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ELECTRICITY CONSUMPTION REPORT

**Functional Requirement Document**

**CONTENTS**

[1. TICKET DETAILS 2](#_Toc21292)

[2. VERSION CONTROL 2](#_Toc29477)

[3. APPROVALS 2](#_Toc8001)

[4. ESTIMATION 2](#_Toc25224)

[5. INTRODUCTION 3](#_Toc16083)

[6. BUSINESS REQUIREMENT 3](#_Toc192)

[7. SCOPE 3](#_Toc6911)

[8. BUSINESS & SYSTEM RULES 4](#_Toc16098)

[9. ABBREVIATIONS & TERMS 4](#_Toc837)

[10. EXISTING SYSTEM 4](#_Toc20007)

[11. GRAPHICAL REPRESENTATION 4](#_Toc27855)

[12. PROPOSED SYSTEM 4](#_Toc31900)

[13. TEST DATA 11](#_Toc3290)

[14. ODUS 1](#_Toc21603)1

[15. REFERENCES OF THE USERS 12](#_Toc12139)

1. **TICKET DETAILS**

|  |  |
| --- | --- |
| **Ticket ID** | TT12565 |
| **Ticket description** | Operations point by pritam sir - Electricity consumption and other registers maintain in connect us add formulas to it so there is no need of excel work |
| **Created by** | Manali bhadirage |
| **Created on** | 25/05/2023 |
| **Priority** | high |

1. **VERSION CONTROL**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No** | **Version no** | **Version Date** | **User name** | **User department** |
| **1** | **1.0** | **19/08/2023** | **Pritam metha** | **Audit** |
|  |  |  |  |  |
|  |  |  |  |  |

1. **APPROVALS**

|  |  |  |
| --- | --- | --- |
| **Field** | **Name of the User** | **Approved date by the user** |
| **Actual User Name Actual User Department Organization Name** | Pritam metha  Audit  Csj |  |
| **Assigned BA** | Manali bhadirage |  |
| **Assigned Developer** |  |  |
| **Assigned Tester** |  |  |

1. **ESTIMATION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Department name** | **Estimated Time (In hr)** | **Scheduled Date (Starting date)** | **Estimated date** | **Actual delivery date** |
| **BA** |  |  |  |  |
| **Development** |  |  |  |  |
| **Testing** |  |  |  |  |
|  |  |  |  |  |

1. **INTRODUCTION**

In device metre reading details, users enters the details of daily consumption by each device at each branch. Furthermore, once data is added, it gets displayed in grid which user can further view and edit it. Through device metre reading details menu, we get to know consumption by each device at each branch on respective days.

1. **BUSINESS REQUIREMENT**

User should be able to export day wise consumption report of each device at each branch.

|  |  |  |  |
| --- | --- | --- | --- |
| **Requirement ID** | **Requirement Name** | **Short Description** | **Priority** |
| BR001 | Add | In add form, we have to ‘opening reading’ and consumption field.  Rename metre reading field as ‘current metre reading’. | High |
| BR002 | Edit | In edit form, we have to add ‘opening reading’ and consumption field.  Rename metre reading field as ‘current metre reading’. | High |
| BR003 | View | In view action, we have to add ‘opening reading’, consumption, created at & by, updated at & by fields.  Rename metre reading field as ‘current metre reading’. | Medium |
| BR004 | Filter | Provide filter option. Through filter, user should be able to selects dates and view reading report of each branch, each date and each device number. | High |
| BR005 | Export Report | User should be able to export filtered reading report. | High |

1. **SCOPE**

In this scope, we are going to consider readings for all devices and not just for electricity metre readings. User should be able to add the details of any device. User should be able to select the branch, device name, category and device ID as per mapping. When user adds the current metre reading, the metre reading of past date should be displayed. User should be able to edit metre readings. Once data is added, user should be able to filter data and get report which will display branch-wise electricity consumption for each date for each device. Also, through this report, user should be able to understand for the days the data was entered for the days where metre reading data wasn’t entered.

1. **BUSINESS & SYSTEM RULES**

* User should be registered in the system.
* User should be logged in.
* All forms should have on field validations. System should display on field errors in case of incorrect inputs.
* If user has not entered metre reading for many previous days, then when user adds metre reading on the current date at that time it should display the latest entered metre reading in ‘opening metre reading’ field.
* Once user edits the previous details, then all the rest details of its related dates should get updated.

