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UNIVERSITY OF MUMBAI

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A Mini Project Report on

E-Tender Portal

Submitted in partial fulfillment of the degree of
Bachelor of Engineering(Sem-IV)
in
Computer Engineering

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1.Project Conception and Initiation

1.1 Abstract

- The rapid growth of technology has given remarkable opportunities to both small as well as large scale businesses via The Internet.
- Also, convenience has been one of the principal motivations underlying customer inclinations to adopt e-services.
- The basic function of this system is to avail the tender online to the customers ensuring the transparency between the customer and supplier while still maintaining secrecy with encryption and avoiding all major malpractices. The customer sends an Invitation to Tender (ITT) by filling a form. The supplier can respond to the Tender and submit their best competitive offer. The most economically advantageous offer that fits the customer's requirements and the supplier is awarded the contract.

1.2 Objectives

- To create an efficient e-Tender portal system through implementation of comprehensive end-to-end e-procurement solution.

- To create a coherent system by improving transparency and accountability in the tendering process.

- To encourage a paperless environment by covering end-to-end activities yet providing enough control over different tendering activities.

1.3 Literature Review

[1] Juneja et.al explains the basic idea of E-Procurement. E-procurement has been in existence for a long time in one form or the other; earlier it was done through electronic data interchange. It is nothing but electronic data transfer to support operational, tactical and strategic procurement. In the internet-based system, processes like phase requirement definition, sourcing, solicitation, evaluation, contracting and contract management are replaced by e-sourcing, e-tendering, e-reverse auction, e-ordering and web-based ERP.

[2] Martin Betts et.al proposes a new e-tendering architecture. This paper identifies key security and legal issues to be addressed in the design of e-tendering systems. Distributed trusted third parties were used to secure large-scale operations.

[3] The reference regarding the documentation and framework that is best suitable for python is Django. The website gives a high-level overview of how it's organized. The Reference guides contain technical references for APIs and other aspects of Django's machinery that describe how it works and how to use it whereas the 'How-to' guides guide you through the steps involved in addressing key problems and use-cases.

1.4 Problem Definition

- In this system, the aim is to build a web portal on which the consumer can fill an easy-to- fill tender to be floated resulting in the selection of the most ideal quotation proposed by the vendors. The system would be designed in such a way that maintains transparency, yet keeping data confidentiality.

1.5 Scope

- Due to the era of digitalization, tendering systems have evolved exponentially over the few decades.
- Companies continue to prioritize digital transformation to become more efficient, cost-effective and transparent. This becomes important to gain public trust.
- Companies are now inclined to use digital tools to improve efficiency, reduce costs and increase insight into profitability.
- With these tools, they have earned a more strategic and involved role in the business.

1.6 Technology stack

- Python
  - Python is an interpreted, high-level and general-purpose programming language. The entire GUI and processing in this project will be done in python.
  - In this project, we are going to use a python's web-base framework, Django. Django's primary goal is to ease the creation of complex, database-driven websites.
  - The hashlib library of python is used to encrypt the data before its storage and decrypt before its retrieval.
- SQLite
  - SQLite is an open-source database that helps to interact with relational databases.
  - SQLite is stored as a single file. This makes sharing databases easier.
  - By default, the configuration uses SQLite.
- Bootstrap
  - Bootstrap is a framework which is used to create user interface in web applications. It provides css, js and other tools that help to create required interface.
  - In Django, we can use bootstrap to create more user friendly applications.

1.7 Applications

- It can be implemented in enterprise resource planning systems using separate modules to handle the procurement function.
- It is used in two separate mechanisms one is the upward price mechanism for selling organization and second is downward price mechanism for buying organization.
- e-Tendering Portal is used in the procurement of office supplies and services.
- In the internet-based systems e-procurement is done by e-sourcing, e-tendering, e-reverse auction, e-ordering, and web-based ERP.
- It can be utilized as a multi-purpose service for all the industries where there is a need for tenders such as agriculture, construction, automotive parts, etc.

