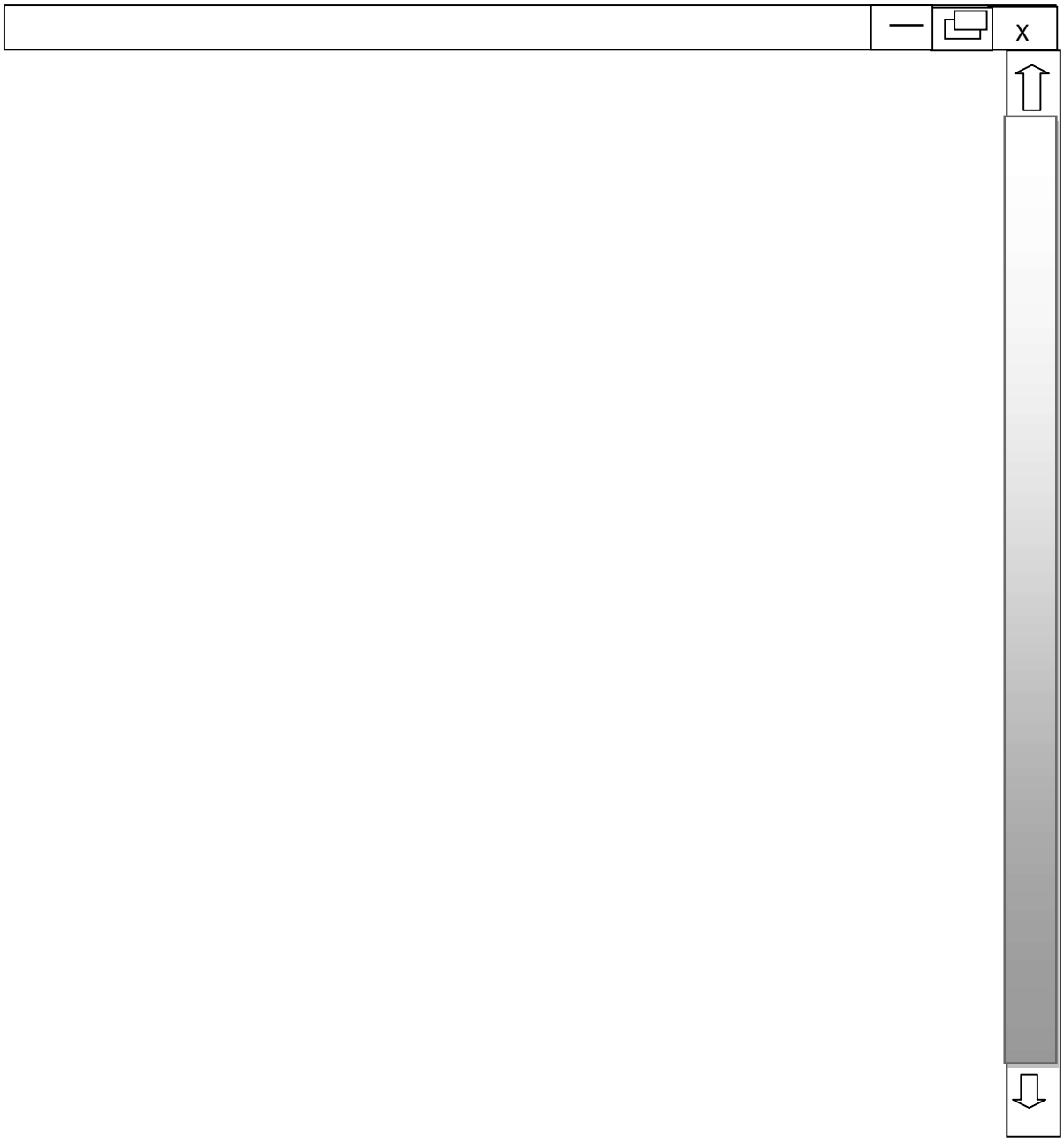
A DATA ANALYTICS APPROACH TO THE CYBERCRIME UNDERGROUND ECONOMY

PHASE 2 – THE DESIGN PHASE

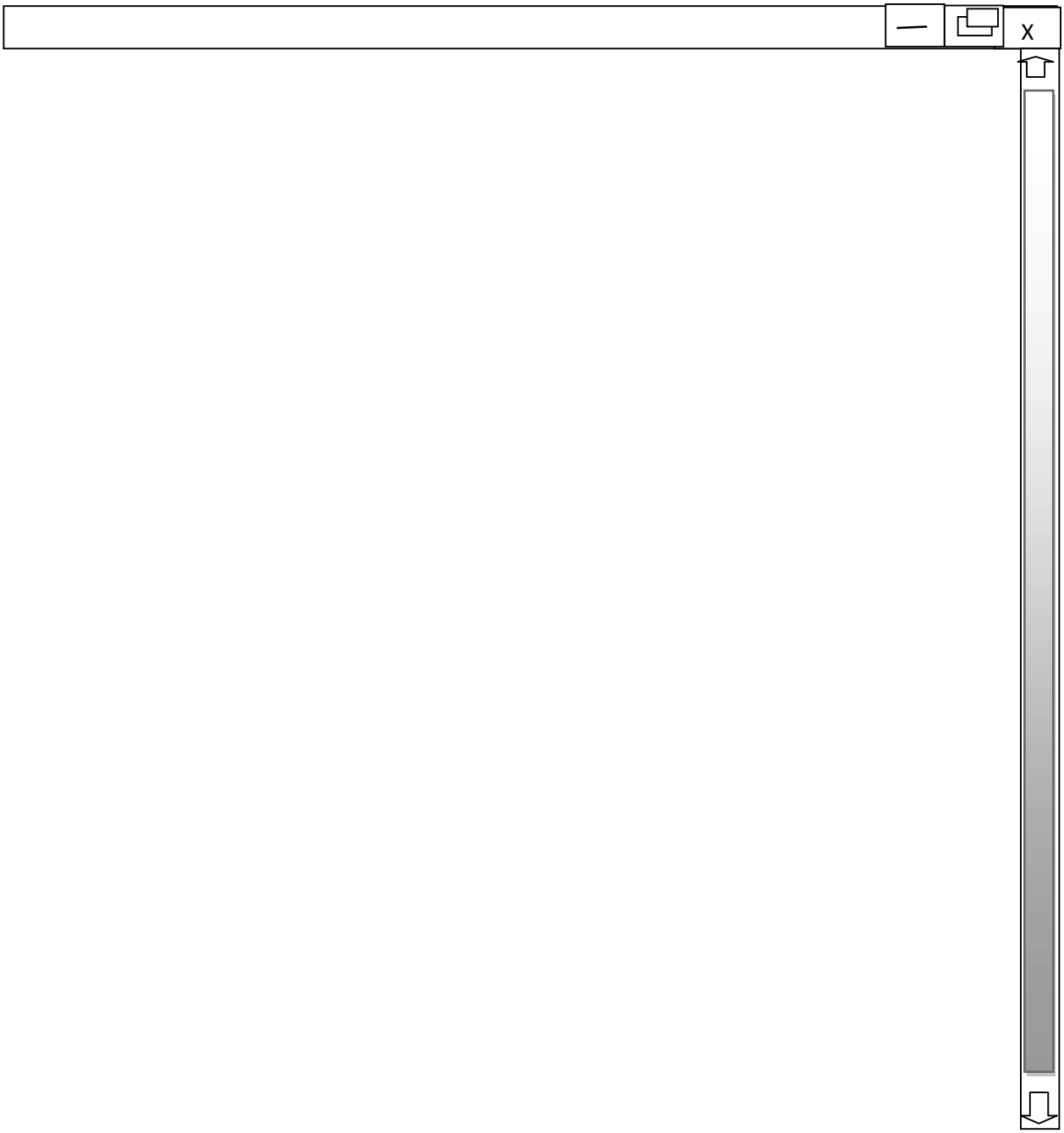
CONTENTS

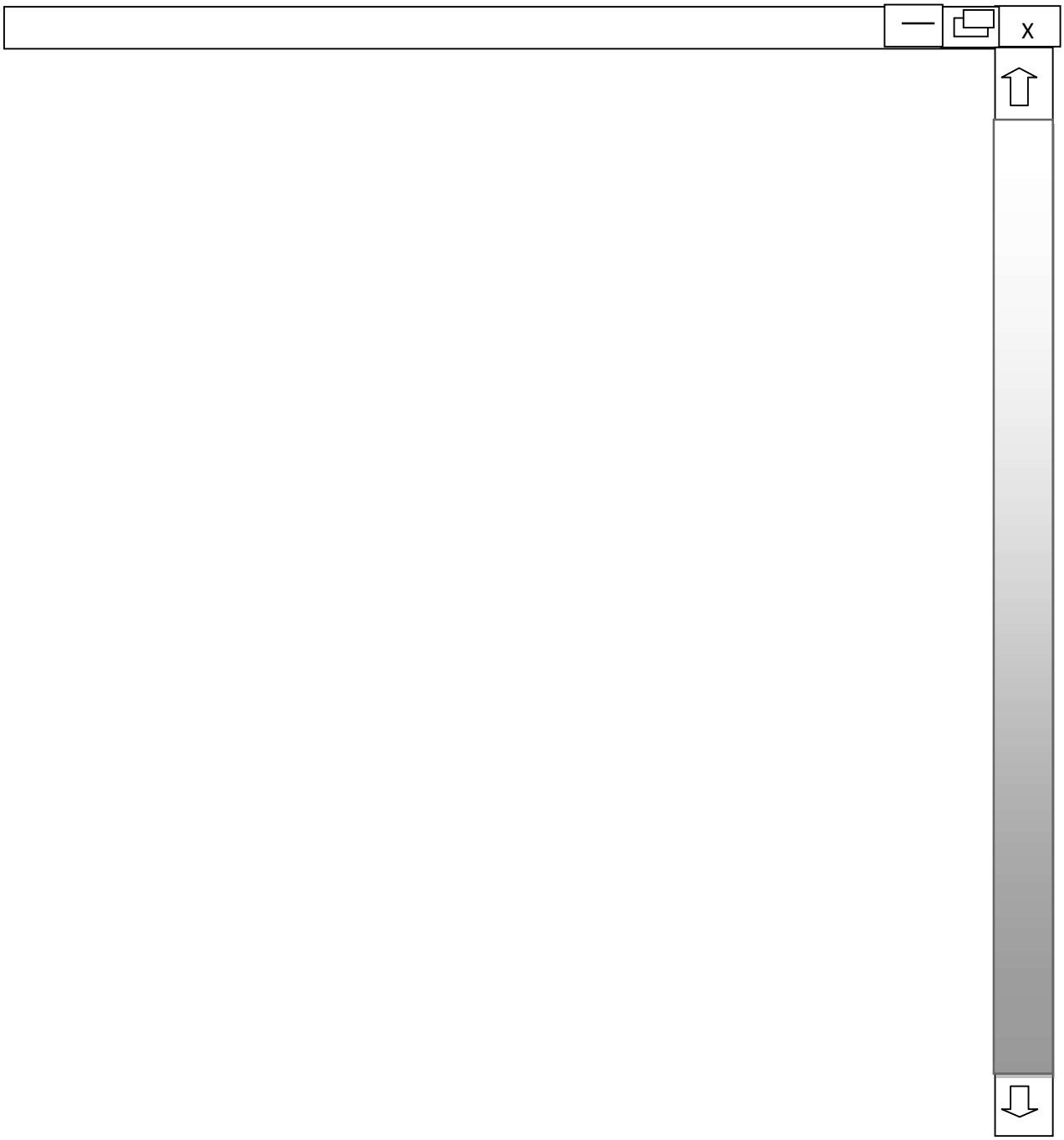
11.0 Screen Layout

HOME PAGE : This home page layout depicts the menu of our “ECOMART” website. This