System Requirements Statement (SRS) –

Online Electricity Bill Management System

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# Introduction

This document explains the system requirements and scope for developing Online Electricity Bill Management System.

Online Electricity Bill Management System could divide the three main parts, Admin part, Sub-Admin part, Consumer part.

This document describes the system requirement of the Account part.

# Functional Requirements

The Account part of Online Electricity Bill Management System has three modules which are divided 13 processes described as below.

|  |  |  |
| --- | --- | --- |
| **No** | **BRS requirement ID** | **Description** |
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## Farmer Module

* Farmer is the user of system who wants to sale the product.

* He is also able to view the market prices of products.

### Account Creation Process

* E-Farming System compels to create the account before using it. So, E-Farming System should provide the function which makes farmer creates new account.
* When farmer creates new account, the function demands four information described as below.

1. Login information
2. Contact Details

* The Login information

The Login information consists of some items described as below.

1. UserID
2. Password
3. First Name
4. Last Name
5. E-mail address
6. User Type
   * All items are compulsory demanded.
   * UserID

* The UserID should be unique. If the UserID correspond with not case-sensitive to other which is previously registered, the UserID should not be registered as an account.
  + Password
* The Password has constrains which makes the Password consists of more than or equal 8 and less than or equal 16 characteristics including characters described as below.

1. Numeric figure (at least one)
2. Capital alphabet (A-Z)(at least one)
3. Small alphabet (a-z)(at least one)
4. Special character (#, $, %, &, etc.) (at least one)

* The Password is masked by dummy characters. The re-entering Password is demanded.
* The Password must be encrypted in e-Farming System.
  + User Type

The User Type falls into three categories described as below.

1. Farmer
2. Wholesaler
3. Administrator

* The User Type defines also three types of user; "Farmer user", "Wholesaler user", and "Administrator user”.
* In an Account Creation Process, the user can select Farmer.
* No one could select The Administrator, because Administrator is implemented to e-Farming System in advance.
* Contact Details
* The Contact Detail consists of some items described as below.

1. Permanent Address
2. Contact Phone No
   * All items are compulsory demanded.
   * Permanent Address

* Permanent Address should be filled.
* But only the state should be selected from options.
* The Security Question information

The Security Question information is needed when farmer lost their Password. This information consists of two items described as below.

1. Selected Question
2. Answer
   * All items are compulsory demanded.
   * Some questions which are difficult to answer for anyone else are prepared in advance.

E.g. which color do you like most?

* + A question should be selected from options by the farmer, and the Answer is registered by the farmer.
* Login information should be entered on one screen, and then farmer information and Security Question information should be entered on another screen.

### Login Process

* E-Farming System always compels user authentication before using itself except when a new account is successfully created.
* The user authentication demands UserID and Password. The UserID and the Password should be checked in three ways.
  + First, The UserID and the Password should be existed and correct.
* If The UserID and the Password are not equal to what the user has registered, the user authentication cannot be provided.
  + Second, the User Type linked to the UserID should be "farmer".
* When the User Type is "Farmer", then user can be placed on “Farmer Home”.
  + Finally, UserID should be available.
* The Administrator can decide whether the UserID is available or suspended – Refer to the SRS of the Admin part.
* If farmer is rejected, user authentication is not provided for system user.
* The farmer account should alive for so long as the duration decided by Admin.
* Only when the three checks are successfully completed, farmer can be placed on respected page.
* The “Farmer Home” provides the some items described as below.

1. A trigger to logout
2. A trigger to update Account
3. A trigger to Change Password
4. A trigger to Search Product
5. A trigger to Publish Product for sale
6. A trigger to Update Product Information
7. A trigger to Delete Product
8. A trigger to Browse existing Market price

### Forgot Password Process

* When system user lost their Password, the recovery method should be provided by e-Farming system.

The recovery method is described as below.

* + First, system user enters their UserID for e-Farming System.
  + Next, E-Farming System demands the Answer which has been registered since when the Account was created.
  + Only when the Answer is correct, farmer get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by e-Farming System.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The Farmer could get the farmer authentication using the new password.
  + Then, the farmer had better change the new password manually.
* If the Answer is not correct, otherwise, the correct Answer is demanded for user again.
  + In that case, Of course, farmer couldn’t get the new password.