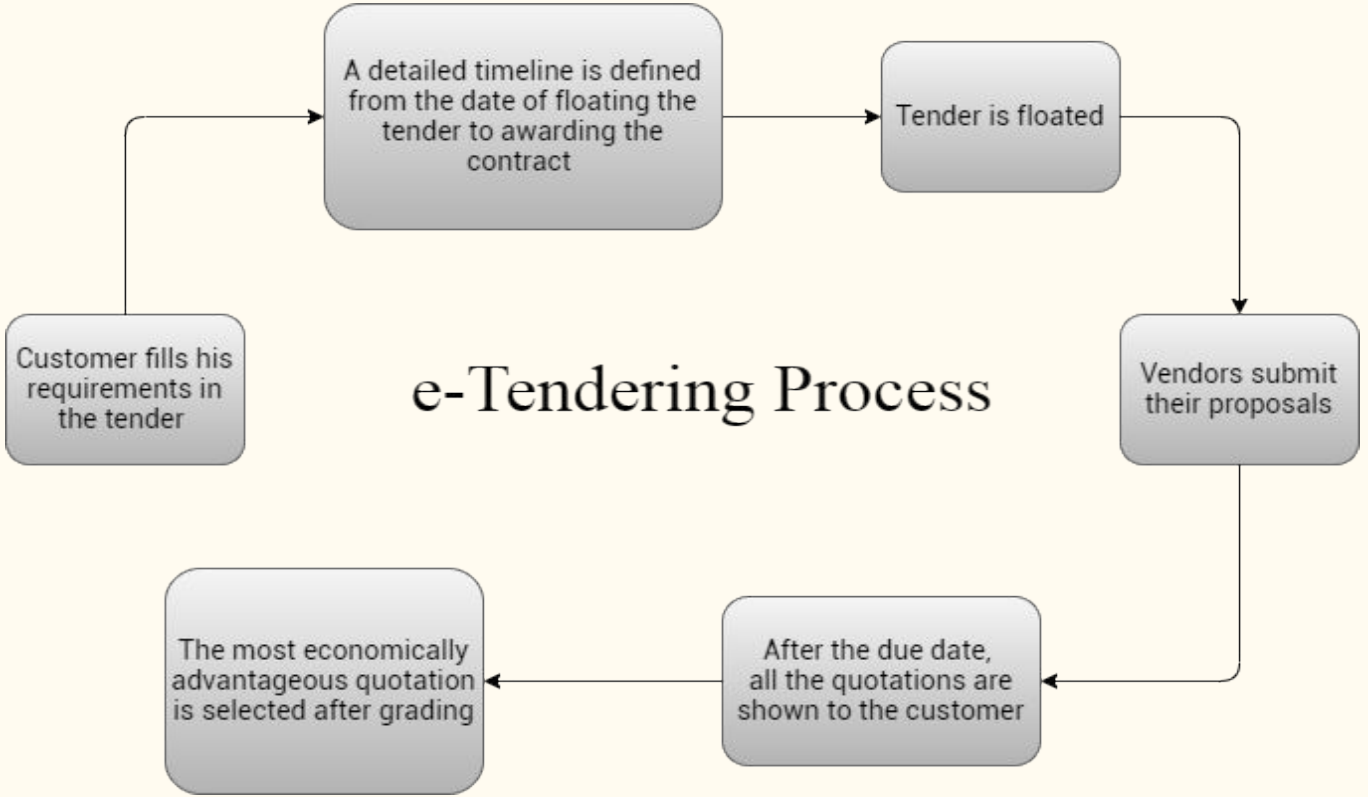
1.8 Benefits for society & environment

- e-Tendering Portal is useful because it guides the vendors in a structured way as it works in a step-by-step process throughout the application
- There would also be information about how to apply for the necessary legal documents at the concerned local/state/central governing authorities.
- Cost Reduction leads to people/companies spending more on giving quality services and leaving the tedious work to the automated process of the portal.
- Time-saving by reducing lengthy delays for tender circulation, questioning and scrutinizing.
- Drastically reduces the malpractices of power to influence, corruption and even threatening.

