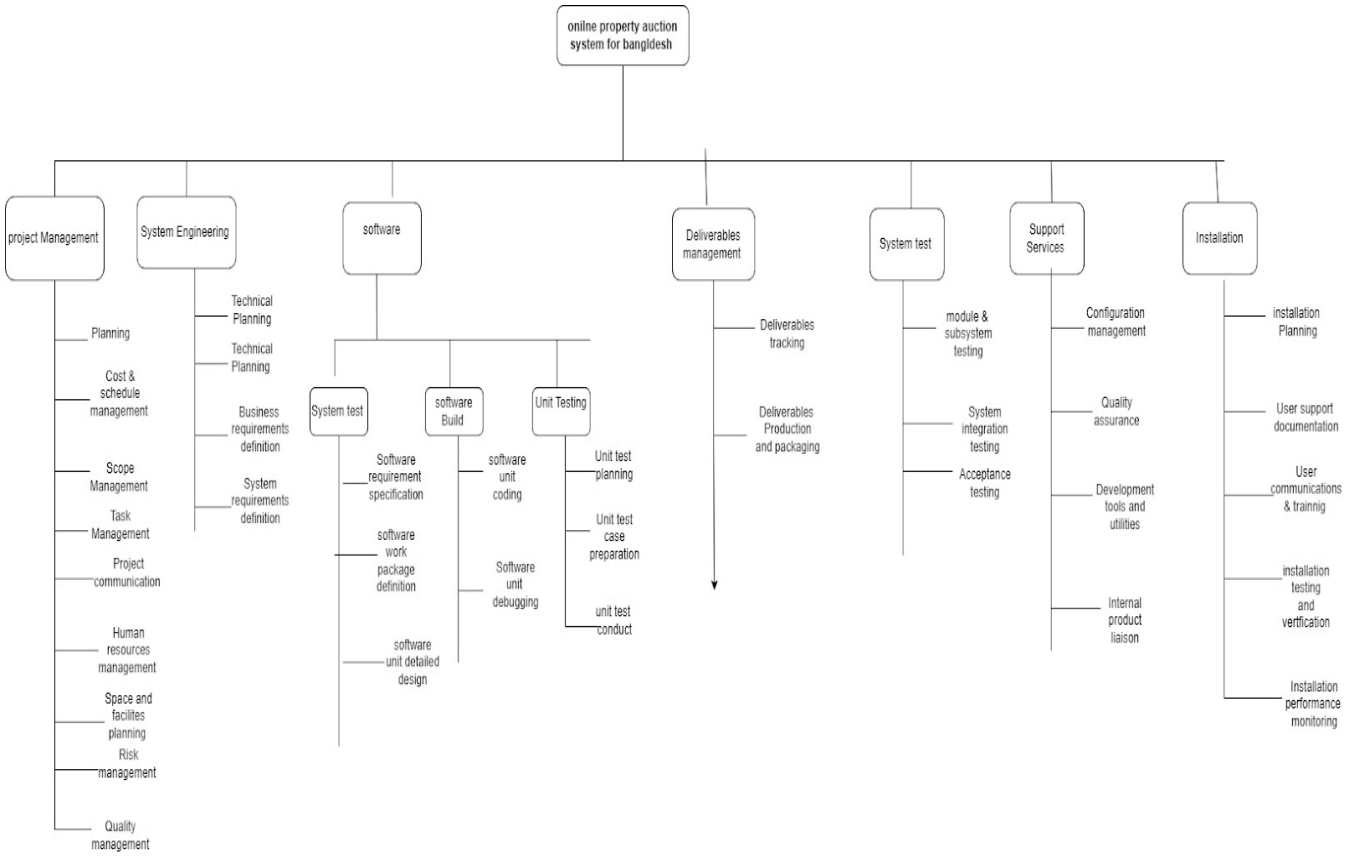
6

Project Name :	Test Designed by :
Test Case ID :	Test Designed date :
Test Priority(Low, Medium, High) :	Test Executed by :
Module Name :	Test Execution date :
Test Title :	

Description :				
Precondition (If any) :				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
Post Condition :				

7.

Project Name : Online Property Auction System			Test Designed by : Riazul Zannah	
Test Case ID : FR07			Test Designed date : 02.09.2024	
Test Priority(Low, Medium, High) : Low			Test Executed by :	
Module Name : Feedback			Test Execution date :	
Test Title : Feedback test				
Description : The applicant who are getting allowance they can give their feedback.				
Precondition (If any) : User must have the valid account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1. User log in to the system 2. Click the feedback icon and give their opinion.	Find a box to give opinions.	Your opinion is a valuable asset for us.		
Post Condition : He user can successfully give feedback				


onilne property auction system for bangldesh
project Management
Planning
Cost & schedule management
Scope Management
Task Management
Project communication
Human resources management
Space and facilites planning
Risk management
Quality management
System Engineering
Technical Planning
Technical Planning
Business requirements definition
System requirements definition
software
System test
Software requirement specification
software work package definition
software unit detailed design
software Build
software unit coding
Software unit debugging
Unit Testing
Unit test planning
Unit test case preparation
unit test conduct
Deliverables management
Deliverables tracking
Deliverables Production and packaging
System test
module & subsystem testing
System integration testing
Acceptance testing
Support Services
Configuration management
Quality assurance
Development tools and utilities
Internal product liaison
Installation
installation Planning
User support documentation
User communications & trainnig
installation testing and vertfication
Installation performance monitoring

Effort Estimation:

Our project is a relatively small, simple software project in which a small team with good

application experience work in software development. As a result, the project is considered organic.

Constructive Cost Model (COCOMO):

Let’s assume our SLOC (Source Line of Code) is 6000

For Organic,

Coefficient=2.4

P=1.05

T=0.38

So, Effort = PM= Coefficient*(SLOC/1000)^P

=2.4*(6000/1000)^1.05

= 15.75=16

Development Time = DM = 2.5*(PM)^T

= 2.5*(16)^0.38

=7.16

Requirement Number of People=ST =PM/DM

= 16/7.16

= 2.23=3

Earned Value Analysis (EVA):

Total Working days = PM*20

= 16*20

= 320 days

Let’s assume a total of 10 tasks have been completed from where the project schedule indicates that 15 tasks should have been completed.

The following schedule data is available.

Task	Planned Effort	Actual Effort
1	14	12
2	11	13
3	14	12
4	13	15
5	11	18
6	9	7
7	15	13
8	16	18
9	9	7
10	8	10
11	10	
12	11	
13	5	
14	9	
15	12	

So, BCWP = 14+11+14+13+11+9+15+16+9+8= 120

BCWS =14+11+14+13+11+9+15+16+9+8+10+11+5+9+12= 167

ACWP = 12+13+12+15+18+7+13+18+7+10=125

And BAC = 320

So, SPI = BCWP/BCWS = 120/167= 0.72

SV = BCWP-BCWS = 120-167 = - 47 Working days

CPI = BCWP/ACWP = 120/125= 0.96

CV= BCWP-ACWP = 120-125 = -5 Person days

% Schedule for Completion = BCWS/BAC = 167/320= 52%

% Schedule Completed = BCWP/BAC = 125/320 = 39%

Here,

BCWP is the sum of BCWS for all work tasks that has been completed by a point of time.

BCWS effort planned for each task.

ACWP is the actual cost of work performed.

BAC is the budgeted cost of work scheduled.

SPI is schedule performance index,

SV is schedule variance,

CPI is cost performance index,

CV is cost variance.