

**Power Consumption Measuring and Controlling Tool Ver.01**

**Software Requirement Specification (SRS)**

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**Developed for:**

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| Use Case Name: | Generate Users. | |
| Actors: | Administrator, System. | |
| Description: | Allow administrator to specify and generate particular users for the system. | |
| Trigger: | When administrator clicks the generate users button | |
| Preconditions: | Administrator has the right to generate users, customer who purchased a product is waiting to be registered as a user in the system. | |
| Post conditions: | Administrator has successfully generated users. | |
| Normal scenarios: | Administrator: | Clicks ‘Generate user’ button. |
| System: | Displays a data entry screen to the administrator with fields to fill up necessary information. |
| Administrator: | Fill up the fields with required information and click on generate button. |
| System: | * Validates all the information entered by the administrator. * Displays a successful message and sends an activation code to the user if there are no errors. |
| Administrator: | Has successfully generated user. |
| Alternative scenarios: | Administrator: | Clicks ‘Generate user’ button. |
| System: | Displays a data entry screen to the administrator with fields to fill up necessary information. |
| Administrator: | Fill up the fields with required information and click on generate button. |
| System: | Validates all the information entered by the administrator and displays an error message in case of unsuccessful validation. |
| Administrator: | Corrects the error and click on the ‘Generate user’ button. |
| System: | If no error then the system displays successful message and sends an activation code to the user or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | Define user customized packages. | |
| Business rule | 1. Administrator must have the authority to generate users, 2. User must be valid. | |

Use Case 01

Use Case 02

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| --- | --- | --- |
| Use Case Name: | Activate Users. | |
| Actors: | Administrator, System. | |
| Description: | When a user is newly added or the activation of an existing user fails, administrator activates that user. | |
| Trigger: | When administrator clicks the ‘Activation’ link. | |
| Preconditions: | Administrator has the right to activate user, A user whose newly added or whose activation is failed is waiting for activation. | |
| Post conditions: | The user is successfully activated. | |
| Normal scenarios: | Administrator: | Clicks ‘Activation’ link. |
| System: | Display details of the user who is waiting to be activated. |
| Administrator: | Reviews the detail and check the validity of the user by clicking ‘Validity’ button. |
| System: | Sends a message indicating the user is valid. |
| Administrator: | Click the ‘Activate’ button and successfully activate the user |
| System: | Send a message to the user, indicating that he is activated. |
| Alternative scenarios: | Administrator: | Clicks ‘Activation’ link. |
| System: | Display details of users who are waiting to be activated. |
| Administrator: | Reviews the detail and check the validity of user by clicking ‘Validity’ button. |
| System: | Sends a message indicating the user is invalid if there is any error condition in validity. |
| Administrator: | Click the ‘Reject’ button. |
| System: | Refuse to activate the user and send him a message that he is deactivated. |
| Extensions: | Sign up. | |
| Include: | - | |
| Business rules: | 1. Administrator must have the authority to activate or deactivate the user. | |

Use Case 03

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| Use Case Name: | Delete Users. | |
| Actors: | Administrator, System. | |
| Description: | Allow administrator to delete a particular user from the system. | |
| Trigger: | When administrator clicks ‘Delete user’ link. | |
| Preconditions: | There is a particular user who is activated by the system and can enter the system using his user name and password. | |
| Post conditions: | That particular user is successfully deleted from the system. | |
| Normal scenarios: | Administrator: | Clicks ‘Delete user’ link. |
| System: | Displays a data entry screen to the administrator with fields to fill up the information the user to be deleted. |
| Administrator: | Fill up the fields with required information and click on the ‘Delete’ button |
| System: | Validates the information entered by the administrator and displays a ‘successfully deleted’ message if there is no error. |
| Administrator: | Has successfully deleted the particular user. |
| Alternative scenarios: | Administrator: | Clicks ‘Delete user’ button. |
| System: | Displays a data entry screen to the administrator with fields to fill up the information the user to be deleted. |
| Administrator: | Fill up the fields with required information and click on the ‘Delete’ button |
| System: | Validates the information entered by the administrator and displays an error message in case of unsuccessful validation. |
| Administrator: | Corrects the information and clicks on the ‘Delete user’ button. |
| System: | If no error then the system displays ‘successfully deleted’ message or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Administrator must have the authority to delete a particular user. 2. Before deletion, user must be validated whether this is the correct user who supposed | |