### Change Password Process

* When farmer wants to change their Password, the measure should be provided by e-Farming System.
* Therefore, E-Farming System should provide the function which is available after getting the farmer authentication.
* The function demands the current password and the new password.
  + Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
  + The current password and the new password are masked by using dummy characters.
  + The new password is demanded to enter twice to avoid a typing error.
* Only when the current password is correct, farmer could change their Password.
* When the current password is changed into new password, E-Farming System compels user authentication again.

### Update Account Process

* E-Farming System should provide the function which makes the account updated for farmer.
* The information farmer could update is described below.

1. Login information
2. User information
3. Security Question Information

* The Login information

The updatable items as described below.

1. First Name
2. Last Name
3. E-mail address
   * All items are compulsory demanded, but updating is optional.

* The User information

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address
   * All items are compulsory demanded, but updating is optional.

* The Security Question information

The updatable items as described below.

1. Selected Question
2. Answer
   * All items are compulsory demanded, but updating is optional.

### Search product

* Search conditions are described as below.

1. Product category
2. Price range

### Publish product for sale

* Publish products requirements are described as below.

1. Product category
2. Price
3. Product name
4. Quantity
5. Photos

* Farmer can see market prices before publishing products.

### Update product information

* After publishing the product the farmer can only update following contents.

1. Product quantity
2. Product price.

### Delete product information

• After Publishing if farmer wants to remove some products then he can delete the product.

### Browse existing product Price

• Farmer could see the information of existing products.

#### Wholesaler Module

### Account Creation Process

* E-Farming System compels to create the account before using it. So, E-Farming System should provide the function which makes farmer creates new account.
* When farmer creates new account, the function demands four information described as below.

1. Login information

2.Contact Details

3.Security Question Information

4.Payment information.

* The Login information

The Login information consists of some items described as below.

5.UserID

6.Password

7.First Name

8.Last Name

9.E-mail address

10.User Type

* + All items are compulsory demanded.
  + UserID
* The UserID should be unique. If the UserID correspond with not case-sensitive to other which is previously registered, the UserID should not be registered as an account.
  + Password
* The Password has constrains which makes the Password consists of more than or equal 8 and less than or equal 16 characteristics including characters described as below.

1.Numeric figure (at least one)

2.Capital alphabet (A-Z)(at least one)

3.Small alphabet (a-z)(at least one)

4.Special character (#, $, %, &, etc.) (at least one)

* The Password is masked by dummy characters. The re-entering Password is demanded.
* The Password must be encrypted in e-Farming System.
  + User Type

The User Type falls into three categories described as below.

1.Farmer

2.Wholesaler

3.Administrator

* The User Type defines also three types of user; " Wholesaler user", "Wholesaler user", and "Administrator user”.
* In an Account Creation Process, the user can select Wholesaler.
* No one could select The Administrator, because Administrator is implemented to e-Farming System in advance.
* Contact Details
* The Contact Detail consists of some items described as below.

1.Permanent Address

2.Contact Phone No

* + All items are compulsory demanded.
  + Permanent Address
* Permanent Address should be filled.
* But only the state should be selected from options.
* The Security Question information

The Security Question information is needed when Wholesaler lost their Password. This information consists of two items described as below.

1. Selected Question
2. Answer
   * All items are compulsory demanded.
   * Some questions which are difficult to answer for anyone else are prepared in advance.

E.g. which color do you like most?

* + A question should be selected from options by the Wholesaler, and the Answer is registered by the Wholesaler.
* Login information should be entered on one screen, and then Wholesaler information and Security Question information should be entered on another screen.

### Login Process

* E-Farming System always compels Wholesaler authentication before using itself except when a new account is successfully created.
* The user authentication demands UserID and Password. The UserID and the Password should be checked in three ways.
  + First, The UserID and the Password should be existed and correct.
* If The UserID and the Password are not equal to what the user has registered, the user authentication cannot be provided.
  + Second, the User Type linked to the UserID should be "user".
* When the User Type is " Wholesaler ", user can be placed on “Wholesaler Home”.
  + Finally, UserID should be available.
* The Administrator can decide whether the UserID is available or suspended – Refer to the SRS of the Admin part.
* If user is rejected, user authentication is not provided for Wholesaler.
* The Wholesaler account should alive for so long as the duration decided by Admin.
* Only when the three checks are successfully completed, Wholesaler can be placed on respected page.
* The “Wholesaler Home” provides the some items described as below.

