

Vendomatic Project

Use Cases

Version 1.3

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Revision History

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UC-01: Login to Web Application

Brief Description

The user wants to login to the Vendomatic web application on the web platform and gains access to relevant features and functionalities based on his/her role.

Scope	Vendomatic Web Application
Level	User Goal
Primary Actors	<ul style="list-style-type: none">• Vending Machine Owners• Operators

Preconditions

- The user has registered for a Vendomatic web account.

Basic Flow of Events

1. The user initiates the process of login from a web browser.
2. The system prompts the user to enter login credentials in terms of username and password.
3. The user enters username and password.
4. The system validates user credentials.
5. Upon successful authentication, the user gains access to the relevant features and functionalities based on their role as a vending machine owner or operator.

Alternative Flows

First Login

If in step-4 of the basic flow the system detects a first time login, then;

1. The system prompts the user to update the password.
2. The user inputs a new password.
3. The system saves the new password and redirects the user to the Login section.

Extensions

Invalid Credentials

If in step-3 of the basic flow the user enters invalid credentials, then;

1. The system notifies the user of incorrect username or password and prompts them to retry.
2. The use case resumes at step-2.

Recover Credentials

If step-3 of the basic flow the user forgot the credentials, then;

1. The user initiates the process of password reset.
2. The system asks for an email verification.
3. The user inputs the registered email address.
4. The system sends an email to the user's mail which includes a password reset option.
5. The user resets his/her password via this option.
6. The system resets the user password and prompts the user to provide a new password.

7. The user inputs a new password.
8. The use case resumes at step-2 of the basic flow.

Key Scenarios

- A vending machine owner logs in to manage their vending machines.
- An operator logs in to monitor and perform maintenance tasks on vending machines.

Post-Conditions

Successful Completion

The user is logged into the Vendomatic Web Application and has access to the relevant features and functionalities based on their role.

Failure Condition

The user stays logged out from the Vendomatic Web Application and does not have access to the relevant features and functionalities based on their role.

Special Requirements

- Owners are registered during the setup phase, and a single Vendomatic Software on the web platform has a single owner.
- Social logins are not supported by the Vendomatic Web Application.
- Usernames are always the email of the user.
- Passwords are at least 8 characters containing at least one letter and one number.
- All inputs are both client-side and server-side validated.

UC-02: Manage Operators

Brief Description

The vending machine owner uses the Vendomatic application to manage operators associated with their vending machines. They can add, edit, or remove operator accounts, assign roles and permissions. This functionality allows the vending machine owner to maintain control over their vending machine operations and ensure that only authorized personnel can access and manage their machines.

Scope	Vendomatic Web Application
Level	User Goal
Primary Actors	<ul style="list-style-type: none">• Vending Machine Owners

Preconditions

- The user has successfully logged in to the Vendomatic Web Application through UC-01.
- The user has the “Vending Machine Owner” role.

Basic Flow of Events

1. The user navigates to the operator management section.
2. The system provides management options as adding, modifying and deleting operators.
3. The user initiates the process of adding a new operator.
4. The system prompts the user to provide operator email and assignment of vending machine(s) to this newly defined operator by displaying the existing vending machines.
5. The user inputs the operator email and does the vending machine assignment.
6. The system validates the information, creates a random password and registers the operator accordingly.
7. The system sends an email to the operator.

Alternative Flows

If in step-5 of the basic flow the system detects invalid or missing information, then;

1. The system notifies the user of the issue and prompts them to correct the information.
2. The use case resumes at step-4.

Extensions

Modify an Existing Operator

If in step-3 of the basic flow the user needs to modify an existing account, then;

1. The user selects an existing operator to open the details section.
2. The system displays the details of this operator.
3. The user modifies the operator by inputting any of the following;
 - a. Operator email,
 - b. Assigning one, more or all vending machines.
4. The user submits the changes to the system.
5. The system validates the changes.
6. The system sends an email to the operator indicating the changes.

Delete an Existing Operator

If in step-3 of the basic flow the user needs to delete an existing operator account, then;

1. The user selects an existing operator to see the details.
2. The system displays the details of this operator.
3. The user initiates the process of deleting the operator.
4. The system asks for confirmation.
5. The user confirms the operation.
6. The system deletes the operator.

