**Product Requirements**

**Project:** A Food Waste Reduction Website

**Team:** **Ninja Cat Coder**

**Revision History**

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| --- | --- | --- | --- |
| Date | Version | Description | Author |
| 02/01/2024 | 1.0 | This is a detailed description of how the Software is going to be like. | Tobi Adeoye |
| 02/04/2024 | 2.0 | I came up with a brief problem statement for the project. | Tobi Adeoye |
| 02/04/2024 | 3.0 | I identified who the stakeholders are going to be for the project. | Tobi Adeoye |
| 02/05/2024 | 4.0 | I identified what the system Requirements are going to be for the project. | Tobi Adeoye |
| 02/05/2024 | 5.0 | I identified what the Functional Requirements are going to be for the project. | Tobi Adeoye |
| 02/05/2024 | 6.0 | I identified what the Non-Functional Requirements are going to be for the project. | Tobi Adeoye |
| 02/05/2024 | 7.0 | I came up with a well-designed Use Case Diagram | Tobi Adeoye |
| 02/06/2024 | 8.0 | I defined what the Use Case Description are going to be for the project. | Tobi Adeoye |

**Brief Problem Statement**

In many urban centers, the issue of food waste coexists with the pervasive problem of hunger and starvation. Despite the abundance of surplus food in various establishments, there lacks an efficient and systematic mechanism to connect this excess with those in need. This gap leads to the unnecessary disposal of edible food and exacerbates food insecurity within communities. To address this challenge, Ninja Cat Coder came up with the idea of a food waste reduction website that aims to bridge the disconnect between surplus providers and individuals or charities in need, fostering a sustainable solution to both reduce food wastage and alleviate hunger. The goals of this project are the following:

* **Reducing Food Waste**: By redirecting edible surplus to those in need.
* **Alleviating Hunger and Starvation**: By sharing surplus food with vulnerable populations.
* **Community Engagement**: By fostering a community engagement to address food waste and hunger.
* **Efficient Surplus Redistribution**: By creating a platform for surplus food redistribution.

By addressing these interconnected issues through a user-friendly and accessible platform, the food waste reduction initiative seeks to build a more equitable and sustainable food ecosystem, reducing waste and ensuring that surplus becomes a valuable resource for those in need.

**Stakeholders**

**“Ninja Cat Coder” Greentech Ventures - Investor and Board of Directors**

The Ninja Cat Coder project has received funding from Greentech Ventures, an investment firm that focuses on financing innovative projects aimed at solving environmental and social challenges. The approval of all funding for this product will be given by Greentech Ventures. The investor will be included from the beginning of the product life cycle. Ninja Cat Coder will organize several presentations and meetings with the investor and the board of directors to ensure that they are an integral part of the project and can offer resources if needed. Greentech Ventures is excited to see how the platform will develop into a transformative force, driving positive change in the areas of food waste reduction, hunger alleviation, and urban sustainability.

**“Ninja Cat Coder” Greentech Ventures - Product owner**

Greentech Ventures will be the product owners of The Ninja Cat Coder project. They are responsible for providing a clear and comprehensive vision of what they want to achieve with the project and communicating their ideas effectively to the development team. They will also ensure that the project meets their standards and aligns with their goals, while maintaining open communication with the development team to ensure a smooth and successful product launch. Below are some of the product owner responsibilities:

* Defines Features.
* Collaborates with Dev team.
* Prioritize needs.
* Evaluate product progress.

**Surplus Food Providers / Charity / Individuals in Need**

They are the end-users for this project therefore they should be engaged in every step of the project to ensure its success. This can be achieved by conducting surveys, interviews, and focus groups to gather data and feedback from them. In addition, a group of selected surplus food providers, charities, and individuals in need will test the product before its launch to identify any necessary changes.

**Software Engineering Team**

The software engineering team plays a crucial role in overseeing and managing the various stages of the project's life cycle. They are responsible for ensuring that the project progresses smoothly and efficiently, from planning and design to development, testing, and deployment. The team also works to identify and mitigate potential risks and issues that may arise during the project, ensuring that it is completed within the specified timeline and budget.

**The Users**

The target user:

* Must have an internet connection.
* Must be familiar with internet navigation.
* Restaurants, cafes, grocery stores, event venues, and other food establishments with surplus food.
* Farmers or agricultural producers with excess produce.
* Individuals or families facing food insecurity or hunger.
* Homeless shelters, soup kitchens, food banks, and other charitable organizations that distribute food to those in need.