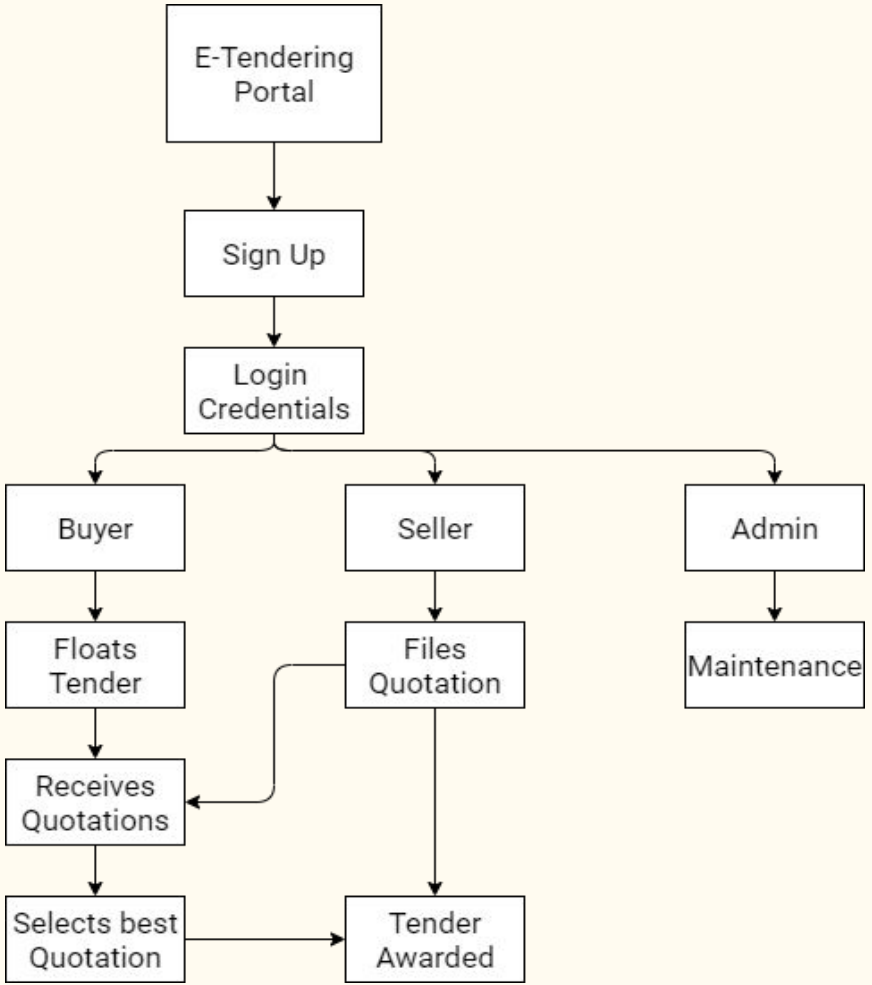
- The e-Tendering Portal is a greener and more sustainable approach to products and services.
- It acts as an paperless alternative to a highly paper intensive process which includes right from advertising, applications, physical copies of documents, etc. by being a one-stop solution.