Key Scenarios

- A vending machine owner creates a new or modifies/deletes an existing operator.

Post-Conditions

Successful Completion

- A new operator has been created and associated with vending machines, or an existing operator has been modified.

Failure Condition

- The operator creation, modification or deletion process is failed and an error message is prompted.

Special Requirements

- Usernames are always the email of the user.
- Passwords are at least 8 characters containing at least one letter and one number.
- All inputs are both client-side and server-side validated.
- An operator can be assigned to one or more machines.
- An operator always has the Operator role.

UC-03: Manage Vending Machines

Brief Description

The vending machine owner or operator registers their vending machine with essential attributes, ensuring discoverability by customers and enabling remote management and monitoring.

Scope	Vendomatic Web Application
Level	User Goal
Primary Actors	• Vending Machine Owners

Preconditions

- The user has successfully logged in to the Vendomatic Web Application through UC-01.
- The user has the “Vending Machine Owner” role.

Basic Flow of Events

1. The user navigates to the vending machine management section.
2. The system provides management options as adding, modifying and deleting vending machines.
3. The user initiates the process of adding a new vending machine.
4. The system prompts the user to enter the information of the new vending machine.
5. The user inputs the following information of the new vending machine;
 - a. Machine alias,
 - b. Location coordinates,
 - c. Machine type,
 - d. Total isle number,
 - e. Status.
6. The system validates the information and creates a new vending machine.

Alternative Flows

If in step-6 of the basic flow the system detects invalid or missing information, then;

1. The system notifies the user of the issue and prompts them to correct the information.
2. The use case resumes at step-4.

Extensions

Modify an Existing Vending Machine

If in step-2 of the basic flow the user needs to modify an existing vending machine, then;

1. The user selects an existing vending machine to see the details.
2. The system displays the details of the selected vending machine.
3. The user modifies the vending machine by inputting;
 - a. Machine alias,
 - b. Location coordinates,
 - c. Machine type,
 - d. Total isle number

- e. Status.
4. The user submits the changes to the system.
5. The system validates and saves the changes.

Delete an Existing Vending Machine

If in step-2 of the basic flow the user needs to delete an existing vending machine, then;

1. The user selects an existing vending machine to see the details.
2. The system displays the details of the selected vending machine.
3. The user initiates the process of deleting the selected vending machine.
4. The system asks for confirmation.
5. The user confirms the operation.
6. The system deletes the selected vending machine.

Key Scenarios

- A vending machine owner creates a new or modifies/deletes an existing vending machine.

Post-Conditions

Successful Completion

- A new vending machine has been created, or an existing vending machine has been modified or deleted.

Failure Condition

- The vending machine creation, modification or deletion process is failed and an error message is prompted.

Special Requirements

- Machine aliases are unique across the system.
- The location is in WGS84 datum EPSG 3857 format compliant with the Google Map API.
- Machine type can be one of Beverage, Snack, or Beverage/Snack.
- Status can be one of Healthy, Maintenance, or Faulty.
- All inputs are both client-side and server-side validated.

UC-04: Manage Products

The vending machine owner/operator remotely manages and monitors products in real-time using the Vendomatic Web Application.

Scope	Vendomatic Web Application
Level	User Goal
Primary Actors	<ul style="list-style-type: none">• Vending Machine Owners• Operators

Preconditions

- The user has access to the Vendomatic Web Application through UC-01.
- The user has either one of the Vending Machine Owner or Operator roles.
- The corresponding machine is already assigned to the Operator through UC-02.

Basic Flow of Events

1. The user navigates to the product management section.
2. The system provides management options as adding, modifying and deleting products.
3. The user initiates the process of adding a new product.
4. The system prompts the user to provide the product information which are as follows;
 - a. Type,
 - b. Name,
 - c. Quantity,
 - d. Unit price.
5. The user inputs the product information.
7. The system validates the information and creates a new product.

Alternative Flows

If in step-6 of the basic flow the system detects invalid or missing information, then;

1. The system notifies the user of the issue and prompts them to correct the information.
2. The use case resumes at step-5.

Extensions

Modify an Existing Product

If in step-2 of the basic flow the user needs to modify an existing product, then;

1. The user selects any existing product to see its details.
2. The system shows the details of the selected product.
3. The user modifies the product by inputting any of the following information;
 - a. Type,
 - b. Name,
 - c. Quantity,
 - d. Unit price.
4. The user submits the changes to the system.
5. The system validates the changes.