mainly consists of 4 sections and they are ECO-PRODUCTS , CONTACT US , ABOUT US and a REGISTRATION FORM or LOGIN FORM

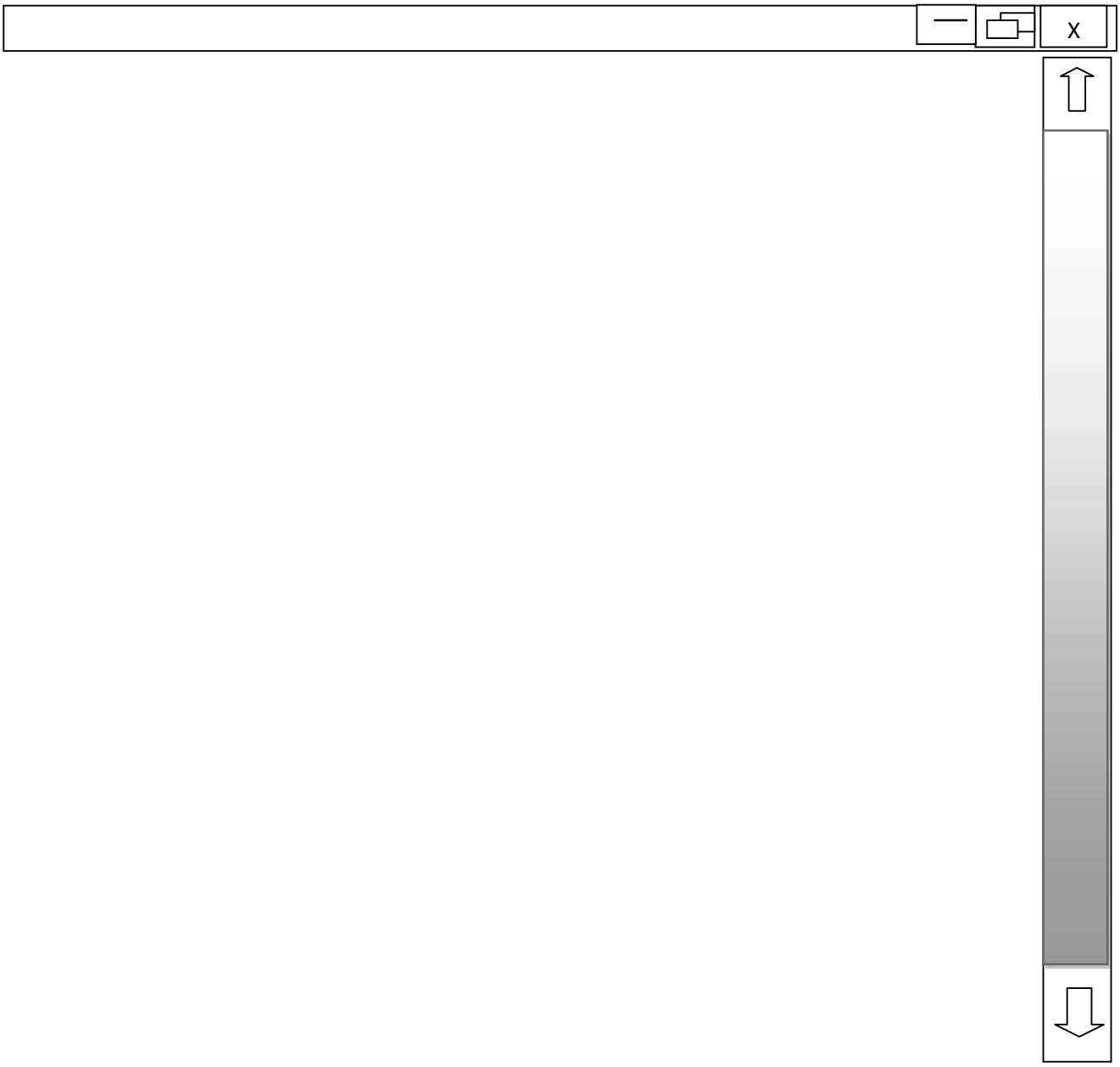


ECO PRODUCTS PAGE : It describes the different varieties of eco-products that is available for purchasing for the customer with its price details.