2. Project Design

2.1 Proposed System

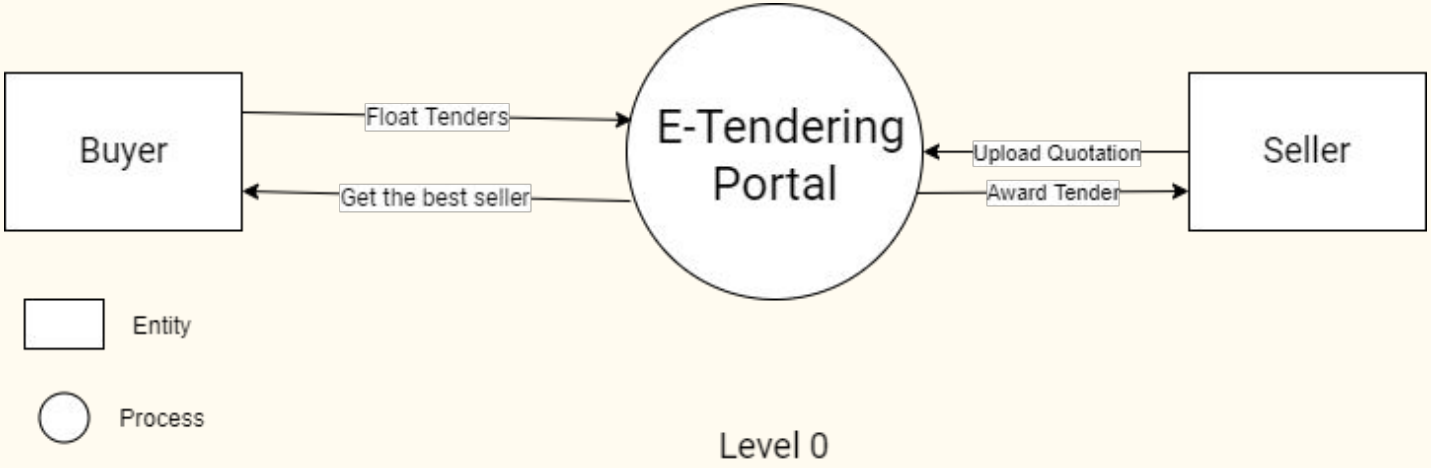


2.2 Design
(Flow Of Modules)

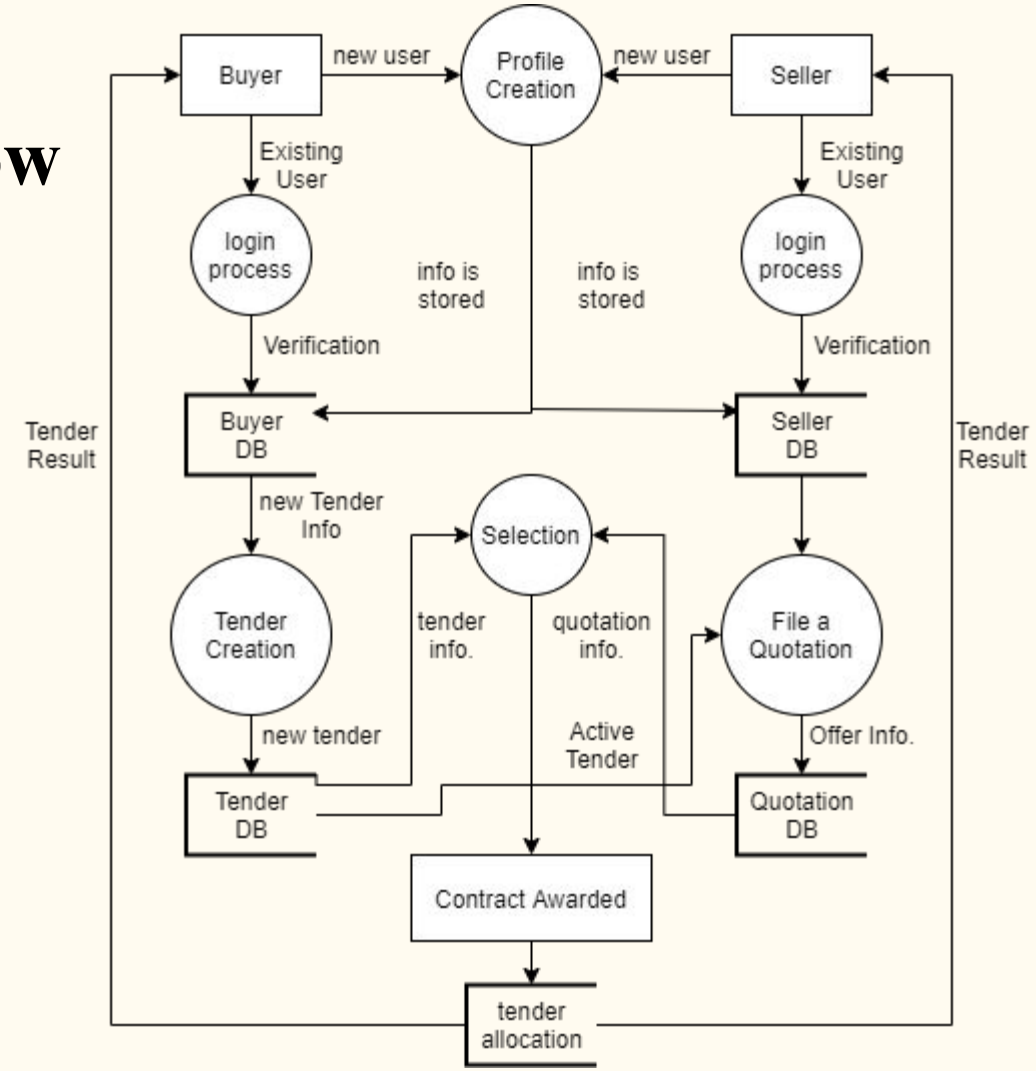


2.3a Data Flow Diagram

Level 0:



2.3b Data Flow Diagram



2.5 Module-1: Registration Page

- Consists of fields like username, first name, last name, email, password and confirm password.
- The validation of the fields is according to User Model field validation.
- There are two buttons to register users for Buyer and Seller on the navbar. If the user selects Register as Buyer then the user will be added in the buyer group and the same for the seller.
- On creating an account, the user will be directed to the login page.

Module-2: Login Page

- Users login with their credentials after user registers.
- Consists of two input fields with validations.
- Shows error message:
  - If the username is not found in the User database
  - Entered password is incorrect
- If the user has not registered yet he/she can click on Sign Up.
- If the user has forgotten his/her password the user will click on Reset password.

Module-3: Password Reset

- The user skips the one-time login form.
- On clicking Reset Password, Users need to enter his/her registered Email ID and submit.
- After the user submits the user will receive a password reset link on his/her registered Email ID.
- Once the user clicks on the link received in email, users need to enter a new password according to the conditions mentioned.
- After the password is reset successfully now the user can login with his/her new password.

Module-4: Home Page

- The ‘Home Page’ displays a list of current open tenders.
- Tenders whose status is ‘Awarded’ or ‘Closed’ will not be displayed.
- All the tenders are dynamically presented by the backend.
- If the due date of the tender is crossed, the tender status will be automatically changed to closed.

Module-5: Floating a Tender

- A buyer can float a new tender. Only the buyers will have access to this page.
- The user will navigate to this page and fill the form consisting of five input fields like product, description, quantity, start date and end date with validations. Users can't keep any of the fields blank.
- On submitting the form, the newly floated tender will be displayed with the list of tenders on the home page

Module-6: Bidding a Quotation

- A seller can quote an amount for the open tender. Only sellers will have access to this page.
- Sellers will fill ‘bid a quotation’ form for a particular tender.