Use Case 04

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| Use Case Name: | Sign In. | |
| Actors: | Administrator, Customer, System. | |
| Description: | Allows administrator and the customers sign in to the system. | |
| Trigger: | When administrator or the customer click on the ‘Sign In’ button. | |
| Preconditions: | Administrator or the customer waiting to be signed in | |
| Post conditions: | Administrator or the customer successfully signed in. | |
| Normal scenarios: | Administrator/Customer: | Click on the sign in button. |
| System: | Displays a data entry screen to the administrator/customer with fields to fill up the required sign in information. |
| Administrator/Customer: | Fill up the fields with required information and click on the ‘Sign In’ button. |
| System: | Validates the information entered by the administrator/Customer and displays theadministrator’s/customer’s profile if there is no error. |
| Administrator/Customer: | Successfully signed in to their account. |
| Alternative scenarios: | Administrator/Customer: | Click on the sign in button. |
| System: | Displays a data entry screen to the administrator/customer with fields to fill up the required sign in information. |
| Administrator/Customer: | Fill up the fields with required information and click on the ‘Sign In’ button. |
| System: | Validates the information entered by the administrator/Customer and displays an error message in case of unsuccessful validation. |
| Administrator/Customer: | Corrects the information and clicks on the ‘Sign In’ button. |
| System: | If no error then the system displays the administrator’s/customer’s profile or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. System must provide facilities to sign in both administrator and the customers. 2. System must provide separate account for each administrator and the customers. 3. Customer should be activated by the administrator before owning an account. | |

Use Case 05

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| Use Case Name: | Confirm user upgrade requests. | |
| Actors: | Administrator, System. | |
| Description: | Allows administrator to confirm user upgrade requests. | |
| Trigger: | When administrator clicks on the ‘upgrade requests’ link. | |
| Preconditions: | Upgrade requests from the customers are waiting to be confirmed. | |
| Post conditions: | Upgrade requests are successfully confirmed. | |
| Normal scenarios: | Administrator: | Clicks on the ‘Upgrade requests’ link. |
| System: | Displays a screen with a list of upgrade requests made by the customers. |
| Administrator: | Clicks on the link of a particular request. |
| System: | Displays a screen with the details of that particular request. |
| Administrator: | Reviews the details and decides the upgrade request must be confirmed and click on the ‘Confirm’ button. |
| System: | Successfully confirms the user upgrade request and send user a message indicating his upgrade request is confirmed. |
| Alternative scenarios: | Administrator: | Clicks on the ‘Upgrade requests’ link. |
| System: | Displays a screen with a list of upgrade requests made by the customers. |
| Administrator: | Clicks on the link of a particular request. |
| System: | Displays a screen with the details of that particular request. |
| Administrator: | Reviews the details and decides the upgrade request must be rejected in case of any unsuitability and click on the ‘Reject’ button. |
| System: | Rejects the upgrade request and sends user a message indicating his upgrade request is rejected. |
| Extensions: | Upgrade Packages | |
| Include: | - | |
| Business rules: | 1. All the upgrade requests must be directed to the administrator. 2. System must display all the detail regarding the upgrade request, to the administrator. 3. Administrator must have the authority confirm or reject the upgrade requests. | |

Use Case 06

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| Use Case Name: | Generate Reports. | |
| Actors: | Administrator, Customer, System. | |
| Description: | Allows administrator and the customer to generate reports on a particular event. | |
| Trigger: | When customer or administrator clicks on the ‘Reports’ button. | |
| Preconditions: | Customer and the administrator waiting to generate reports. | |
| Post conditions: | Reports are successfully generated. | |
| Normal scenarios: | Administrator/ Customer: | Click on the report button. |
| System: | Displays a screen with the options to be selected, which are required for the report generation. |
| Administrator/ Customer: | Select the required options which must be included in the report and clicks on the ‘Generate report’ button. |
| System: | Check the availability of required information and successfully generates and displays the report to the administrator/customer. |
| Administrator/ Customer: | Review the report successfully. |
| Alternative scenarios: | Administrator/ Customer: | Click on the report button. |
| System: | Displays a screen with the options to be selected, which are required for the generation of reports. |
| Administrator/ Customer: | Select the required options which must be included in the report and clicks on the ‘Generate report’ button. |
| System: | Check the availability of required information and displays an error message in any case of failures. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Customer and the administrator must have the authority to generate reports. 2. System must provide facility to select the required options for the generation of report. | |