1. A trigger to logout
2. A trigger to update Account
3. A trigger to Change Password
4. A trigger to Search Product
5. A trigger to Publish Product for sale
6. A trigger to Update Product Information
7. A trigger to Delete Product
8. A trigger to Browse existing Market price

### Forgot Password Process

* When Wholesaler lost their Password, the recovery method should be provided by e-Farming system.

The recovery method is described as below.

* + First, Wholesaler enters their UserID for e-Farming System.
  + Next, E-Farming System demands the Answer which has been registered since when the Account was created.
  + Only when the Answer is correct, Wholesaler get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by e-Farming System.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The Wholesaler could get the user authentication using the new password.
  + Then, the Wholesaler had better change the new password manually.
* If the Answer is not correct, otherwise, the correct Answer is demanded for Wholesaler again.
  + In that case, Of course, Wholesaler couldn’t get the new password.

### Change Password Process

* When Wholesaler wants to change their Password, the measure should be provided by e-Farming System.
* Therefore, E-Farming System should provide the function which is available after getting the Wholesaler authentication.
* The function demands the current password and the new password.
  + Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
  + The current password and the new password are masked by using dummy characters.
  + The new password is demanded to enter twice to avoid a typing error.
* Only when the current password is correct, Wholesaler could change their Password.
* When the current password is changed into new password, E-Farming System compels Wholesaler authentication again.

### Update Account Process

* E-Farming System should provide the function which makes the account updated for Wholesaler.
* The information Wholesaler could update is described below.

1. Login information

2. User information

3. Security Question Information

* The Login information

The updatable items as described below.

1. First Name
2. Last Name
3. E-mail address
   * All items are compulsory demanded, but updating is optional.

* The User information

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address
   * All items are compulsory demanded, but updating is optional.

* The Security Question information

The updatable items as described below.

1. Selected Question
2. Answer
   * All items are compulsory demanded, but updating is optional.

#### Search Product

• Search conditions are described as below.

1. Product category

2. Price range

• As the result of searching Requirements, Wholesaler could see the list of products which are available for sale.

1. Product name

2. Price

3. Quantity

4. Photos

#### Buy Product

• To buy the product followings are the condition

1. Product category

2. Price range

3. Product Quantity

4. Product Name

**2.2.8 Payback Process**

• In payback process system following are the conditions

1. If somehow order is not fulfil.

2. If wholesaler is not satisfied with product.

**2.2.9 Cancel Order**

• Before paying Wholesaler can cancel the order in following condition

1. If the product does not fulfil the requirement.

2. If price goes out of his budget.

Browse existing product Price

• Wholesaler could see the information of existing product**s.**

#### Admin Module

**•** Administratorshould be responsible for following activities**,**

### Login Process

* E-Farming System always compels user authentication before using itself except when a new account is successfully created.
* The user authentication demands UserID and Password. The UserID and the Password should be checked in three ways.
  + First, The UserID and the Password should be existed and correct.
* If The UserID and the Password are not equal to what the admin has registered, the Admin authentication cannot be provided.
  + Second, the User Type linked to the UserID should be "Admin".
* When the User Type is "Admin", user can be placed on “Admin Home”.
  + Finally, UserID should be available.
* The Administrator can decide whether the UserID is available or suspended – Refer to t
* .0he SRS of the Admin part.
* If user is rejected, user authentication is not provided for system user.
* The Admin account should alive for so long as the duration decided by Admin.
* Only when the three checks are successfully completed, Admin can be placed on respected page.
* The “Admin Home” provides the some items described as below.

1. A trigger to logout
2. A trigger to update Account
3. A trigger to Change Password
4. A trigger to Search Product
5. A trigger to Publish Product for sale
6. A trigger to Update Product Information
7. A trigger to Delete Product
8. A trigger to Browse existing Market price

### Forgot Password Process

* When Admin lost their Password, the recovery method should be provided by e-Farming system.

The recovery method is described as below.

* + First, Admin enters their UserID for e-Farming System.
  + He will enter the E-mail id since when the Account was created.
  + Only when the E-mail Id is correct, Admin get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by e-Farming System.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The Admin could get the Admin authentication using the new password.
  + Then, the Admin had better change the new password manually.