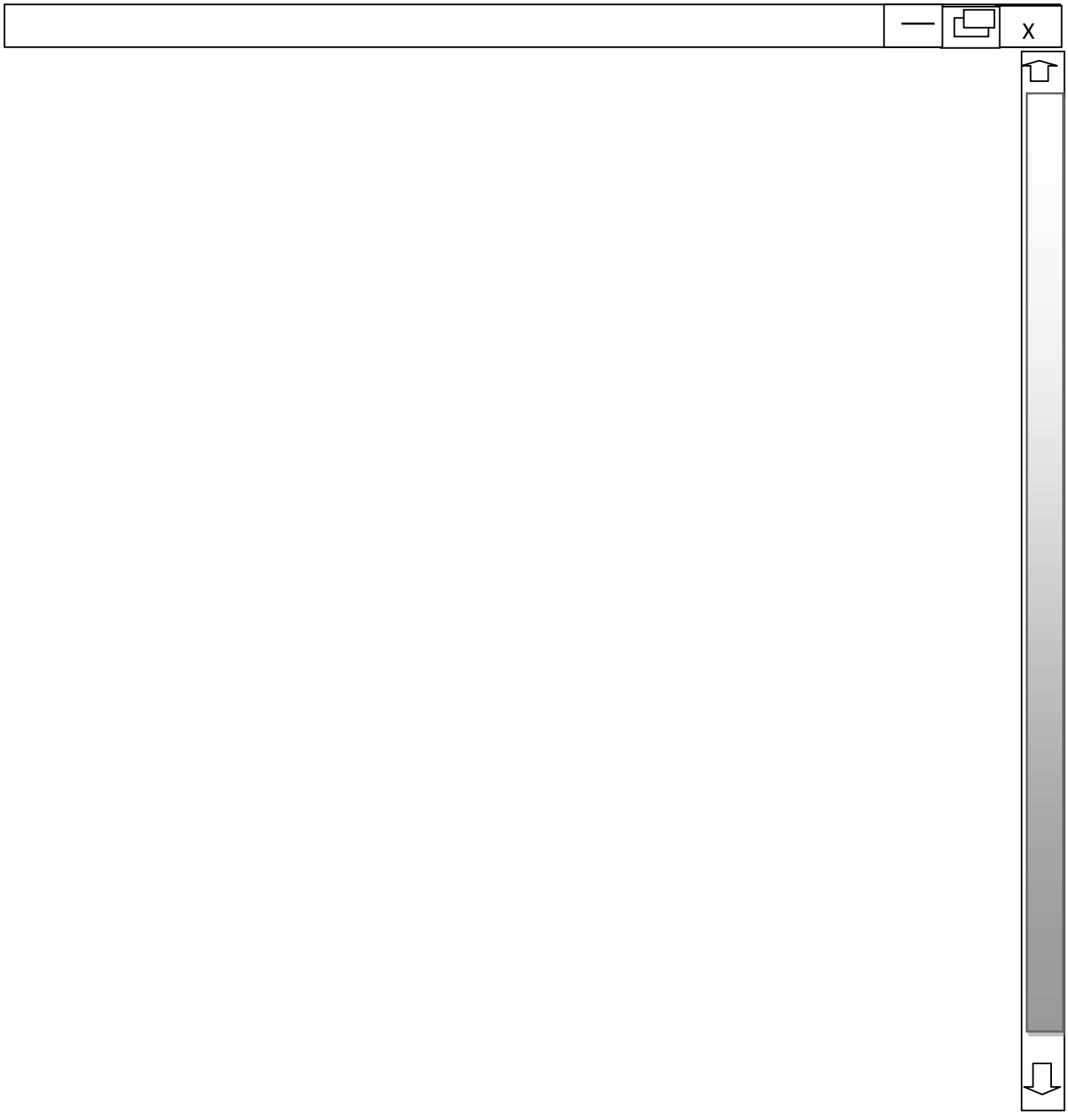



X

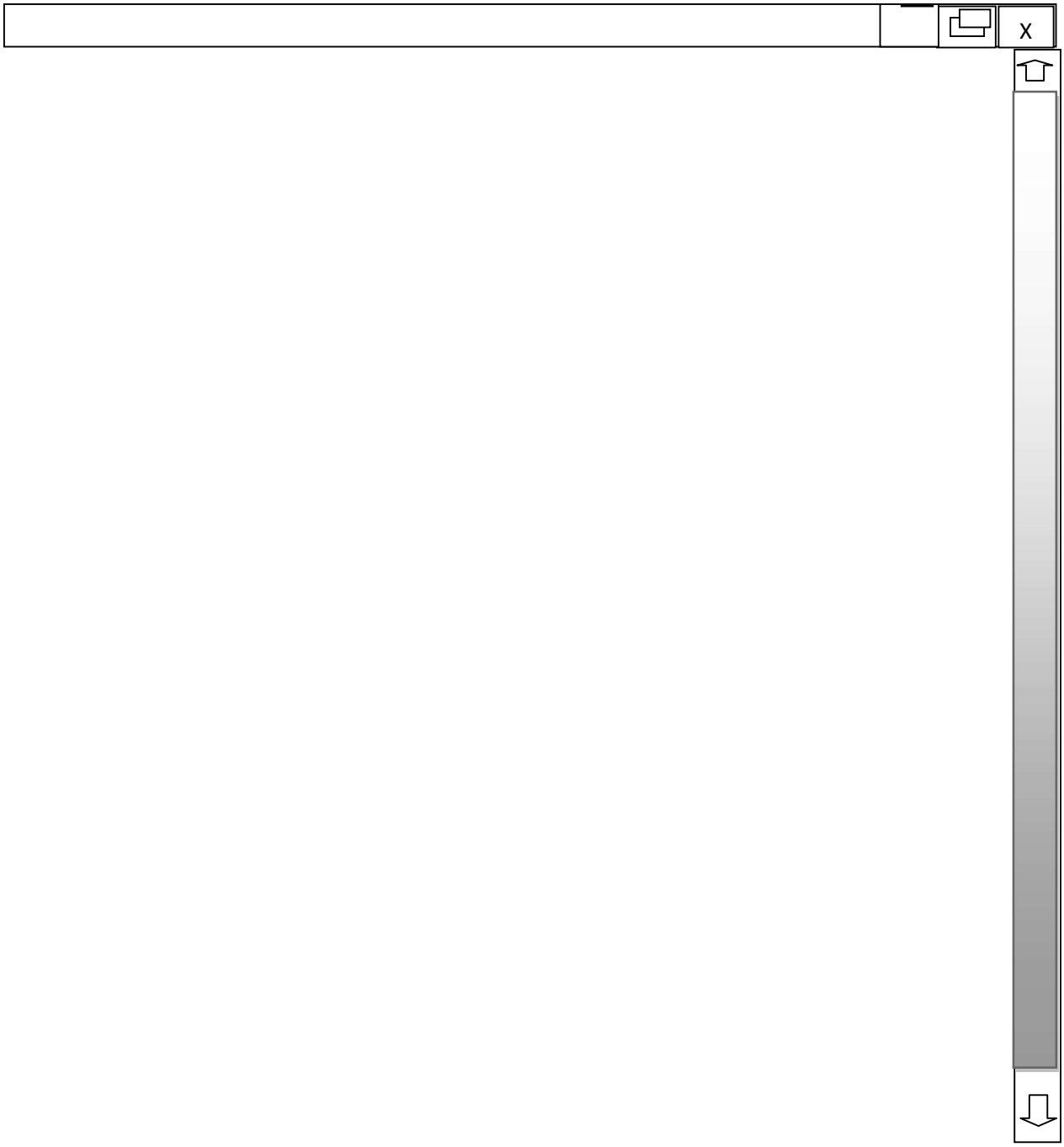
LOGIN PAGE : This page helps in signing up a registered member to our website.