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| Use Case Name: | Sell Package And Products. | |
| Actors: | Administrator, System. | |
| Description: | Allow administrator to make available the packages and products to be sold to the customer. | |
| Trigger: | When administrator clicks on the ‘Sales’ button. | |
| Preconditions: | Products and packages are available to be sold and customers are waiting to purchase. | |
| Post conditions: | Products and packages are included to the system and sold successfully. | |
| Normal scenarios: | Administrator: | Click on the Sales button. |
| System: | Displays a screen with the fields to be filled with the details of products and packages which are available for sale. |
| Administrator: | Fill up the fields with the required information of the item to be sold and clicks ‘Add New item’ button. |
| System: | Validates all the information entered by the administrator and displays a successfully added message if there is no error. |
| Administrator: | Successfully added products and packages to be sold and waiting for a customer to purchase. |
| Alternative scenarios: | Administrator: | Click on the Sales button. |
| System: | Displays a screen with the fields to be filled with the details of products and packages which are available for sale. |
| Administrator: | Fill up the fields with the required information of the item to be sold and clicks ‘Add New item’ button. |
| System: | Validates all the information entered by the administrator and displays an error message in case of unsuccessful validation. |
| Administrator: | Corrects the error and click on the ‘AddNew item’ button. |
| System: | If no error then the system displays successfully added message or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Separate options must be available for adding new packages and products. 2. Administrator must be able to add items for the online inventory. 3. Customer must be able to select products and packages. | |

Use Case 07

Use Case 08

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| Use Case Name: | Purchase Package And Products. | |
| Actors: | Customer, System, Administrator. | |
| Description: | Allow customers to purchase products and packages. | |
| Trigger: | When customer click on the ‘purchase’ link. | |
| Preconditions: | Products and packages are available to be sold and customers are waiting to purchase. | |
| Post conditions: | Products and packages are purchased successfully. | |
| Normal scenarios: | Customer: | Click on the purchase link. |
| System: | Displays a screen with a selection box to select whether to purchase a package or only a product. |
| Customer: | Selects the required item type (a product only or a package) and clicks on ‘Ok’ button. |
| System: | According to the item type selected by the customer, System displays a screen with options to be selected which represents the required qualities of the item to be purchased. |
| Customer: | Selects the qualities of the product or the package and click on the ‘Price’ button. |
| System: | Displays a screen which point out the price of the item. |
| Customer: | Clicks on the purchase button if there are no objections regarding purchase. |
| System: | Send a message to the administrator about the purchase and requesting to confirm the purchase. |
| Administrator: | Check for the validity of the purchase. |
| System: | Validates the purchase and send a ‘valid purchase’ message to the administrator. |
| Administrator: | Sends ‘Confirm purchase’ message to the system. |
| System: | Sends ‘successfully purchased’ message and a ‘Payment methods’ message to the customer. |
| Customer: | Clicks ‘Accepted’ button to agreeing to pay according to the payment method and successfully purchased the item. |
| Alternative scenarios: | **Alternative scenario 01** | |
| Customer: | Click on the purchase link. |
| System: | Displays a screen with a selection box to select whether to purchase a package or only a product. |
| Customer: | Selects the required item type (a product only or a package) and clicks on ‘Ok’ button. |
| System: | According to the item type selected by the customer, System displays a screen with options to be selected which represents the required qualities of the item to be purchased. |