Delete an Existing Product

If in step-2 of the basic flow the user needs to delete an existing vending machine, then;

1. The user selects an existing product to see its details.
2. The system shows the details of the selected product.
3. The user initiates the process of deleting the selected product.
4. The system asks for confirmation.
5. The user confirms the operation.
6. The system deletes the product.

Key Scenarios

- A vending machine owner manages products and reorders products as needed.
- An operator checks the stock of each product in the vending machine and restocks as necessary.

Post Conditions

Successful Completion

- A new product has been created, or an existing product has been modified/deleted.

Failure Condition

- The product creation, modification or deletion process is failed and an error message is prompted.

Special Requirements

- Product names are unique across the system.
- Liquid quantities are calculated as [total liters / liters per cup].
- All inputs are both client-side and server-side validated.

UC-05: Manage Inventory

Brief Description

The user remotely manages and monitors inventory levels in real-time using the Vendomatic Web Application.

Scope	Vendomatic Web Application
Level	User Goal
Primary Actors	<ul style="list-style-type: none">• Vending Machine Owners• Operators

Preconditions

- The user has access to the Vendomatic Web Application through UC-01.
- The user has either one of the Vending Machine Owner or Operator roles.
- The corresponding machine is already assigned to the Operator through UC-02.
- The corresponding vending machine is created through UC-03.
- Corresponding products are created through UC-04.
- The Vendomatic adapter is installed on the vending machine which is intended to be managed remotely.

Basic Flow of Events

1. The user navigates to the inventory management section.
2. The system lists the available vending machines.
3. The user selects a vending machine to see its details.
4. The system displays the details of the selected vending machine including the information of available products in that machine.
5. The user initiates the process of adding a new product.
6. The user adds a new product by inputting;
 - a. The predefined product,
 - b. Quantity,
 - c. Unit price, if different from the product unit price,
 - d. Isle number.
7. The system validates the information and adds the product.

Alternative Flows

If in step-7 of the basic flow the system detects invalid or missing information, then;

1. The system notifies the user of the issue and prompts the user to correct the information.
2. The use case resumes at step-6.

Extensions

Modify an Existing Product

If in step-5 of the basic flow the user needs to modify an existing product, then;

1. The user selects an existing product to see the details.
2. The system displays the selected product details in terms of,

- a. The predefined product,
- b. Quantity,
- c. Unit price,
- d. Isle number
3. The user modifies the selected product by changing any field listed in the previous step.
4. The user submits the changes to the system.
5. The system validates the changes and saves the modified information.

Remove an Existing Product

If in step-5 of the basic flow the user needs to remove an existing product, then;

1. The user selects an existing product to remove it.
2. The system asks for confirmation..
3. The user confirms the operation.
4. The system removes the product from the selected vending machine.

Key Scenarios

- A vending machine owner monitors inventory levels and reorders products as needed.
- An operator checks the stock of each product in the vending machine and restocks as necessary.

Postconditions

Successful Completion

- A product has been added to, modified, or removed from an existing vending machine.

Failure Condition

- The product addition, modification or removal process is failed and an error message is prompted.

Special Requirements

- The Isle Number must be in range of the vending machine's Total Isle Count.
- The product to be added or modified must have a positive stock amount.
- All inputs are both client-side and server-side validated.

UC-06: Access Sales Analytics

Brief Description

The vending machine owner/operator uses the Vendomatic application to access detailed sales analytics for their vending machines.

Scope	Vendomatic Web Application
Level	User Goal
Primary Actors	<ul style="list-style-type: none">• Vending Machine Owners• Operators

Preconditions

- The user has access to the Vendomatic Web Application through UC-01.
- The user has either one of the Vending Machine Owner or Operator roles.

Basic Flow of Events

1. The user navigates to the sales analytics section.
2. The system displays sales analytics in terms of,
 - a. Product,
 - b. Vending machine,
 - c. Time period.

Alternative Flows

(None)

Extensions

(None)

Key Scenarios

- A vending machine owner analyzes sales data to identify trends and make data-driven decisions.
- An operator uses sales analytics to adjust inventory levels and optimize product offerings.

Post-Conditions

Successful Completion

- The user has accessed sales analytics to make informed decisions for their vending machine business.