Module-7: Quotation Received

- Only the buyers will have access to this page.
- This page shows the list of quotations received from different sellers on the tender floated by the current logged in buyer.
- The buyer will then select a particular quotation by clicking on the ‘Update’ button.
- When buyer selects the quotation,
    - The quotation status will be changed to ‘Awarded’ and the awarded confirmation will be communicated via Email.
    - The tender status will be also set to ‘Awarded’. And status will be communicated via email.
    - The remaining quotations to that particular tender will be closed and status will be communicated via email.

Module-8: Tender Awarded

- After closing and awarding tenders this page shows the list of awarded tenders and shows to whom the tender is awarded.

3.Implementation

3.3 Platforms for Execution

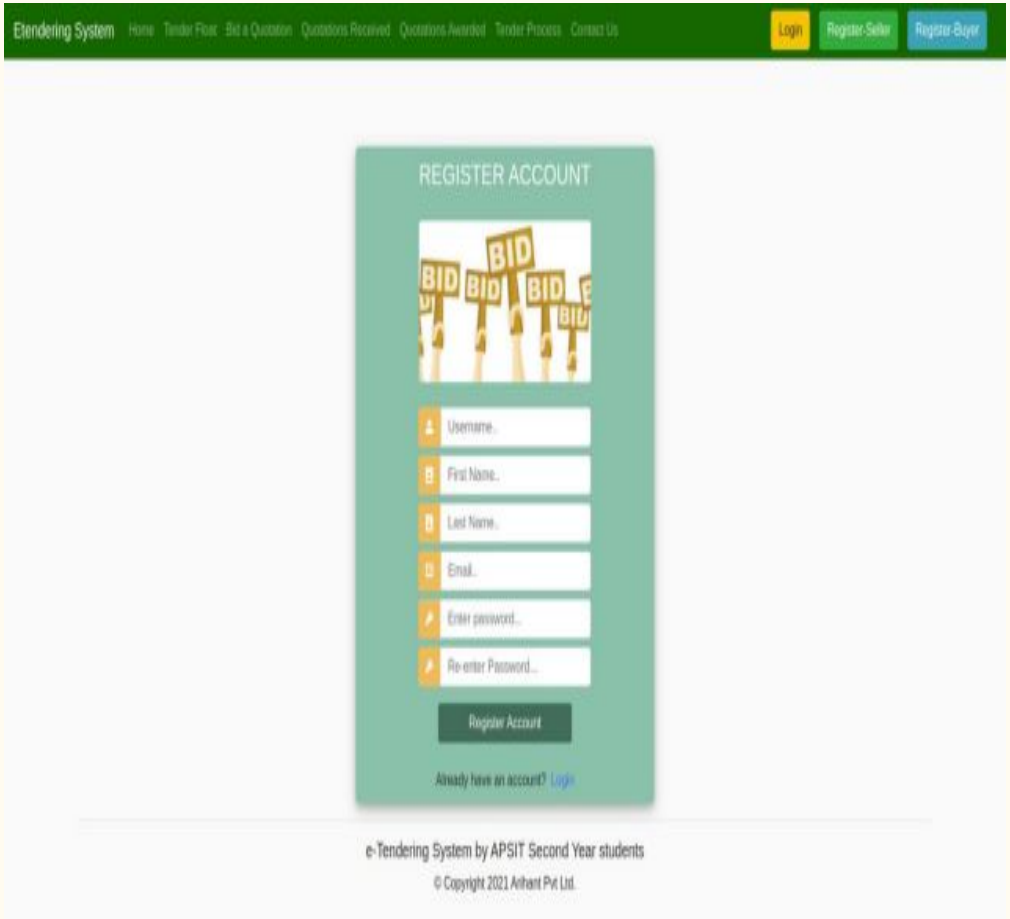
- Django: High level Python Web Framework
- views.py: Used to render or redirect the user to their desired web page dynamically based on their actions
- models.py: Contains the essential fields and behaviors of the data you're storing mapping to the database
- admin.py: Registers all the model classes in our admin panel
- apps.py: Configures the application in the project
- decorators.py: Used to restrict access to views based on the request method