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|  | Customer: | Selects the qualities of the product or the package and click on the ‘Price’ button. |
| System: | Displays a screen which point out the price of the item. |
| Customer: | Clicks on the cancel button if the price won’t suitable and don’t like to purchase. |
| System: | Displays ‘Purchase cancelled’ message. |
| **Alternative scenario 02** | |
| Customer: | Click on the purchase link. |
| System: | Displays a screen with a selection box to select whether to purchase a package or only a product. |
| Customer: | Selects the required item type (a product only or a package) and clicks on ‘Ok’ button. |
| System: | According to the item type selected by the customer, System displays a screen with options to be selected which represents the required qualities of the item to be purchased. |
| Customer: | Selects the qualities of the product or the package and click on the ‘Price’ button. |
| System: | Displays a screen which point out the price of the item. |
| Customer: | Clicks on the purchase button if there are no objections regarding purchase. |
| System: | Send a message to the administrator about the purchase and requesting to confirm the purchase. |
| Administrator: | Check for the validity of the purchase. |
| System: | Validates the purchase and send an ‘Invalid purchase’ message to the administrator in case of any error. |
| Administrator: | Sends ‘Purchase rejected’ message to the customer. |
| Extensions: | - | |
| Include: | Upgrade Packages. | |
| Business rules: | 1. Customer must be given the facilities to select the required product or packages. 2. Customer must be given the facility to choose an appropriate payment method. 3. Price must be clearly indicated to the customer. 4. Purchase must be validated properly 5. Administrator must have the authority to confirm or reject the purchase. | |

Use Case 09

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| --- | --- | --- |
| Use Case Name: | Define electricity bill calculating methods. | |
| Actors: | Administrator, System. | |
| Description: | Allows administrator to define electricity bill calculating methods. | |
| Trigger: | When administrator clicks on the ‘Define bill calculating methods’ link. | |
| Preconditions: | Administrator waiting to define a bill calculating method. | |
| Post conditions: | The method is defined successfully. | |
| Normal scenarios: | Administrator: | Clicks on the ‘Define bill calculating methods’ link. |
| System: | Displays a screen containing fields to provide details regarding the method. |
| Administrator: | Fill up the fields with the information required to specify the bill calculation method and click ok button. |
| System: | Validates the specifications and sends a successful message if there are no errors. |
| Administrator: | Successfully defines bill calculating methods. |
| Alternative scenarios: | Administrator: | Clicks on the ‘Define bill calculating methods’ link. |
| System: | Displays a screen containing fields to provide details regarding the method. |
| Administrator: | Fill up the fields with the information required to specify the bill calculation method and click ok button. |
| System: | Validates the specifications and sends an error message in case of unsuccessful validation. |
| Administrator: | Corrects the error and click on the ok button. |
| System: | If no error then the system displays successful message or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Administrator must have the authority to define electricity bill calculating methods. | |

Use Case 10

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| --- | --- | --- |
| Use Case Name: | Define user customized packages. | |
| Actors: | Administrator, system, customer. | |
| Description: | Allows administrator to customize a package according to a particular user request. | |
| Trigger: | When customer clicks on the ‘Customize package’ button. | |
| Preconditions: | A user is waiting to customize his current package. | |
| Post conditions: | Particular user package is successfully customized. | |
| Normal scenarios: | Customer: | Clicks on the customize package button. |
| System: | Displays a data entry screen to the customer with fields to fill up necessary customizing information. |
| Customer: | Fill up the fields and clicks on the Ok button. |
| System: | Sends a message to the administrator informing the customer’s request. |
| Administrator: | Reviews the message and click on the ‘Validity’ button. |
| System: | Checks the validity of the customization request of the user and sends a ‘Valid’ message to the administrator if there are no error conditions. |
| Administrator: | Performs the customization required by the user and clicks Ok button. |
| System: | Displays a ‘Successfully customized’ message. |
| Customer: | Has successfully customized his package. |
| Alternative scenarios: | Customer: | Clicks on the customize package button. |
| System: | Displays a data entry screen to the customer with fields to fill up necessary customizing information. |
| Customer: | Fill up the fields and clicks on the Ok button. |
| System: | Sends a message to the administrator informing the customer’s request. |
| Administrator: | Reviews the message and click on the ‘Validity’ button. |
| System: | Checks the validity of the customization request of the user and sends an ‘Invalid’ message to the administrator if there are any invalid conditions. |
| Administrator: | Clicks on the ‘Reject’ button. |
| System: | Displays ‘Customization rejected’ message to the customer. |
| Extensions: | - | |
| Include: | Generate users | |
| Business rules: | 1. Customer must be able to request to customize their package. 2. Administrator must have the authority to accept and perform or reject the customization requirement. 3. Appropriate customization requests must only be accepted. | |