1. **ABBREVIATIONS & TERMS**

NA

1. **EXISTING SYSTEM**

Through existing system, user is unable to filter electricity metre and export electricity consumption report of each day on each device for each branch.

1. **GRAPHICAL REPRESENTATION**

Edit current metre reading and update consumption (and opening metre reading of its next entry)

Save and display in grid & view action

Filter and display consumption report for each date - branch - device

Enter current metre reading and display consumption of the day

Add entry - mention branch, device, category, device id

Fig: Context Diagram of Device metre reading

1. **PROPOSED SYSTEM**

* Week off in Branch master

In masters -> general -> branch master, we have to add branch week off field in add, edit and view action.

|  |  |  |  |
| --- | --- | --- | --- |
| **FIELDS** | **INPUT TYPE** | **MANDATORY/ OPTIONAL** | **DESCRIPTION** |
| Branch Week Off | Drop-down | Mandatory | User will set the day on which this branch has week off. It will display week days Sunday to Saturday in the drop-down.  The day when week off is set against the branch, for that day in the entire month it will be displayed as OFF in the report of our device metre reading -> filter.  Validation: It will be single select. |

* Branch Site Off master

We have to create new menu as Branch site off master in Connect Us -> Report -> Branch operation report. When branch if officially off due to some external reasons apart from week off, those dates will be mentioned here.

The dates for which the official site off is set then in Connect Us -> Report -> Branch operation report -> Device metre reading -> filter report we have to display the entry as NA for those dates.

On main page, we have to display following fields:

* Add button
* Sr no.
* Edit action
* View action
* Branch
* Remark
* Created at and by
* Updated at and by

Once user clicks on add action, it will display following fields:

* Branch name
* Site off date
* Reason
* Save button
* Back button

|  |  |  |  |
| --- | --- | --- | --- |
| **FIELDS** | **INPUT TYPE** | **MANDATORY/ OPTIONAL** | **DESCRIPTION** |
| Branch | Drop-down | Mandatory | User will select the branch against which site off date is to be set.  Validation: It will display the active branches from branch master. |
| Site off date | Calender  picker | mandatory | User will select the date on which branch is officially closed.  Validation:- It should accept date as same as the week off day of the branch. Record for same branch and same date should be added only once. |
| Reason | Text | mandtory | User will specify the reason for site off.  Validation:- Max 100 characters should be accepted. It should accept english and marathi language. |
| Save | Click |  | Once user clicks on save button, then the site off for that date should be recorded. Whereas, the date on which site off is marked at the branch, for that date record in electricity filter report will be displayed as NA. |

* Device metre reading

Step 1. In Connect Us -> Report -> Branch operation report -> Device metre reading, once user clicks on **add** data, it will display following fields:

* Branch
* Device name
* Category
* Device ID
* Opening metre reading
* Current Metre reading
* Consumption
* Remark
* Save button
* Save & add more button
* Back button

|  |  |  |  |
| --- | --- | --- | --- |
| **FIELDS** | **INPUT TYPE** | **MANDATORY/ OPTIONAL** | **DESCRIPTION** |
| Branch | Drop-down | Mandatory | User will select the branch against which user is added this metre details.  Validation: It will display the active branches from branch master to super-admin login. For others, it displays the branch of the logged in person only by default. |
| Device name | Drop-down | Mandatory | User will select the device name to specify further that the units are being consumed by this selected device.  It displays the device name as per select branch from masters -> branch operation master -> device master.  Validation : It will be single select. |
| Category | Drop-down | Mandatory | It will display the mapped category with selected branch - device from masters -> branch operation master -> device master.  Validation : It will be single select. |
| Device id | Drop-down | Mandatory | It will display the mapped device ID as per selected branch - device - category from masters -> branch operation master -> device master.  Validation : It will be single select. |
| Opening metre reading | Text | Mandatory | It should display metre reading yesterday’s metre reading or the latest entered metre reading.  Case 1) If user has entered metre reading as 400 units on 01/08/2023, then when user enters another entry on 02/08/2023 it will display 400 units in opening metre reading field.  Case 2) If user has entered readings 400 units on 01/08/2023 and has not entered details for 3 days then when user enters details on 05/082023 then it should display recently entered opening metre value that is 400 units.  If user has edited and updated any previous dates opening metre reading, then it will display the updated one.  Validation:- It will be read only. |
| Current metre reading | Text | Mandatory | User will enter the today’s metre reading here in units.  Validation: It should accept only numbers. It should accept only one decimal point. It should accept maximum 4 digits after decimal point. |
| Consumption | Text | Mandatory | Once units are mentioned in current metre reading then it will auto-calculate and display value in consumption.  Consumption will display the units that are being consumed till the current date from recently entered units date.  Consumption = opening reading - current metre reading.  If opening metre reading of previous date is updated by the user, then consumption of the next date should get updated too.  Validation: It will be read only. Vlaue will get changed and displayed as and when user enters values in current metre reading field. |
| Remark | Text | Optional | User will enter the additional comments / notes if any.  Validation: It should accept maximum 100 characters / digits. It should accept Marathi and English language. |
| Save | Click |  | Once user enters mandatory fields and click on save, then successful message will be displayed and user will be directed to grid page where recently added entry will be displayed on top.  Only one entry can be saved for the same device - category - device id for the same day. Entry for same device shouldn’t be accepted on same date. It displays error message as ‘record already exist for same date’. |