CONTACT US PAGE : This page describes the details for contacting our company.



ABOUT US PAGE : This page describes about our Company profile and details from the day of establishment.

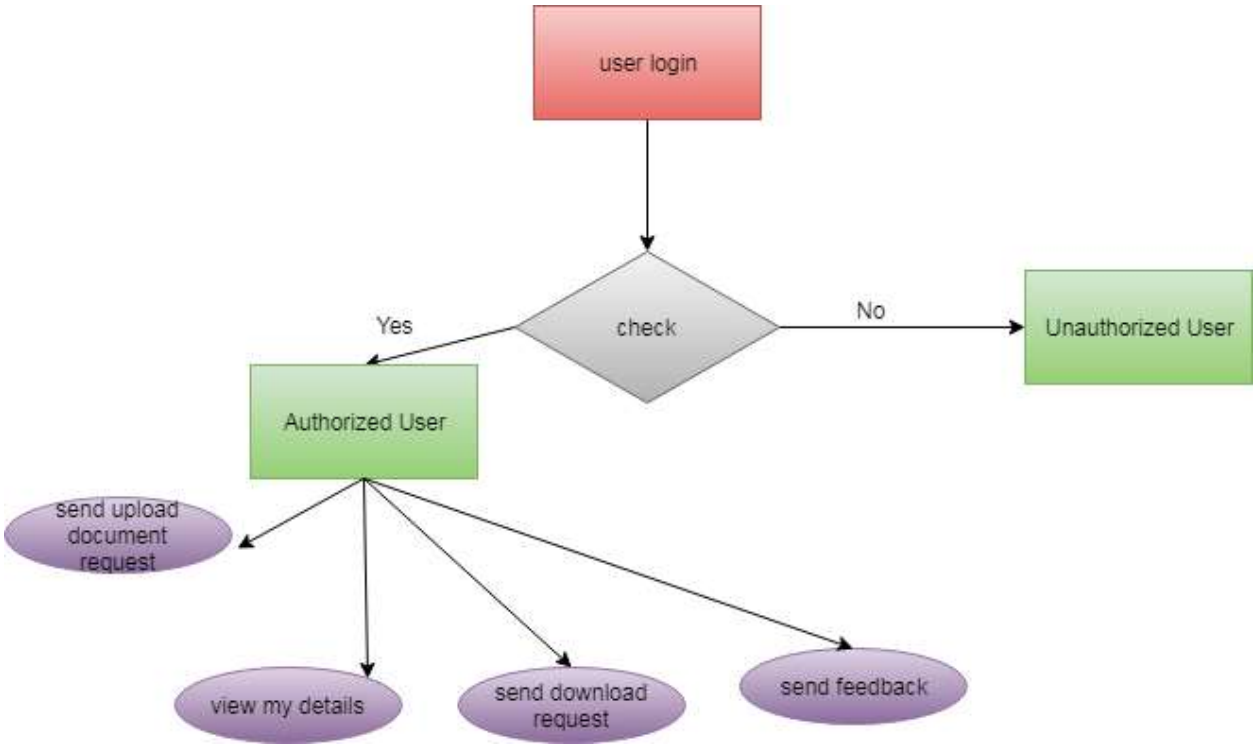


12.0 Database Design

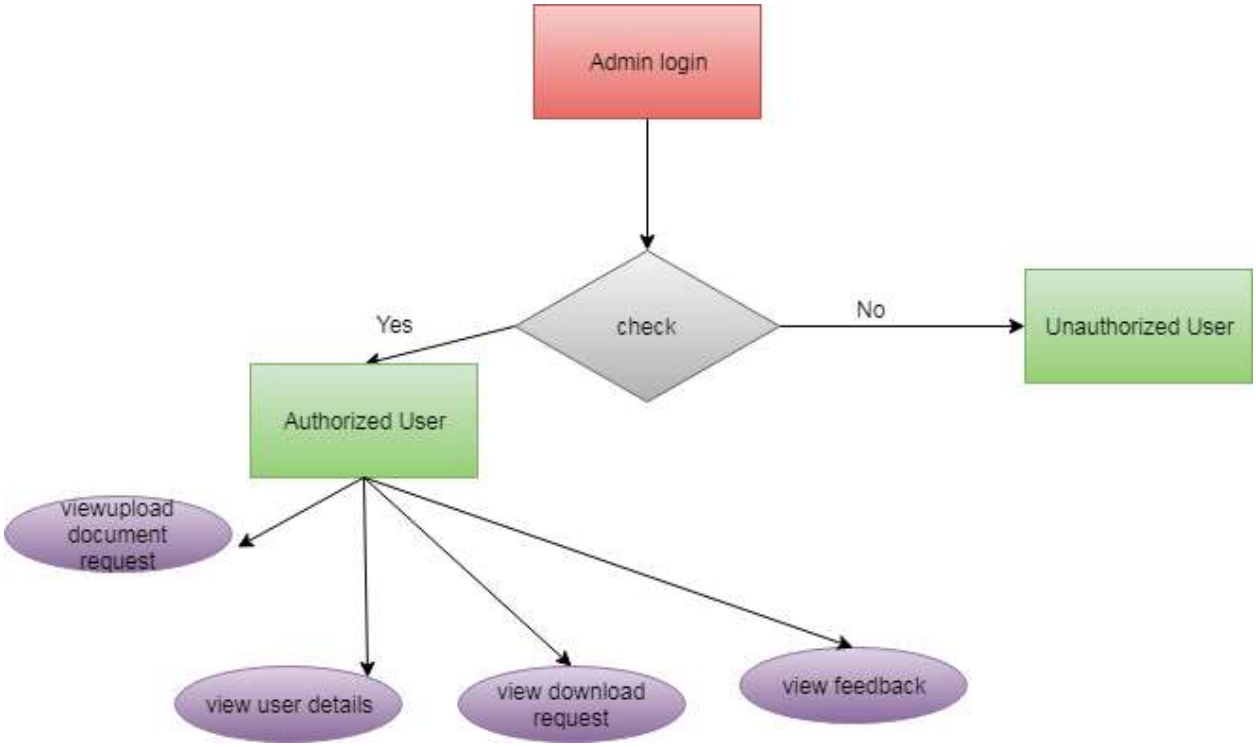
12.1 ER Diagram

An Entity-Relationship diagram (ERD) is a data modeling technique that graphically illustrates an information system's entities and relationships between those entities. An ERD is a conceptual and representational model of data used to represent the entity framework infrastructure. ER Diagrams are most often used to design or debug relational databases.