**System Requirements**

The food waste reduction website will consist of a centralized web-based application that has a list of requirements as following:

● The project shall use JavaScript as a programming language.

● The project shall use HTML5, CSS3, and Bootstrap v5 as a Framework.

● The project shall use a google firebase database.

● The project shall be compatible with the most recent web browsers versions.

**Functional Requirements**

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| No. | Function Name | Description | Release |
| 1 | User Registration | The system shall allow the user to register by providing the system with the user personal information (Full Name, Email Address, Password, User Type (Surplus Provider, Recipient, etc.) )  When a user registers on the system, their login details will be linked with the relevant user profile information that already exists. This will ensure that the user has access to the correct account and information when they log in. | R1 |
| 2 | Login | The user shall be able to sign in to his account by providing their registered email address and their password to log-in. | R1 |
| 3 | Surplus Food Listings | The surplus providers (restaurants, supermarkets, etc.) shall be able to log in their accounts to access the surplus food listing feature (Create New Listing, Listing Details, Listing Status, etc.). | R1 |
| 4 | Geolocation Services | When users access the website, they shall be prompted to grant permission for the website to access their device's location.  Once the user has granted permission the website shall use the Geolocation API to retrieve the user's latitude and longitude coordinates.  If surplus providers are creating listings, the geolocation coordinates shall be automatically associated with the pickup location of the surplus food. | R2 |
| 5 | User Dashboard | Users shall log into their accounts to access their personalized dashboards. Upon the user logging in, the system shall direct the user to their tailored dashboards type(Surplus provider, Recipient, etc.).  Each dashboard shall display relevant information and features based on the user's role.  Surplus Provider Dashboard shall have surplus listings overview, add new listing, listing management, and donation history.  Recipient Dashboard shall have surplus listings feed, donation requests, communication center, and donation history. | R2 |
| 6 | Messaging System |  | R2 |

**Non-Functional Requirements**

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| No. | Non-Functional Name | Description |
| 1 | Usability | * The system shall have an intuitive design and user-friendly interface with clear navigation, easily recognizable buttons, and a consistent layout across pages. * The system shall have a responsive, adapting seamlessly to different screen sizes and devices, providing an optimal user experience on both desktop and mobile platforms. * The system shall have a consistent design language, including color schemes, fonts, and iconography, to create a cohesive and visually appealing user experience. |
| 2 | Accessibility | * The system shall comply with accessibility standards (e.g., WCAG) to ensure that the website is usable by individuals with disabilities. |
| 3 | Reliability & Availability | * The system shall be available with a 99.9999% availability rate. * The system shall provide database storage and backup. |

**Use Case Diagram**

A diagram of a diagram

Description automatically generated

**Use Case Description**

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| Use Case Number | UC-01 |
| Use Case Name | **User Registration** |
| Overview | The user shall be able to enter his personal information upon registration. |
| Actor(s) | Surplus provider, Recipient |
| Pre-condition(s) | * The website has been set up, running, and configured. * Registrant has accessed the website through the URL. |
| Scenario Flow | **Main (success) Flow:**   1. User selects the option to register. 2. System requests personal information. 3. The user provides personal information. 4. Full Name 5. Email Address 6. Password 7. User Type (Surplus Provider, Recipient, etc.) 8. The system verifies the required information. 9. If the provided information is invalid, the system will display an error message, and return to Step 2. 10. If not, the system will save the new account into the database, display a confirmation to the user, then complete the registration. |
| Alternate Flows | The user will have the chance to cancel a registration after Step (2) by just clicking on the “Cancel” button.  The system will display the main page. |
| Post Condition | The system will not store the user information unless the user clicks on “Register” and after the system verifies the personal information provided to match the website data. |

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| Use Case Number | UC-02 |
| Use Case Name | **Login** |
| Overview | The user shall enter their **Email** and **Password** to be able to log in to the system. |
| Actor(s) | Surplus provider, Recipient |
| Pre-condition(s) | * The user shall be registered. * The user shall be on the login page. |
| Scenario Flow | **Main(success) Flow:**   1. The user shall enter their **Email** and **Password,** and then click on log in. 2. The system will verify the information provided by the user. 3. If the information is incorrect, the system will how a message and start from step (1). 4. Direct the user to the dashboard page |
| Alternate Flows | Not applicable. |
| Post Condition | The user will be able to access the dashboard. |