Failure Condition

- There aren't any vending machines nor products defined through UC-03 and UC-04 respectively.
- Products are not assigned to any vending machine through UC-05.

Special Requirements

- All purchases must be recorded just-in-time as a snapshot and dynamic pricing factors must be excluded.

UC-07: Manage Maintenance Alerts

Brief Description

The vending machine owner/operator receives maintenance alerts and machine diagnostics information from the Vendomatic Web Application.

Scope	Vendomatic Web Application
Level	User Goal
Primary Actors	<ul style="list-style-type: none">• Vending Machine Owners• Operators

Preconditions

- The user has access to the Vendomatic Web Application through UC-01.
- The user has either one of the Vending Machine Owner or Operator roles.
- The corresponding machine is already assigned to the Operator through UC-02.
- The corresponding vending machine is created through UC-03.
- The Vendomatic adapter is installed on the vending machine which is intended to be managed remotely.

Basic Flow of Events

1. The user navigates to the diagnostics section.
2. The system displays the maintenance alerts for all vending machines which require maintenance.
3. The user selects an alert to see the details.
4. The system displays diagnostic details of the selected alert.

Alternative Flows

(None)

Extensions

Assign Maintenance Task

If in step-3 of the basic flow the user needs to assign the maintenance task, then;

1. The user initiates the process of creating a maintenance task.
2. The system prompts the user to enter the following information.
 - a. Description,
 - b. Priority,
 - c. Deadline,
 - d. Assigned to.
3. The user enters the prompted information.
4. The system validates the information and creates a new maintenance task.

Ignore Diagnostic Message

If in step-4 of the basic flow the user needs to ignore the diagnostics alert, then;

1. The user initiates the process of ignoring diagnostic message.

2. The system asks for confirmation.
3. The user confirms the operation.
4. The system removes the diagnostic message from the maintenance alerts list.

Key Scenarios

- A vending machine owner receives an alert about a malfunctioning machine and schedules a repair.
- An operator gets a maintenance alert and performs the necessary servicing on the vending machine.

Post-Conditions

Successful Completion

- The user has accessed diagnostics information and managed them by assigning maintenance tasks to operators or ignoring them.

Failure Condition

- The user cannot view any diagnostics information, or a maintenance task cannot be assigned to an operator.

Special Requirements

- The operator must have the machine assigned to himself/herself to conduct maintenance.
- Diagnostics information is pushed by vending machines to a diagnostics queue.
- The queued diagnostics messages are consumed by a background service on the Vendomatic Web Application.

UC-08: Register to the Mobile Application

Brief Description

The customer registers to the Vendomatic Mobile Application in order to access relevant features and functionalities.

Scope	Vendomatic Mobile Application
Level	User Goal
Primary Actors	• Customers

Preconditions

- The user has access to the Vendomatic Mobile Application.

Basic Flow of Events

1. The user initiates the process of registration.
2. The system prompts the user to enter the following information.
 - a. Email,
 - b. Password,
 - c. Password confirmation.
3. The user inputs the prompted information.
4. The system validates and registers the user.
5. The system sends a confirmation email to the user's registered email.

Alternative Flows

If in step-4 of the basic flow the system detects invalid information, then;

1. The system notifies the user of the issue and prompts the user to correct the information.
2. The use case resumes from step-3.

Extensions

Social Registration

If in step-3 of the basic flow the user prefers to proceed with a social identity, then;

1. The user initiates the process of registration via a social identity.
2. The system displays the available social identity providers for authentication.
3. The user completes the authentication.
4. The use case resumes from step-4.

Key Scenarios

- The user wants to register to the Vendomatic Mobile Application.

Post-Conditions

Successful Completion

- The user has registered to the Vendomatic Mobile Application.

Failure Condition

- Registration has failed and the user does not have access to relevant features and

functionalities.

Special Requirements

- The Vendomatic Mobile Application has integration with various social identity providers.
- All inputs are both client-side and server-side validated.

UC-09: Login to Mobile Application

Brief Description

The customer logs into the Vendomatic Mobile Application and gains access to relevant features and functionalities.

Scope	Vendomatic Mobile Application
Level	User Goal
Primary Actors	• Customers

Preconditions

- The user has registered for a Vendomatic Mobile Application account through UC-08.