Step 2. Once entry is saved, it will be displayed and saved at top of the **grid**. In grid, it will display following columns:

* Edit action
* View action
* History action
* Date and time
* Branch
* Device
* Category
* Device id
* Opening metre reading
* Current metre reading
* Consumption
* Remark
* Created at and by
* Updated at and by

Step 3. Edit action will be provided based on authority. Also, to edit back dated entries another special authority should be given. Once user clicks on **edit** of any of the entry, it will display following fields:

* Branch
* Device name
* Category
* Device ID
* Opening metre reading
* Current Metre reading
* Consumption
* Remark
* Save button
* Save & add more button
* Back button

|  |  |
| --- | --- |
| **FIELD NAME** | **EDITABLE?** |
| Branch | No |
| Device name | No |
| Catgeory | No |
| Device ID | Yes |
| Opening metre reading | No |
| Current metre reading | Yes |
| Consumption | No |
| Remark | Yes |

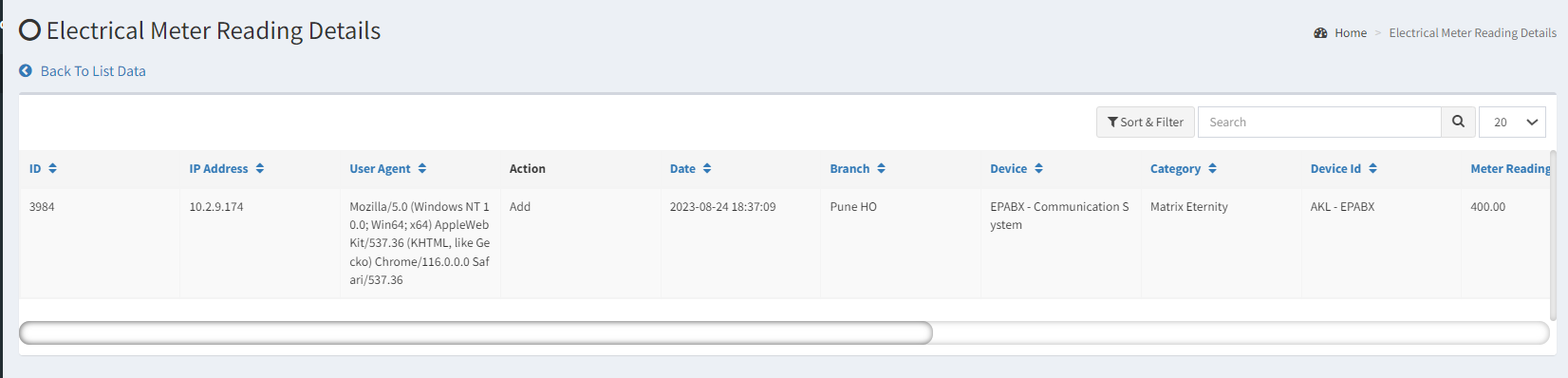
When user edits metre reading then it should update consumption as well and this updated metre reading should be displayed in ‘opening metre reading’ field of next date entry. Once details are updated and saved then it should be displayed in grid and view action.