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| Use Case Number | UC-03 |
| Use Case Name | **Surplus Food Listings** |
| Overview | Surplus providers shall log in to their accounts to access the surplus food listing feature. |
| Actor(s) | Surplus provider |
| Pre-condition(s) | * The user shall log in to their account. * The user needs to have a Surplus provider role to be able to manage the food listings. |
| Scenario Flow | **Main(success) Flow:**   1. A surplus food provider shall log into the Food Waste Reduction Website using their credentials. 2. Upon login, the provider navigates to the "Surplus Food Listings" section of the website.  * **Create Food listing:**  1. The provider shall click on the "Create New Listing" button to add details about the surplus food they wish to donate. 2. The provider shall fill out a form, entering details such as the type of food, quantity available, expiration date, pickup location, and any additional notes. 3. Satisfied with the listing details, the provider submits the listing, making it available for recipients to view and request.  * **Editing Food listing:**  1. The user shall select the list to edit. 2. Click on the edit button. 3. The system will redirect the user to the “edit list” form. 4. The user hits save. 5. The system will edit the list from the database, and redirect the user to the surplus food listings page.  * **Deleting Food listing:**  1. The user shall select the item to remove from the list. 2. The user shall click on the remove button. 3. The system will display a confirmation message. 4. If the user clicks “ok”. the system will remove the item from the list from the database and redirect the user back to the surplus food listings page.  * **Listing Details:** |
| Alternate Flows | Not applicable. |
| Post Condition | * **Create Food listing:**   The food list will be created and available to the users.   * **Editing Food listing:**   The food list details will be updated accordingly.   * **Deleting Food listing:**   The food list will be permanently removed. |

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| Use Case Number | UC-04 |
| Use Case Name | **Geolocation Services** |
| Overview | Upon obtaining user permission, the Geolocation API shall retrieve the latitude and longitude coordinates of the user's current location. |
| Actor(s) | Surplus provider, Recipient |
| Pre-condition(s) | * The user shall be on the website. * The user shall grant permission to the website, in order for the website to access their device's location. |
| Scenario Flow | **Main(success) Flow:**   1. The user shall log into the Food Waste Reduction Website using their credentials. 2. Upon successful login, the website shall prompts the user to grant permission for location services. 3. The user shall grant permission to the location services. 4. The system shall be able to calculates and displays the distance between the user's current location and the pickup location. |
| Alternate Flows | Not applicable. |
| Post Condition | The user location shall be share with the website. |

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| Use Case Number | UC-05 |
| Use Case Name | **User Dashboard** |
| Overview | Users shall log in to their accounts to access their personalized dashboards. |
| Actor(s) | Surplus provider, Recipient |
| Pre-condition(s) | * The user shall be log in to their account. |
| Scenario Flow | **Main(success) Flow:**   1. The user shall be logged into the Food Waste Reduction Website using their credentials. 2. Upon successful login, the user shall be redirected to their personalized dashboard. 3. The dashboard provides an overview of the user's activities and relevant information, such as active surplus food listings, donation history, etc.   **Create Surplus Food Listing:**   1. The user shall create a new surplus food listing and clicks on the "Add New Listing" button. 2. The website shall present a form where the user can input details about the surplus food, including type, quantity, expiration date, and pickup location. 3. If geolocation is enabled, the website shall automatically suggest the user's current location as the pickup location, simplifying the input process. 4. After entering the details, the user shall review the surplus food listing preview to ensure accuracy. 5. Satisfied with the listing, the user submits it. The website associates the listing with the user's account and updates the dashboard to reflect the new addition.   **Manage Listings:**   1. The user can view and manage their existing surplus food listings, including editing or deleting listings as needed.   **Donation History:**   1. A section of the dashboard shall display the user's donation history, providing insights into past contributions and their impact.   **Logout:**   1. After completing their tasks, the user logs out from the dashboard to ensure the security of their account. |
| Alternate Flows | * **Create Surplus Food Listing:**   on the page in step 2, the user will have the option to cancel surplus food listing creation.   * **Manage Listings:**   The user will have the option to cancel the listings update. |
| Post Condition | * **Create Surplus Food Listing**:   The surplus food listing will be created and available to the users.   * **Manage Listings:**   Food listing details will be updated accordingly.   * **Donation History:**   The donation history shall be displayed on the screen.   * **Logging-out:**   The user shall log-out of their account. |