Use Case 11

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| --- | --- | --- |
| Use Case Name: | Define general packages. | |
| Actors: | Administrator, System. | |
| Description: | Allows administrator to define general packages such as home package, Middle scale business package, Large scale business package. | |
| Trigger: | When administrator clicks on the ‘Define packages’ button. | |
| Preconditions: | Different types of general packages are available to be defined. | |
| Post conditions: | General packages are successfully defined. | |
| Normal scenarios: | Administrator: | Clicks on the ‘Define packages’ button. |
| System: | Displays a data entry screen to the administrator with fields to fill up the package information. |
| Administrator: | Fill up the fields with required information and clicks on Ok button. |
| System: | Validates all the information entered by the administrator and displays a ‘successfully defined’ message if there are no error conditions. |
| Administrator: | Package successfully defined. |
| Alternative scenarios: | Administrator: | Clicks on the ‘Define packages’ button. |
| System: | Displays a data entry screen to the administrator with fields to fill up the package information. |
| Administrator: | Fill up the fields with required information and clicks on Ok button. |
| System: | Validates all the information entered by the administrator and displays an error message in case of any unsuccessful validation. |
| Administrator: | Corrects the error and click on the Ok button. |
| System: | If no error then the system displays successful message and or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Administrator must have the authority to define user packages. | |

Use Case 12

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| --- | --- | --- |
| Use Case Name: | Define suggestions and alternative devices. | |
| Actors: | Administrator, System. | |
| Description: | Allows administrator to provide suggestions to control the over consumption of electricity of an equipment or provide suggestions about alternative devices. | |
| Trigger: | When administrator clicks on the ‘Suggestions and alternatives’ button. | |
| Preconditions: | A particular equipment has an over consumption of electricity and administrator wants to provide suggestions for it. | |
| Post conditions: | Suggestions and alternatives are successfully defined. | |
| Normal scenarios: | Administrator: | Clicks on the ‘Suggestions and alternatives’ button. |
| System: | Displays a data entry screen to the administrator with fields to fill up with the suggestions and alternatives. |
| Administrator: | Fill up the fields with suggestions and alternatives and clicks on ‘Submit’ button. |
| System: | Validates the suggestions and alternatives and sends Customer ‘Suggestion for over consumption’ message if there are no errors. |
| Customer: | Reviews the Message and perform appropriate action |
| Alternative scenarios: | Administrator: | Clicks on the ‘Suggestions and alternatives’ button. |
| System: | Displays a data entry screen to the administrator with fields to fill up with the suggestions and alternatives. |
| Administrator: | Fill up the fields with suggestions and alternatives and clicks on ‘Submit’ button. |
| System: | Validates the suggestions and alternatives and displays an error message in case of any unsuccessful validation. |
| Administrator: | Corrects the error and click on the submit button. |
| System: | If no error then the system sends to the customer a ‘Suggestion for over consumption’ message or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Administrator must be able to check the electricity consumption of a particular device. 2. Administrator must be able to provide suggestions or alternatives to the user. | |

Use Case 13

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| --- | --- | --- |
| Use Case Name: | Signup. | |
| Actors: | Customer, System, Administrator. | |
| Description: | Allows customers who purchased devices, to register for the system. | |
| Trigger: | When customer clicks on ‘Signup’ button. | |
| Preconditions: | Customer is waiting to be signed up and has an activation code provided by the administrator. | |
| Post conditions: | Customer successfully signed up. | |
| Normal scenarios: | Customer: | Clicks on ‘Signup’ button. |
| System: | Displays a data entry screen to the customer with fields to fill up with the user information including activation code. |
| Customer: | Fill up the fields with necessary information and clicks on ‘Sign up’ button. |
| System: | Validates all the information entered by the customer specially validates the activation code and displays a ‘successfully signed up’ message if there are no errors. |
| Customer: | Successfully signed up as a user of the system. |
| Alternative scenarios: | Customer: | Clicks on ‘Signup’ button. |
| System: | Displays a data entry screen to the customer with fields to fill up with the user information including activation code. |
| Customer: | Fill up the fields with necessary information and clicks on ‘Sign up’ button. |
| System: | Validates all the information entered by the customer specially validates the activation code and displays an error message in case of any unsuccessful validation. |
| Customer: | Connects with the administrator through hotline and ask him to activate the signup. |
| Administrator: | Performs the ‘Activate user’ use case. And successfully activates the signing up of the customer. |
| Customer: | Successfully signed up. |
| Extensions: | Sign up. | |
| Include: | - | |
| Business rules: | 1. Customer must be provided the facilities to sign up for the system. 2. If any errors occurred, administrator must be able to connect through Hotmail. 3. Customer details must be validated. | |