Step 4. Once user clicks on **view** action, it will display following fields:

* Branch
* Device name
* Category
* Device ID
* Opening metre reading
* Current Metre reading
* Consumption
* Remark
* Created at and by
* Updated at and by

Step 5. In **history** action, it should display first row when data was added and further it should display the rows of update as and when any field was edited. Also, it should highlight the field which was edited. It will have following columns:

* ID
* IP address
* User agent
* Action
* Date
* Branch
* Device
* Category
* Device id
* Opening metre reading
* Current metre reading
* Consumption
* Remark
* Created at & by
* Updated at & by



Step 6. Further once data is added, then user should be able to **filter** data and export it. It should have following fields:

* From date
* To date
* Device
* Branch
* Filter button
* Reset button
* Download button

|  |  |  |  |
| --- | --- | --- | --- |
| **FIELDS** | **INPUT TYPE** | **MANDATORY/ OPTIONAL** | **DESCRIPTION** |
| From Date | Calendar picker | Mandatory | User will enter the date from which user can search the data from grid.  Validation: It shouldn’t accept future dates. |
| To Date | Calendar picker | Mandatory | User will enter the date till which user can search the data from grid.  Validation: It shouldn’t accept future dates. It shouldn’t accept dates before ‘from date’. |
| Device | Drop-down | Mandatory | User can search the records as per device names. Through this user will get to know the records for each date for selected device.  Validation: It displays active device name from masters -> branch operation master -> device master. |
| Branch | Drop-down | Optional | User will select the branch so that it will display the total readings of each device at selected branch for each date. |
| Filter | Click |  | Once user selects mandatory fields and clicks on filter, it will display consumption report of the selected device type. It will have following columns:   * Sr. No. * Branch * Created by * Device id * Calendar dates of that month * Reporting days * Actual report days * Skip day * Mistake days * Total consumption * Accuracy * Average * Final accuracy * Final average   Each value in the report is explained in detail in step 7. |
| Download | Click |  | Download button will be visible after user clicks on filter button and after data is displayed.  Once user clicks on download button, excel file will be downloaded ad it will display the data as in grid of the filtered report. Downloaded file will have following columns:   * Sr. No. * Branch * Created by * Device id * Calendar dates of that month * Reporting days * Actual report days * Skip day * Mistake days * Total consumption * Accuracy * Average * Final accuracy * Final average |

Step 7. The details in the report will be displayed as it was added and edited. In report we display following values:

|  |  |
| --- | --- |
| **VALUE** | **DESCRIPTION** |
| NR | Not Reported.  It will be displayed for the date when entry was not added in device metre report. |
| Off | As per calender days, it will display the date on which branch has weekly off as per branch master. |
| WD | It will display the date on which wrong data was entered by the user. For instance, if consumption goes in negative then in report it should display WD. |
| NA | Not applicable.  When branch is officially closed that for official site off date then it should display NA for that date.  This should be displayed from our master. |
| Reporting days | Total present days in the month are report days where Off and NA are excluded. |
| Actual report days | Reporting days - NR = actual report days |
| Total consumption | It will display the sum of consumption of all dates against that branch - device id. |
| Accuracy | Phase 2 (Requirement not clear and shared by user / end user) |
| Average | Average = actual report / reporting days \* 100 |
| Final accuracy | Phase 2 (Requirement not clear and shared by user / end user) |
| Final average | Phase 2 (Requirement not clear and shared by user / end user) |

1. **TEST DATA & SCENARIOS**

Entry report :



The below Consumption reading report is the expected report:



1. **ODUS ( Open Discussed Unhanded scenarios )**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Topic** | **Priority**  **(High / medium / low)** | **Remark** | **Status**  **(Open/**  **Closed)** |
| 1 | 24/08/2023: If user has not entered any entries for middle of the days then do have to give provision to enter readings for back dated dates as well for which entry was not done? | Medium | Gaurav Shah: No. User cannot enter new readings for back dates. User can only edit the back dated already available entries. User can only add new entry for the current date. | Closed |
| 2 | 24/08/2023: can user add multiple entries for the same device -category -device id on the same date? | Medium | Gaurav shaha: No. Only one entry is allowed for one device -category - device id on one day. Whereas, user can enter multiple entries for different device name / types for the same date for not against the same device id. | Closed |
| 3 | 14/08/2023: Formula for accuracy and average |  | Average = actual report / reporting days \* 100  Take accuracy, final average and final accuracy for phase 2. | Open |

1. **REFERENCES OF THE USERS**

|  |  |  |  |
| --- | --- | --- | --- |
| **User** | **Name** | **Mail** | **Contact number** |
| **Actual user** | Pritam metha | is@csjewellers.com |  |
| **Ticket created by (if any)** | Manali bhadirage | Manali.bhadirage@techneai.com |  |
| **Assigned business analyst** | Manali bhadirage |  |  |
| **Assigned developer** | Yogita jagtap |  |  |
| **Assigned tester** | Vaishnavi khandwe |  |  |