Basic Flow of Events

1. The user initiates the process of login from the mobile app.
2. The system prompts the user to enter login credentials in terms of username and password.
3. The user enters username and password.
4. The system validates user credentials.
5. Upon successful authentication, the user gains access to the relevant features and functionalities based on their role as a vending machine owner or operator.

Alternative Flows

Invalid Credentials

If in step-4 of the basic flow the system detects invalid credentials, then;

1. The system notifies the user of incorrect username or password and prompts them to retry.
2. The use case resumes at step-3.

Extensions

Recover Credentials

If step-3 of the basic flow the user forgot the credentials, then;

1. The user initiates the process of password reset.
2. The system asks for an email verification.
3. The user inputs the registered email address.
4. The system sends an email to the user's mail which includes a password reset option.
5. The user resets his/her password via this option.
6. The system resets the user password and prompts the user to provide a new password.
7. The user inputs a new password.
8. The use case resumes at step-2 of the basic flow.

Key Scenarios

- A customer logs in to discover nearby vending machines, view product availability, and make purchases.

Post-Conditions

Successful Completion

- The customer is logged into the Vendomatic Mobile Application and has access to relevant features and functionalities.

Failure Condition

- Login failed and the user cannot access relevant features and functionalities.

Special Requirements

- Social logins are supported by the Vendomatic Mobile Application.
- Usernames are always the email of the user.
- Passwords are at least 8 characters containing at least one letter and one number.
- All inputs are both client-side and server-side validated.

UC-10: Search/Filter Products and Vending Machines

Brief Description

The customer searches for nearby vending machines, or filters vending machines using the Vendomatic Mobile Application based on various parameters.

Scope	Vendomatic Mobile Application
Level	User Goal
Primary Actors	<ul style="list-style-type: none">• Customers

Preconditions

- The user has the Vendomatic Mobile Application installed on their device.
- The user has granted the necessary location permissions.

Basic Flow of Events

1. The user navigates to the explore section.
2. The user searches vending machines by filtering with;
 - a. Products,
 - b. Types,
 - c. Proximity,
 - d. Price.
3. The system filters and displays proper vending machines.

Alternative Flows

(None)

Extensions

Search Nearby

If in step-3 of the basic flow the user wants to discover nearby vending machines, then;

1. The user initiates the process of finding nearby.
2. The system gets the user's current location for searching nearby vending machines.
3. The system displays nearby vending machines based on user's location as marked on the map.

Key Scenarios

- A customer wants to find the nearest vending machine to purchase products.

Post-Conditions

Successful Completion

- The user views a list of vending machines based on filters and can select one to view more information.

Failure Condition

- The user cannot find any vending machines based on filters.

Special Requirements

- The Find Nearby selection defaults to 500 meters perimeter.

UC-11: Rate Products and Vending Machines

Brief Description

The customer rates vending machines or products using the Vendomatic Mobile Application.

Scope	Vendomatic Mobile Application
Level	User Goal
Primary Actors	<ul style="list-style-type: none">• Customers

Preconditions

- The user has the Vendomatic Mobile Application installed on their device.
- The user has registered through UC-08.
- The user is logged in to the Vendomatic Mobile Application through UC-09.

Basic Flow of Events

1. The user searches for a vending machine or selects one from the list of nearby vending machines.
2. The system shows the vending machine details, including its ratings.
3. The user initiates the process of rating the vending machine and submits his/her rating.
4. The system saves the rating and updates the average rating of the vending machine.

Alternative Flows

(None)

Extensions

Rate Products

If in step-3, the user wants to rate a product rather than the vending machine itself, then;

1. The user views the product list of the vending machine.
2. The user selects a product to rate.
3. The system displays the product details.
4. The user initiates the process of rating the product and submits his/her rating.
5. The system saves the rating and updates the average rating of the selected product.

Key Scenarios

- A customer wants to see ratings of a vending machine or a product to determine its quality before making a purchase.
- A customer wants to provide a rating after using a vending machine or after buying a product to share their experience with other users.

Post-Conditions

Successful Completion

- The user views ratings for a vending machine or a product.
- The user submits a rating for a vending machine or a product which later becomes visible to other users.

Failure Condition

- The rating cannot be submitted.

Special Requirements

- The rating is a 1-5 range represented by stars.