Use Case 14

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| --- | --- | --- |
| Use Case Name: | Add Place. | |
| Actors: | Customer, System. | |
| Description: | Allows user to add places such as Home, Workshop, Office where the console devices to be fixed. | |
| Trigger: | When user clicks ‘Add place’ button. | |
| Preconditions: | User waiting to add places to the system. | |
| Post conditions: | User successfully added the places to the system. | |
| Normal scenarios: | Customer: | Clicks on the ‘Add place’ button. |
| System: | Displays a data entry screen to the customer with fields to fill up with the places to be added to the system. |
| Customer: | Fills up the fields and clicks on the ok button. |
| System: | Validates the information entered by the customer and displays a ‘place successfully added’ message if there are no errors. |
| Customer: | Has successfully added the place. |
| Alternative scenarios: | Customer: | Clicks on the ‘Add place’ button. |
| System: | Displays a data entry screen to the customer with fields to fill up with the places to be added to the system. |
| Customer: | Fills up the fields and clicks on the ok button. |
| System: | Validates the information entered by the customer and displays an error message in any case of unsuccessful validation. |
| Customer: | Corrects the information and click Ok button. |
| System: | If no error then the system displays ‘place successfully added’ message or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Customer must be able to add different places where the console device could be located. | |

Use Case 15

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| --- | --- | --- |
| Use Case Name: | Add Console Device. | |
| Actors: | Customer, System. | |
| Description: | Allows customer to register the main device in to the system. | |
| Trigger: | When customer clicks on ‘Add console device’ button. | |
| Preconditions: | User purchased and fixed the console(main) device and waiting to register it in the system. | |
| Post conditions: | Console device is successfully registered. | |
| Normal scenarios: | Customer: | Clicks on the ‘Add console device’ button. |
| System: | Displays a data entry screen to the customer with fields to fill up about the console device to be added to the system. |
| Customer: | Fills up the fields and clicks on the ok button. |
| System: | Validates the information entered by the customer and displays a ‘Console device successfully added’ message if there are no errors. |
| Customer: | Successfully added console device to the system. |
| Alternative scenarios: | Customer: | Clicks on the ‘Add console device’ button. |
| System: | Displays a data entry screen to the customer with fields to fill up about the console device to be added to the system. |
| Customer: | Fills up the fields and clicks on the ok button. |
| System: | Validates the information entered by the customer and displays an error message in case of any un successful validation. |
| Customer: | Corrects the information and click Ok button. |
| System: | If no error then the system displays a ‘Console device successfully added’ message or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Customer must be able to register the console device to the system. | |

Use Case 16

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| --- | --- | --- |
| Use Case Name: | Add Sub Device. | |
| Actors: | Customer, System. | |
| Description: | Allow customer to register the sub devices under the main device | |
| Trigger: | When customer clicks on the ‘Add sub device’ button. | |
| Preconditions: | Customer waiting to register the sub devices to the system under the main device. | |
| Post conditions: | Sub device successfully registered under the main device | |
| Normal scenarios: | Customer: | Clicks on the ‘Add sub device’ button. |
| System: | Displays a data entry screen to the customer with fields to fill up about the sub device to be added to the system. |
| Customer: | Fills up the fields and clicks on the ok button. |
| System: | Validates the information entered by the customer and displays a ‘Sub device successfully added’ message if there are no errors. |
| Customer: | Successfully added sub device to the system. |
| Alternative scenarios: | Customer: | Clicks on the ‘Add sub device’ button. |
| System: | Displays a data entry screen to the customer with fields to fill up about the sub device to be added to the system. |
| Customer: | Fills up the fields and clicks on the ok button. |
| System: | Validates the information entered by the customer and displays an error message in case of any un successful validation. |
| Customer: | Corrects the information and click Ok button. |
| System: | If no error then the system display a ‘sub device successfully added’ message or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Customer must be able to register the sub device to the system under the console device. | |