User:



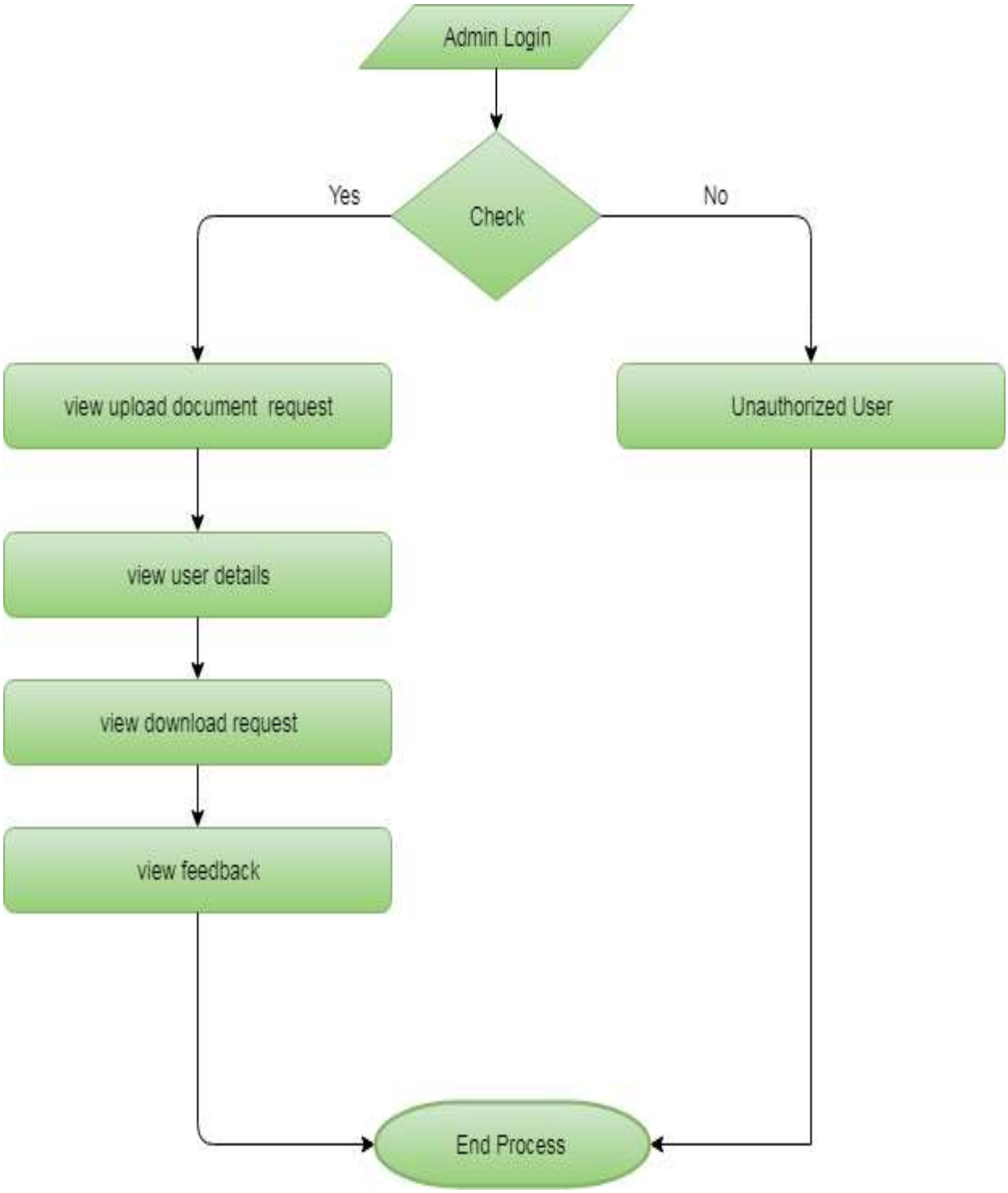
Admin:



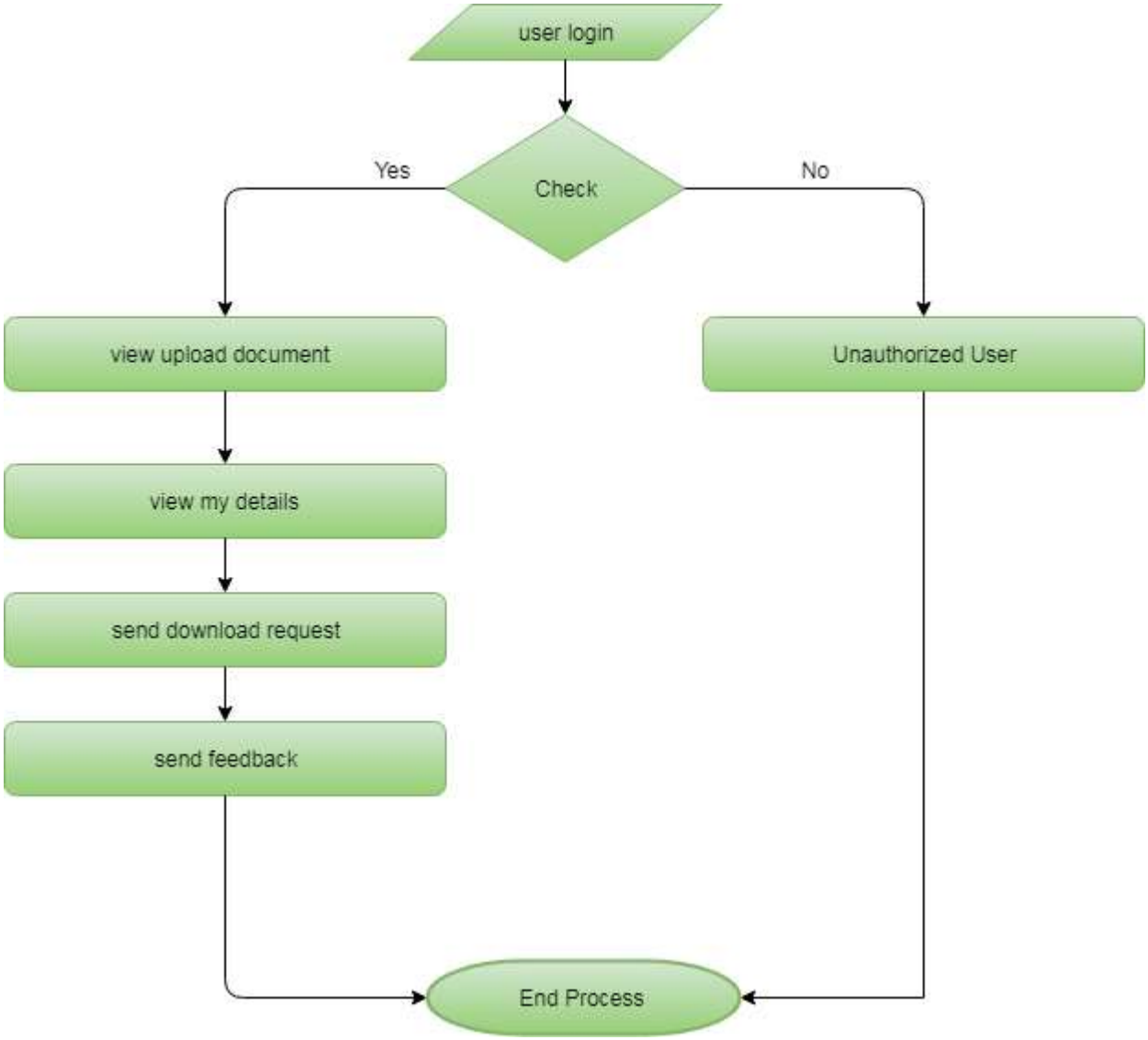
12.2 Data Flow Diagram

Data-flow diagram is a way of representing a flow of a data of a process or a system and information about the outputs and inputs of each entity and the process itself.