### Change Password Process

* When Admin wants to change his Password, the measure should be provided by e-Farming System.
* Therefore, E-Farming System should provide the function which is available after getting the Admin authentication.
* The function demands the current password and the new password.
  + Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
  + The current password and the new password are masked by using dummy characters.
  + The new password is demanded to enter twice to avoid a typing error.
* Only when the current password is correct, Admin could change his Password.
* When the current password is changed into new password, E-Farming System compels user authentication again.

### Update Account Process

* E-Farming System should provide the function which makes the account updated for Admin.
* The information Admin could update is described below.

1. Login information
2. User information
3. Security Question Information

* The Login information

The updatable items as described below.

1. First Name
2. Last Name
3. E-mail address
   * All items are compulsory demanded, but updating is optional.

* The User information

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address
   * All items are compulsory demanded, but updating is optional.

* The Security Question information

The updatable items as described below.

1. Selected Question
2. Answer
   * All items are compulsory demanded, but updating is optional.

#### Record Generation

• Admin should able to see all the records from any users.

• Daily report of enrolment to admin.

• Monthly report of enrolment as per the states to admin.

#### Accounts Management

• Admin should able to manage all the accounts with following activities,

1. Enable accounts

2. Disable accounts

#### Message Acknowledgement Module

• In following conditions acknowledgement to be send

1. After completion of successful registration.
2. After every successful transaction (buy, sale).
3. Now the messages are being sent by using email but in future we can have mobile sms.

#### 2.5 Use Case Diagram

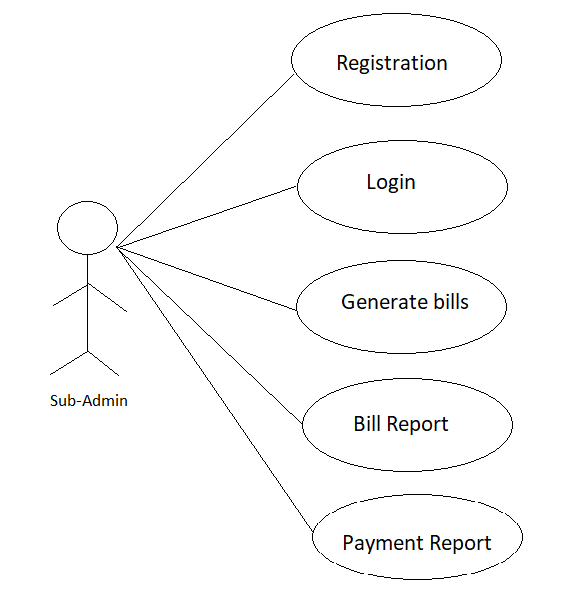
**Admin:**

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*Fig. Use case diagram for Admin*

1. In Admin use case diagram Admin is the Actor.
2. Admin can handle following use cases:
3. Login
4. Report Generation
5. Controls account

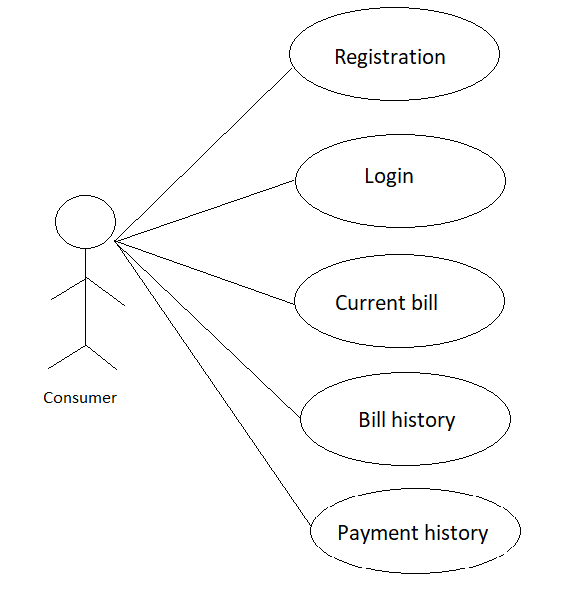
**Sub Admin:**

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*Fig. Use case diagram for Sub-Admin*

1. In Sub Admin use case diagram Sub Admin is the Actor.
2. Sub Admin can handle following use cases:
3. Register
4. Login
5. Generate bills
6. Bill reports
7. Payment report

**Consumer:**

****

*Fig. Use case diagram for Consumer*

1. In Consumer use case diagram Consumer is the Actor**.**
2. Consumer can handle following use cases:
3. Register
4. Login
5. Current bill
6. Bill history
7. Payment history