Use Case 17

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| --- | --- | --- |
| Use Case Name: | Control Device. | |
| Actors: | Customer, System. | |
| Description: | Allows customer to control the main and sub devices. | |
| Trigger: | When customer clicks on ‘Control’ button. | |
| Preconditions: | Main and sub devices are added to the system and waiting for control. | |
| Post conditions: | Main and sub devices are successfully controlled. | |
| Normal scenarios: | Customer: | Clicks on the ‘Control’ button. |
| System: | Displays a screen to the customer with the list of links of main and sub devices. |
| Customer: | Clicks on the link of the device to be controlled. |
| System: | Displays a data entry screen to the customer with the fields to fill up about the control of the device. |
| Customer: | Fill up the fields with required data and clicks on Ok button. |
| System: | Validates the information entered by the customer and displays an ‘Operation performed successfully’ message if there are no errors. |
| Customer: | Successfully controlled the device. |
| Alternative scenarios: | Customer: | Clicks on the ‘Control’ button. |
| System: | Displays a screen to the customer with the list of links of main and sub devices. |
| Customer: | Clicks on the link of the device to be controlled. |
| System: | Displays a data entry screen to the customer with the fields to fill up about the control of the device. |
| Customer: | Fill up the fields with required data and clicks on Ok button. |
| System: | Validates the information entered by the customer and displays an error message in case of any unsuccessful validation. |
| Customer: | Corrects the error and click Ok button. |
| System: | If no error then the system display a success message or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Customer must be allowed to control the main and sub devices added by them. | |

Use Case 18

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| --- | --- | --- |
| Use Case Name: | Upgrade Packages. | |
| Actors: | Customer, System. | |
| Description: | Allow customers to request administrator for upgrading their packages, such as upgrading from home version to medium scale business version. | |
| Trigger: | When customer clicks on ‘Upgrade’ button. | |
| Preconditions: | Customers are waiting to upgrade their package. | |
| Post conditions: | Packages are successfully upgraded. | |
| Normal scenarios: | Customer: | Clicks on the ‘Upgrade’ button. |
| System: | Displays a data entry screen to the customer with the fields to fill up about the upgrade. |
| Customer: | Fill up the fields with required data and clicks on Ok button. |
| System: | Validates the information entered by the customer and displays an ‘Upgrade request send’ message and send the upgrade request to the administrator to confirm, if there are no errors. |
| Customer: | Successfully requested for upgrade. |
| Alternative scenarios: | Customer: | Clicks on the ‘Upgrade’ button. |
| System: | Displays a data entry screen to the customer with the fields to fill up about the upgrade. |
| Customer: | Fill up the fields with required data and clicks on Ok button. |
| System: | Validates the information entered by the customer and displays an error message in case of any unsuccessful validation. |
| Customer: | Corrects the error and click Ok button. |
| System: | If no error then the system displays an ‘Upgrade request send’ message and send the upgrade request to the administrator to confirm, or else the process is repeated till the administrator corrects the error. |
| Extensions: | Confirm user upgrade requests. | |
| Include: | Purchase product &packages. | |
| Business rules: | 1. User must be able to send package upgrade requests. 2. Administrator must have the authority to confirm or reject the upgrade request. | |

Use Case 19

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| Use Case Name: | Define power consumption levels. | |
| Actors: | Customer, System. | |
| Description: | Allows user to define a limit for the power consumption of a particular device and send him warnings when the limit exceeds. | |
| Trigger: | When customer clicks on ‘Power consumption levels’ button. | |
| Preconditions: | Devices are consuming power without any limit. | |
| Post conditions: | Successfully defined limits for the power consumption of a device. | |
| Normal scenarios: | Customer: | Clicks on the ‘Power consumption levels’ button. |
| System: | Displays a data entry screen with fields to enter the amount of limits. |
| Customer: | Fills up the fields and clicks on ‘Confirm’ button. |
| System: | Validates the information entered by the customer and displays a ‘Successfully defined the limit’ message and sends a message to the administrator informing the limitation of the particular device, if there are no errors. |
| Customer: | Successfully defined limits for the power consumption of a device |
| Alternative scenarios: | Customer: | Clicks on the ‘Power consumption levels’ button. |
| System: | Displays a data entry screen with fields to enter the amount of limits. |
| Customer: | Fills up the fields and clicks on ‘Confirm’ button. |
| System: | Validates the information entered by the customer and displays an error message in case of any unsuccessful validation. |
| Customer: | Corrects the error and click Ok button. |
| System: | If no error then the system displays a ‘Successfully defined the limit’ message and sends a message to the administrator informing the limitation of the particular device , or else the process is repeated till the administrator corrects the error. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Customer must have the authority to define a limit for the power consumption of a particular device. 2. Administrator must be aware of these limits. 3. Administrator must have facilities to provide suggestions if there is a limit exceeding. | |