Business Entity/Admin :


Admin Login
Check
Yes
No
view upload document request
Unauthorized User
view user details
view download request
view feedback
End Process

User :


user login
Check
Yes
No
view upload document
Unauthorized User
view my details
send download request
send feedback
End Process

Flow chart

12.3 Table Struture

ADMIN TABLE

No.	Attribute name	Data type	Constraints	Description
1	Admin id	Varchar(10)	Primary key	Admin id
2	Password	Varchar(10)		Admin password

Table : Admin Details

ECO PRODUCT TABLE

No	Attribute name	Data type	Constraints	Description
1	Eco product id	Int(10)	Primary key	Eco product id
2	Subcategory id	Int (10)	Foreign key	Eco product subcategory id
3	Eco product name	Char(10)		Eco product name
4	Eco product cost	Int(10)		Eco product cost
5	Eco product details	Char(10)		Eco product details
6	Eco product image	Varchar(10)		Eco product images
7	Quantity	Int(10)		Eco product Quantity

Table : Eco products details

ECO PRODUCT CATEGORY

No	Attribute name	Data type	Constraints	Description
1	Category id	Int (10)	Primary key	Eco product category id
2	Category name	Char(10)		Eco product category name

Table : Eco Product Category

ECO PRODUCT SUBCATEGORY TABLE

No	Attribute name	Data type	Constraints	Description
1	Subcategory id	Int (10)	Primary key	Eco product subcategory id
2	Category id	Int (10)	Foreign key	Eco product category id
3	Subcategory name	Char(10)		Eco product subcategory name
4	Description	Char(20)		Product description

Table : Eco product Subcategory

CUSTOMERTABLE

No.	Attribute Name	Data Type	Constraints	Description
1	Email id	Varchar(10)		Customer Email id
2	Password	Varchar(10)		Password
3	Address	Char(10)		Customer address
4	Customer Name	Char(10)		Customer name
5	Customer id	Int(10)	Primary key	Customer id
6	Country	Char(10)		Customer Country name
7	Phone number	Int(10)		Customer phone number

Table: Customer Details

CUSTOMER TRANSACTION TABLE

No.	Attribute name	Data type	Constraints	Description
1	Transaction date	Date		Customer order date
2	Transaction id	Int (10)	Primary key	Customer order id
3	Customer id	Int (10)	Foreign key	Customer id
4	Dispatched date	Date		Order delivery date
5	Status	Date		Order dispatch date

Table : Customer Transaction

FEED BACK TABLE

No.	Attribute name	Data type	Constraints	Description
1	Feed Back id	Int (10)	Primary key	Feed Back id
2	Feed Back date	Date		Feed Back date
3	Customer id	Int (10)	Foreign key	Customer id
4	Feed Back	Char(20)		Feed Back about item

Table : Feed Back

CART DETAILS TABLE

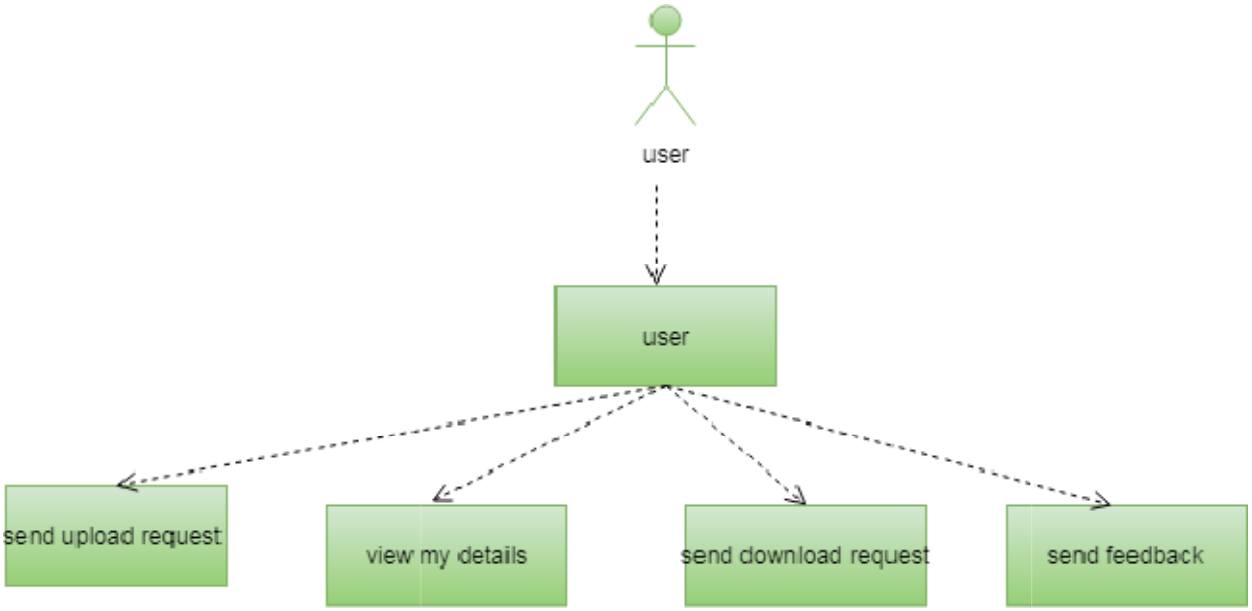
No	Attribute name	Data type	Constraints	Description
1	Cart id	Int (10)	primary key	Cart id
2	Customer id	Int (10)	Foreign key	Customer id
3	Eco product id	Int (10)	Foreign key	Eco product id
4	Quantity	Int (10)		Quantity

Table : Cart details

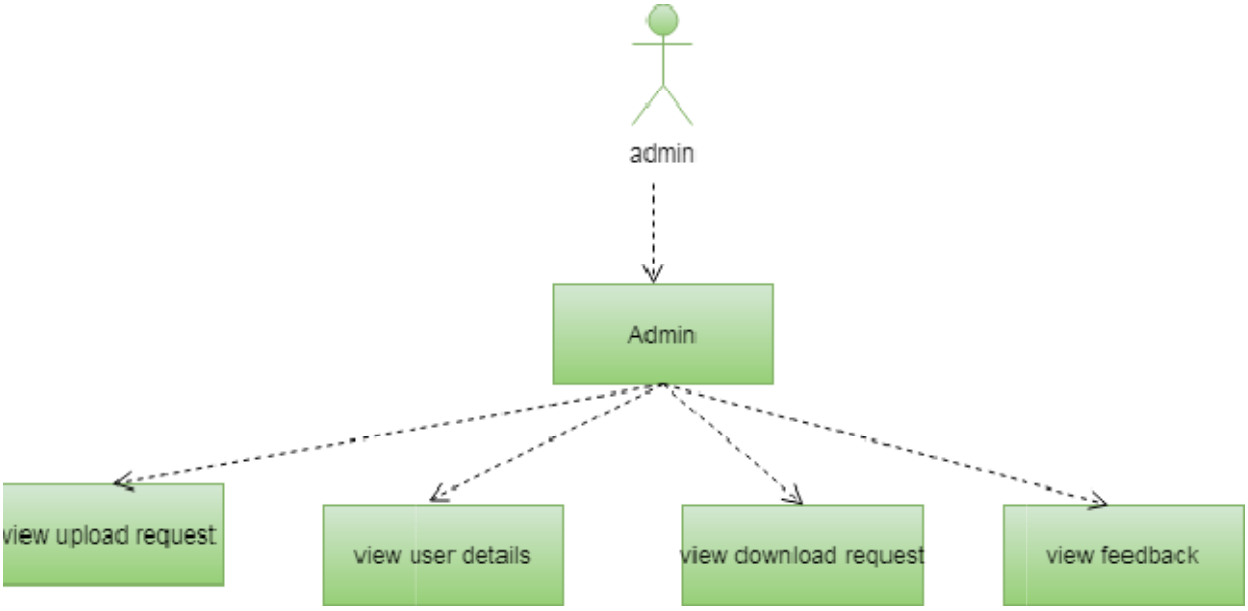
13.0 Use Case Diagram

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

Business Entity/User:



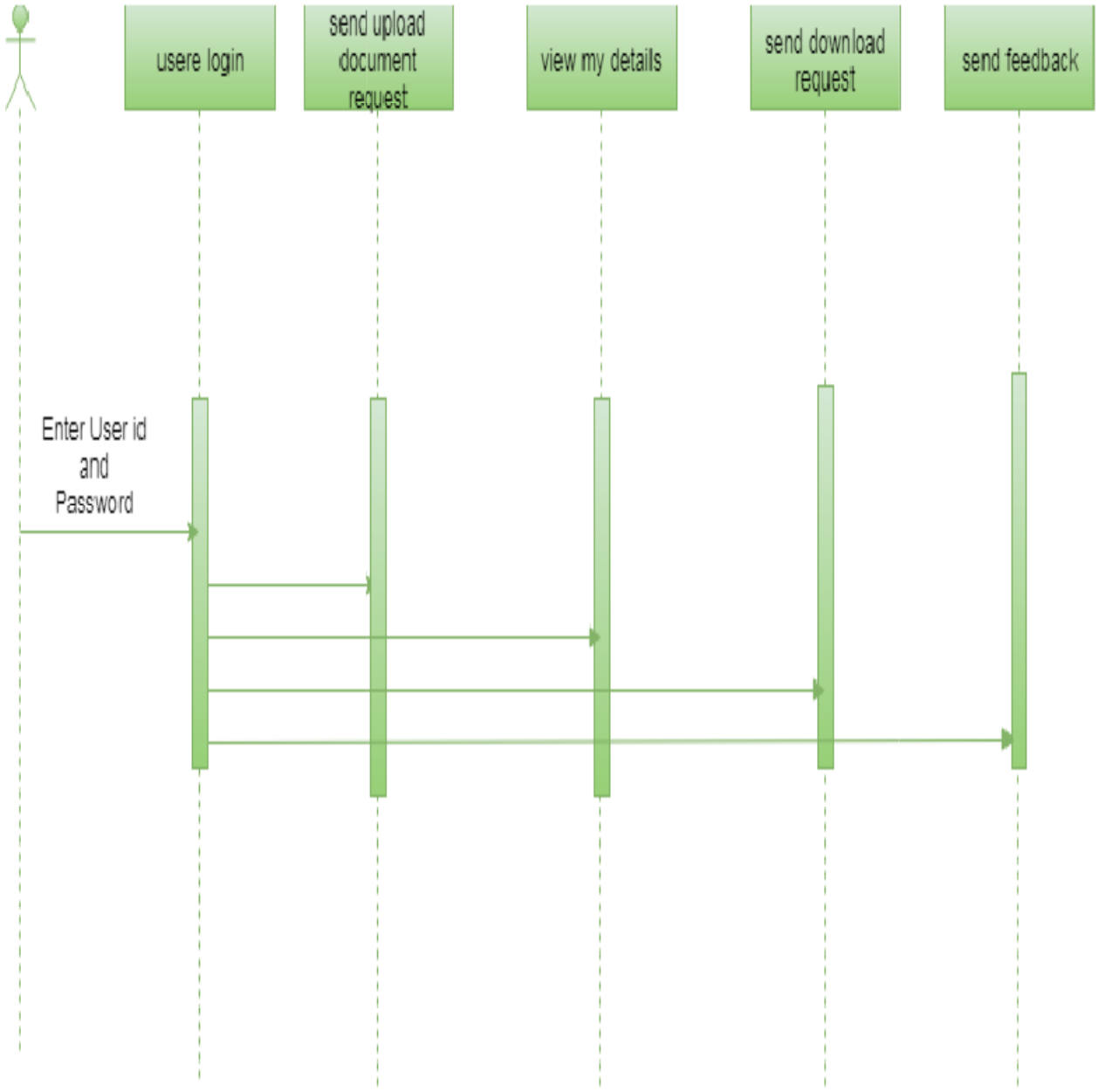
Admin:



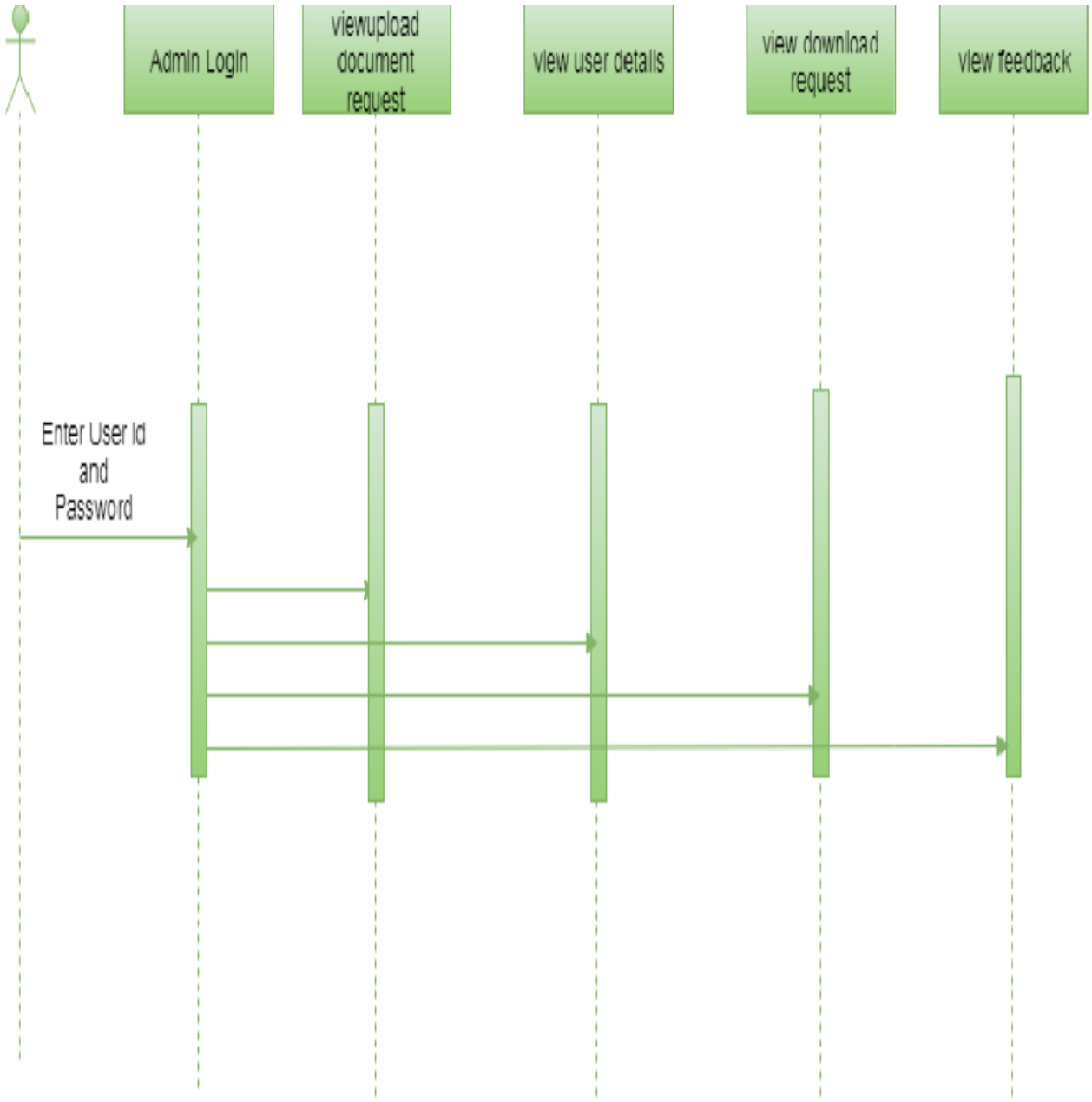
14.0Sequence diagram

a) User

When Admin sign up successfully he/she can can view, add and delete eco products category and also he/she can view ,add and delete any eco products, as well as view and respond to customer orders and can also view customer feedback for future upgradation and at last admin also have an option to update his/her password.

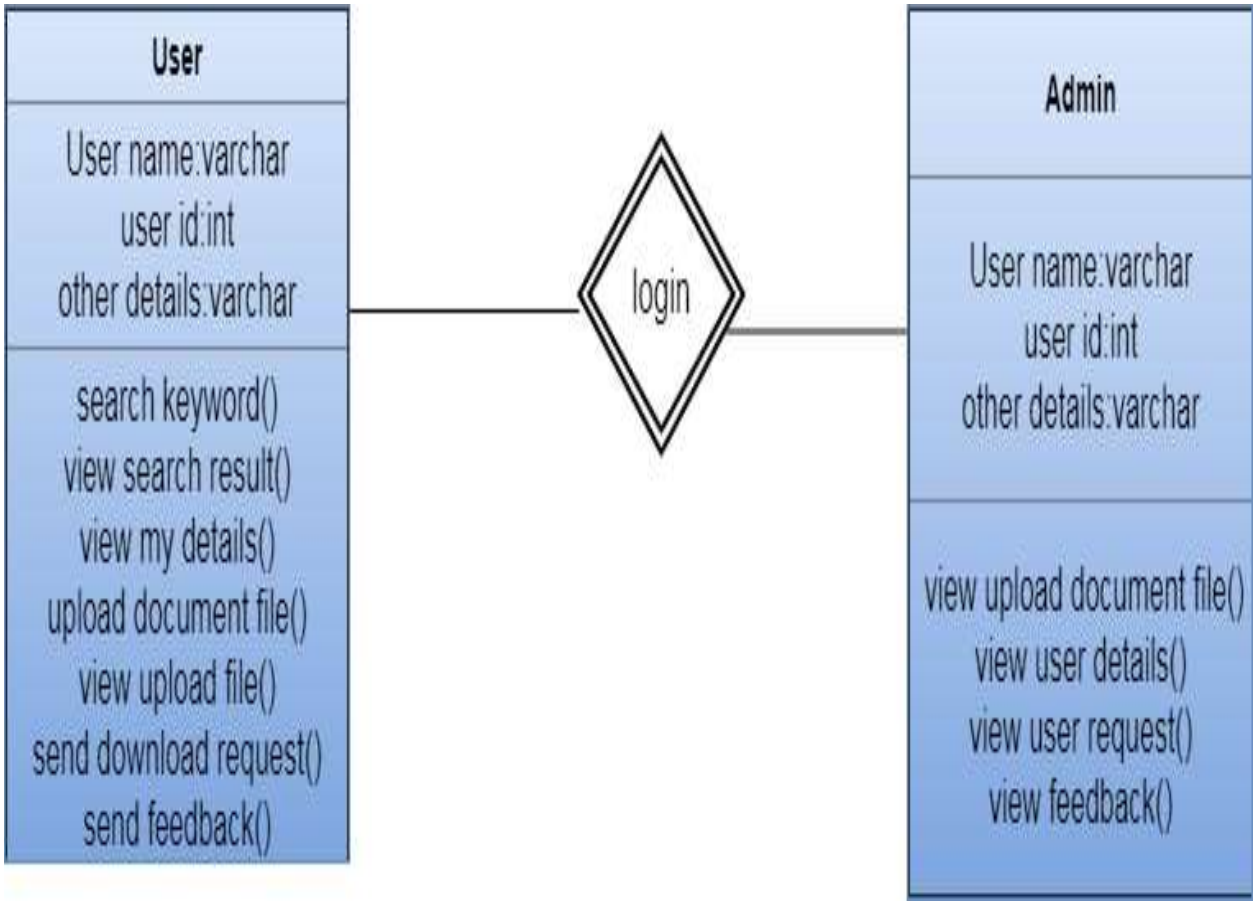


b) Admin:



When a user gets signed up, he/she can view or delete review order and can add to place a order , also can view order history and can add his/her feedback and at last he/she can also update his/her profile

15.0:Class DIagram



16.0 SYSTEM TEST

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

TYPES OF TESTS

Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

Integration testing

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

Functional test

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures : interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

System Test

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

White Box Testing

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot "see" into it. The test provides inputs and responds to outputs without considering how the software works.

Unit Testing

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

Test strategy and approach

Field testing will be performed manually and functional tests will be written in detail.

Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

Test Cases:

TC#	Description	Expected Result	Actual Result	Status of Execution Pass/Fail
TC01	Execute/run the application	Application should run without any interrupts	---------	---------
TC02	Verification of Login Page	Enter User Name and Password. It should verify with database.	---------	--------

TC03	Verification of Admin Page, input User Name and password	If Admin Login Name & Password is valid then it should navigate to respective Admin home page. If invalid then show message that Input Username & Password is wrong.	---------	----------
TC04	Verification of admin updating his password in Admin Page	If an admin updates his/her password then it should navigate to password updated successfully page if not it should display password update unsuccessful page.	----------	----------
TC05	Verification of an admin adding a new eco product.	If a admin adds an eco product, it should navigate to eco product updated successfully page or else it should display eco product update unsuccessful page.	----------	----------
TC06	Verification of an admin responding to a feedback.	If an admin responds to feedback of an eco product, it should navigate to feedback response updated successfully page or else it should display feedback response unsuccessful page.	----------	----------

TC07	Verification of Member Page, input User Name and password	If a member Login Name & Password is valid then it should navigate to respective member home page. If invalid then show message that Input Username & Password is wrong.	----------	----------
TC08	Verification of a member updating his profile.	If a member updates his profile, it should navigate to profile updated successfully page or else it should display profile update unsuccessful page.	----------	----------
TC09	Verification of a member searching for an eco product	If a member searches an eco product , it should navigate to recommended eco products page or else it should display eco products not found page.	----------	----------

TC10	Verification of a member placing an order in a Member Page.	If a member places an order, it should navigate to order placed page or else it should display placing an order unsuccessful page.	----------	----------
TC11	Verification of a member adding a feedback about an eco product.	If a member adds feedback of an eco product, it should navigate to feedback updated successfully page or else it should display feedback update unsuccessful page.	----------	----------
TC12	Verification of viewing eco products button	If button is pressed on eco product ,it should display details of that eco product.	---------	----------

17.0 Limitations/Constraints/Drawbacks