3.3 Platforms for Execution

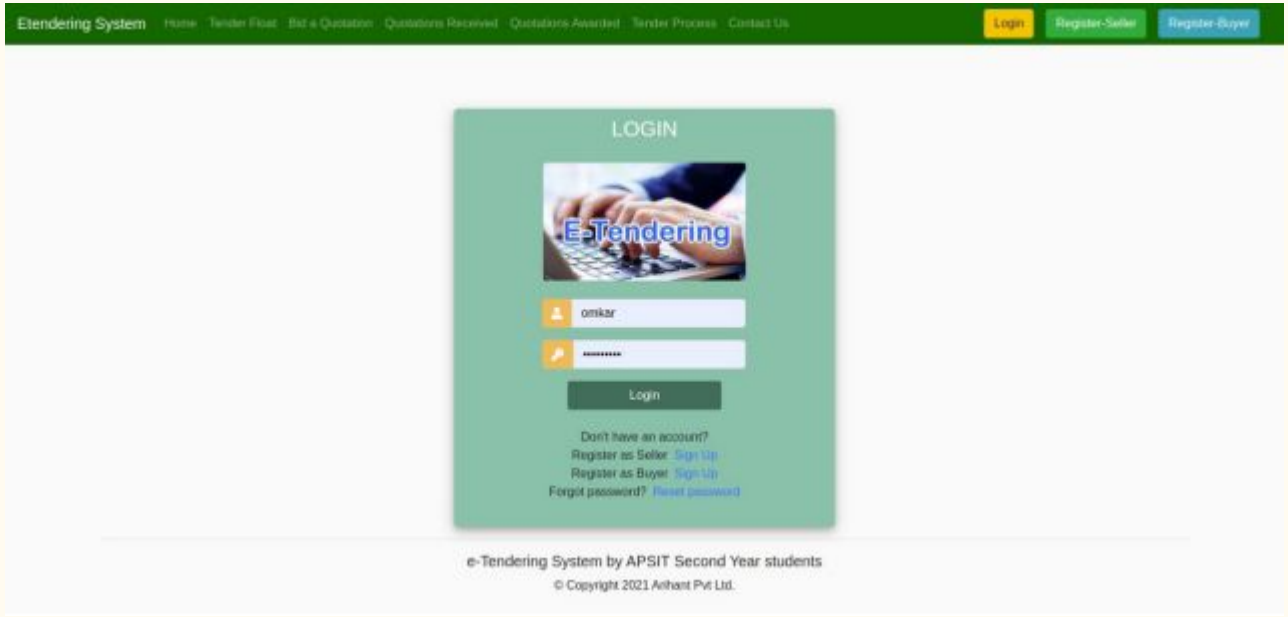
- forms.py : Provides a rich framework to facilitate the creation of forms and the manipulation of form data
- models.py: Contains the essential fields and behaviors of the data you’re storing mapping to the database.
- urls.py: When the URL patterns matches, Django imports and calls the given view
- views.py : Takes a Web request to return a Web response
- etender: etender is the name of the created application

4. Results

4.1 Register Page:



Login Page:


Etendering System
Home
Tender Float
Bid a Quotation
Quotations Received
Quotations Awarded
Tender Process
Contact Us
Login
Register-Seller
Register-Buyer
LOGIN
E-Tendering
omkar
Login
Don't have an account?
Register as Seller Sign Up
Register as Buyer Sign Up
Forgot password? Reset password
e-Tendering System by APSIT Second Year students
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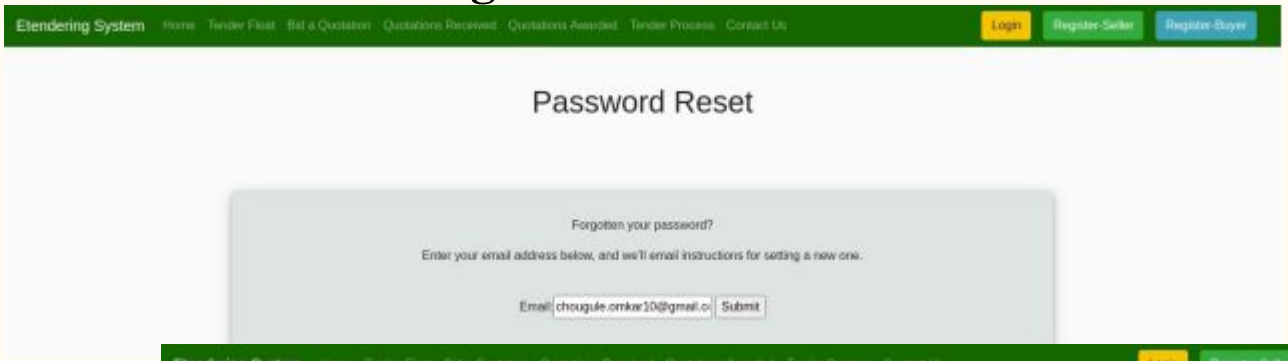
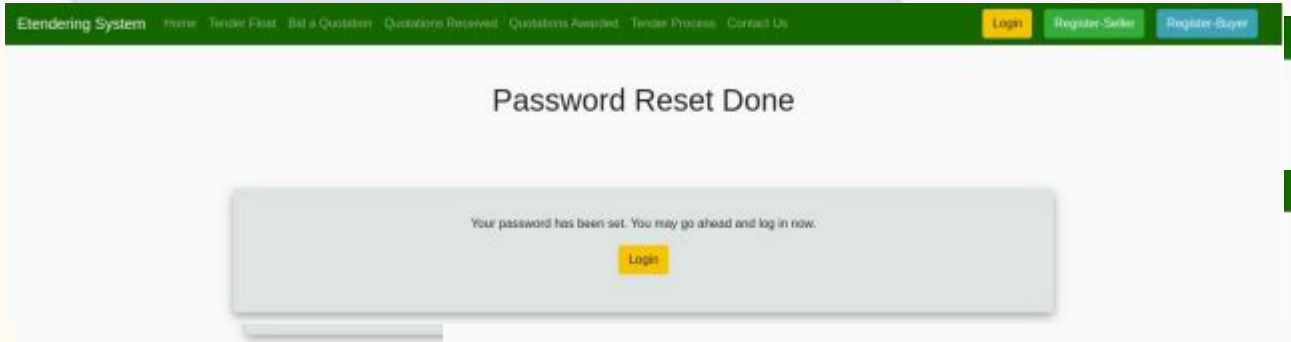
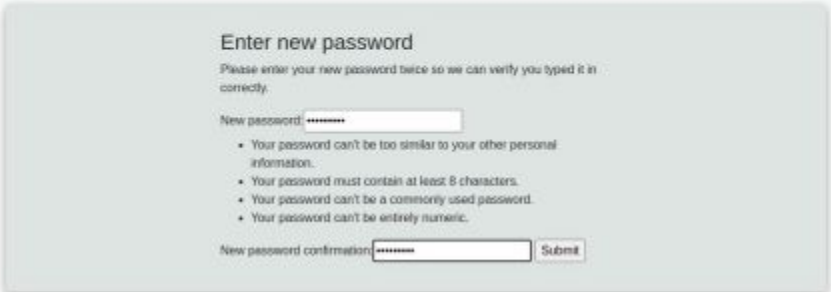
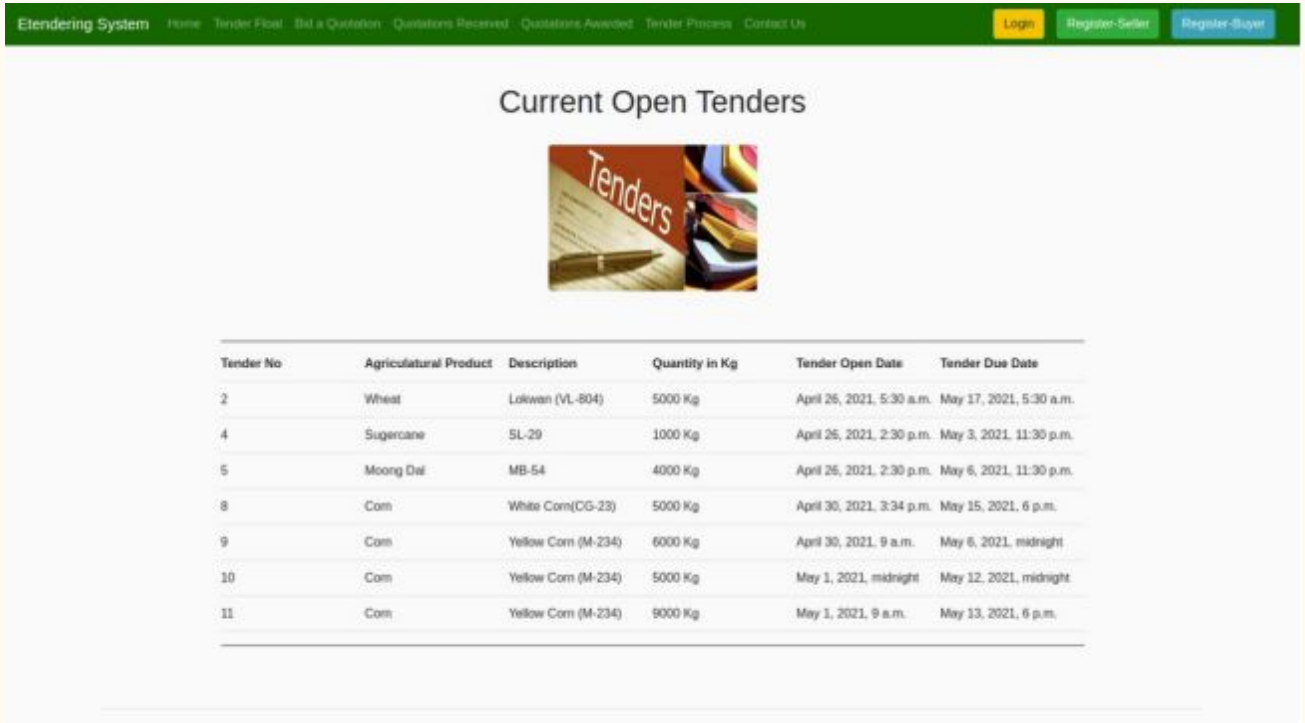
Password Reset Page:







Home Page:

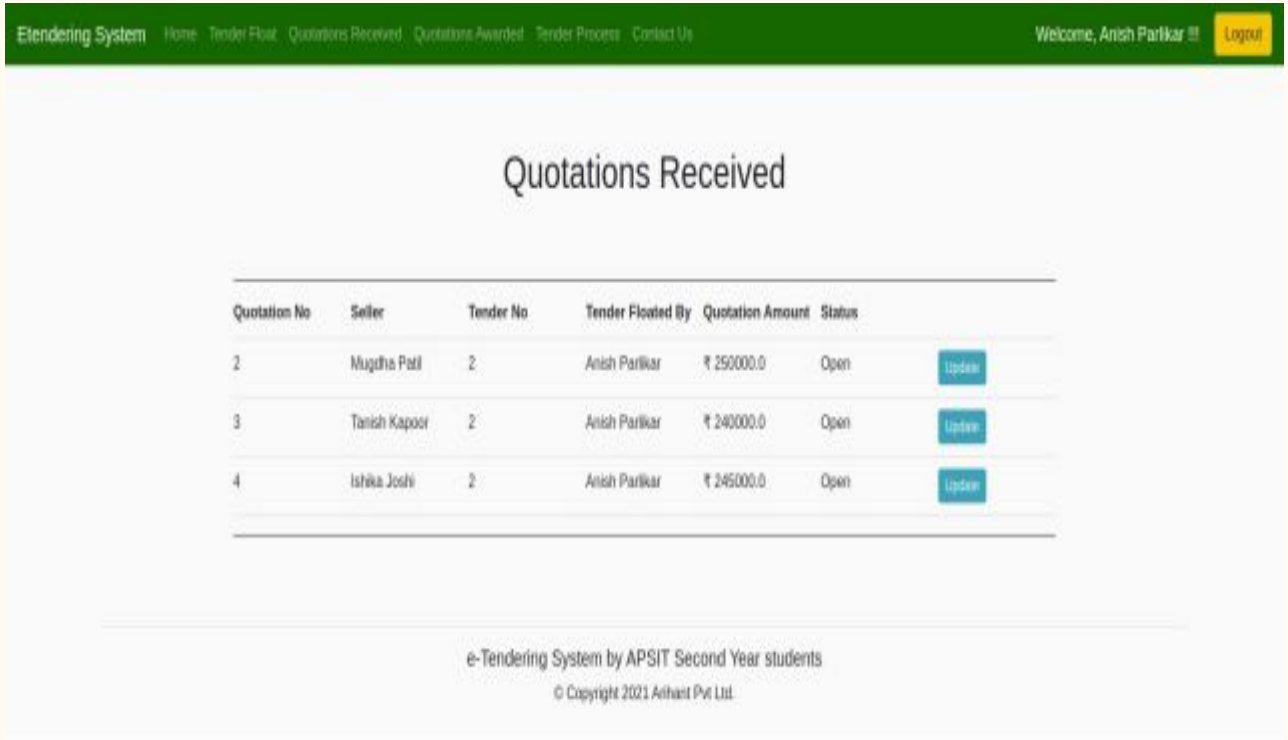


Tender No	Agriculatural Product	Description	Quantity in Kg	Tender Open Date	Tender Due Date
2	Wheat	Lokwan (VL-804)	5000 Kg	April 26, 2021, 5:30 a.m.	May 17, 2021, 5:30 a.m.
4	Sugercane	SL-29	1000 Kg	April 26, 2021, 2:30 p.m.	May 3, 2021, 11:30 p.m.
5	Moong Dal	MB-54	4000 Kg	April 26, 2021, 2:30 p.m.	May 6, 2021, 11:30 p.m.
8	Corn	White Corn(CG-23)	5000 Kg	April 30, 2021, 3:34 p.m.	May 15, 2021, 6 p.m.
9	Corn	Yellow Corn (M-234)	6000 Kg	April 30, 2021, 9 a.m.	May 6, 2021, midnight
10	Corn	Yellow Corn (M-234)	5000 Kg	May 1, 2021, midnight	May 12, 2021, midnight
11	Corn	Yellow Corn (M-234)	9000 Kg	May 1, 2021, 9 a.m.	May 13, 2021, 6 p.m.

Tender Float Page:

Bid a Quotation Page:

Quotation Received Page:



5.Conclusion and Future Scope

- In the current tender handling system all the tenders are processed through documents. It is a manual system.
- It is not only time consuming but also expensive due to more person hours, travel costs, etc for both the customers as well as vendors.
- These issues are solved in our e-Tendering System.
- Further implications are:
  - Login time limitation.
  - Different types of reports can be generated.
  - Payment Integration.
  - Online Verification: It uses techniques to determine if a government-issued ID belongs to the users.

6.Bibliography

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Thank You