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| Use Case Name: | Retrieve periodically power consumption. | |
| Actors: | Customer, System, Console device. | |
| Description: | Allow user to retrieve the power consumption of devices real time and so he can switch off or do another alternative for a device which is exceeding the consumption limit currently. | |
| Trigger: | When user clicks on the ‘Retrieve power consumptions’ button. | |
| Preconditions: | Devices are switched on and consuming powers, customer wants to retrieve their amount of consumption on that time. | |
| Post conditions: | Successfully retrieved the amount of power consumption. | |
| Normal scenarios: | Customer: | Clicks on the ‘Retrieve power consumptions’ button. |
| System: | Displays a screen containing the power consumption information about currently switched on devices. |
| Customer: | Reviews the information and click ok button if there are no over consumption of the devices. |
| System: | Successfully retrieved power consuming information real time. |
| Alternative scenarios: | Customer: | Clicks on the ‘Retrieve power consumptions’ button. |
| System: | Displays a screen containing the power consumption information about currently switched on devices. |
| Customer: | Reviews the information and click ‘Switch off’ button related to the device which has a high power consumption. |
| System: | Sends the switch off request to the console device through the help of a call center. |
| Console device: | Sends command to the particular device to be switched off, via Bluetooth and send a ‘Successfully switched off’ message to the system through the call center. |
| System: | Receives the message from console device and send a ‘device is switched off’ message to the customer. |
| Customer: | Successfully switched off the device. |
| Extensions: | - | |
| Include: | - | |
| Business rules: | 1. Customer must be able to retrieve the amount of power consumption of each device. 2. Customer must be able to choose an action to perform on high power consuming device. 3. Help of a call center must be provided for help to send messages to the console devices at the customer’s place. | |

Use Case 20

Use Case 21

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| Use Case Name: | Schedule Equipment Usage. | |
| Actors: | Customer, System, Console device. | |
| Description: | Allows user to schedule a time for each equipment and during that time, system automatically switches on and off the device. | |
| Trigger: | When user clicks on the ‘Schedule equipment’ button. | |
| Preconditions: | Customer manually switches on and off the devices in a particular time and he is waiting to schedule the time and hand over to the system to on and off the equipment. | |
| Post conditions: | Switching on and off of the equipment is successfully scheduled and automated. | |
| Normal scenarios: | Customer: | Clicks on the ‘Schedule equipment’ button. |
| System: | Displays a data entry screen containing fields which asking whether in is a new schedule or an existing one. |
| Customer: | If it is a new schedule customer click on the new schedule link. |
| System: | Displays a data entry screen with fields to provide schedule details. |
| Customer: | Fill up the fields with required information and click on ‘Ok’ button. |
| System: | Validates the information entered by the customer and displays a ‘Successfully scheduled’ message and sends a message to the administrator informing about the schedule of the device, if there are no errors. |
| Customer: | Successfully scheduled the device. |
| Alternative scenarios: | Customer: | Clicks on the ‘Schedule equipment’ button. |
| System: | Displays a data entry screen containing fields which asking whether in is a new schedule or an existing one. |
| Customer: | If it is a new schedule customer click on the new schedule link. |
| System: | Displays a data entry screen with fields to provide schedule details. |
| Customer: | Fill up the fields with required information and click on ‘Ok’ button. |
| System: | Validates the information entered by the customer and displays an error message in case of any unsuccessful validation. |
| Customer: | Corrects the error and click Ok button. |
| System: | If no error then the system displays a ‘Successfully scheduled’ message and sends a message to the administrator informing about the schedule of the device, or else the process is repeated till the administrator corrects the error. |
| Business rules: | 1. Customer must be allowed to schedule a time for particular equipment. 2. System must have facilities to automatically switch on | |