Business Requirements Document:

Eden Fresh

Team Web Crawlers

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Submission Date: October 6, 2021

1.   Executive Summary

This Business Requirements Document (BRD) outlines the requirements for our web application, Eden Fresh. It contains both functional and non-functional requirements, our objectives for the project, the reasons why our product is needed, and the scope of our project. The BRD will be used to determine what needs to be done and a detailed explanation of our product.

2.   Project objectives

Eden Fresh's primary objective is to provide an online platform for urban growers and buyers to connect with each other, allow growers to sell their products and receive profit, while giving convenience for buyers to purchase homegrown ingredients around their neighborhood. Eden Fresh is a web application that aims to help bridge the gap between urban growers and potential buyers within their neighborhood. The primary objective is attainable as a result of the features that our web application provides. It will allow growers to post their current listings for sale and buyers will be able to reserve a selected stock. Once the grower has replied to a request, the web application will allow growers and buyers to interact with each other. It is up to the growers and buyers to set a designated meeting place for a transaction to happen. We aim to finish the development and launch Eden Fresh by May 2022.

3.   Needs statement

Currently, there are very few options for growers to sell their produce to the public which ends up leading to food waste. On the other hand, there are currently many individuals who would want to buy from their local community because the produce they are looking to buy is either obscure or they would rather buy fresh produce from their local community; however, they do not have any means to connect to their local growers. Eden Fresh helps build the gap

between the grower and buyer. Eden Fresh is a free web application that growers and buyers

can access and use as a means to connect to each other. If the growers have produce that the

buyer needs then the buyer can put the produce on reserve and if there are any questions

regarding the transaction the buyer or grower can reach out and connect with each other using

the chat feature of the application.

4.   Project Scope

4.1 In Scope

The following areas are in scope for this project:

- Our web app will support:
  - o Google Chrome version 89 and any later versions released until May 2022
  - o American English, be available for anyone within the United States only, U.S. metric system, and support U.S. currency
  - o English-translated name of the produce if exists and their English-transliterated name if a translated name does not exist
  - o Users who are 18 years or older

4.2 Out of Scope

The following areas are out of scope for this project:

- Monetary transactions will not be supported by our web application
- No regulation on how or where the transaction will occur

5. Functional & Non-Functional Requirements

5.1 Set-up Shop

- Value:
  - Set-up shop will help the value of Eden Fresh because it allows the grower to post their current produce listings for sale on their profile.
- Dependencies:
  - To create a post, sellers must have to input all the required fields of information regarding the product
- Functional Requirements
  - Sellers are able to post their current products for sale and their preferred meetup location on their profiles.
    - The preferred meetup location will be used as the criteria for the miles radius search.
    - The preferred meetup location will default to the seller's home location, but the seller can change it to another location at any time.
      - The preferred meetup location will not be visible to see until a transaction is ready.
      - Sellers' location will be used with their permission in order for the system to facilitate search features.
  - Sellers are able to set the necessary information for each product, such as the current number of stock, price per pound or piece, images of the product, and a description of the product.
    - Whether the price is per-pound or per-piece is chosen by the seller.
    - A posting is limited to 4 images and 40 MB per image.
    - The description is limited to 1000 UTF-8 characters.

- ■ Sellers will be able to update any of the product information at any time.
  - ○ Sellers are limited to having up to 20 active posts at a time.
    - ■ Sellers cannot post another listing if they already have 20 active listings.
  - ○ Posts last indefinitely and can be removed by the seller.
- Non-Functional Requirements:
  - ○ The system will generate only one post at a given time
  - ○ Images uploaded to the product description are considered fast if it is uploaded within 5 seconds.
  - ○ The system would be considered fast if the posts are uploaded to the page within 5 seconds.
- The system would experience an error when executing this functionality if a user posting a listing without all the necessary product information, posting more than 20 active posts, uploading more than 4 images and images that are larger than 40MB, and writing a description that is not UTF-8 characters and if it is more than 1000 characters long.
  - ○ The system would handle these errors by preventing the user from making the post if it has conflicted with one of the constraints and display an error message regarding which constraint the user has conflicted with. The system would also log the specific error that has occurred. Then it will take 3 seconds before displaying the corresponding error message to the user. Once the error message has been displayed, the user is then able to re-enter the information that is incorrect.

5.2 Reservation and Transaction

- Value:
    - Reservation and Transaction will help the value of Eden Fresh because it allows buyers to send a reservation request to the seller regarding the amount of produce they desire to reserve on a listing.
- Dependencies:
    - There must be in-stock produce on a sellers profile for buyers to reserve
    - Buyers can reserve produce given that amount doesn't exceed the stock amount
    - To reserve a product, the stock amount has to be greater than zero
    - For a transaction to go through, both the buyer and seller have to confirm the request within the allotted time.
- Functional Requirements
    - Buyers are able to reserve their desired product from a seller by selecting an amount from the current unreserved stock and sending a request to the seller.
        - Buyers are unable to reserve produce that is currently out of stock or reserve an amount that is greater than the current stock.
        - Buyers are able to send the request to the seller after confirming the amount they have selected
        - Sellers will receive a notification for the request to accept or deny it.
            - Sellers also have the option to cancel a reservation after accepting.
            - Once a reservation is accepted, the buyer will receive a notification about its acceptance and the reservation will last for 72 hours without confirmation of a transaction by the seller.

- ○ Once the reservation is confirmed by the seller, the product stock will be reduced by the number reserved.
        - ○ If the transaction is not confirmed within 24 hours, it will be canceled and the stock is not reduced.
    - ■ Buyers can also cancel a reservation at any time.
    - ■ Buyers can send a request to the seller to change the reserved amount to another non-zero amount within the unreserved stock count.
        - ● The request can be sent after the reservation is accepted.
        - ● Upon request, the seller will receive a notification and must accept or decline before the transaction can be confirmed. The confirmation date is also extended by 24 hours if the initial request was already accepted.
            - ○ If accepted, the reserved amount is changed to the buyer's desired amount.
            - ○ If declined, the reserved amount remains the same.
- ○ After the reservation is accepted, the buyer is able to view the state of the transaction according to the seller.
    - ■ The seller is able to set the state to one of 3 states: "Processing", "Pending Approval", and "Ready".
    - ■ The initial state of the reservation after acceptance is "Processing".
    - ■ If the buyer has requested a change to the reservation, the state is automatically set to "Pending Approval".
        - ● Once the reservation is accepted or declined, the state is automatically set back to "Processing".

- ■ Once the produce is gathered and the seller is ready to perform the transaction, the seller will manually set the state to "Ready".
  - ● Once this occurs, a chat request will be sent from the seller to the buyer (if there is not already a chat open between the buyer and seller), and a notification will be sent to the buyer, notifying that the transaction is ready.
- ● Non-Functional Requirements:
  - ○ For a given produce listing, the system will generate only one reservation request
- ● The system would experience an error when executing this functionality if the user would reserve more than the currently listed stock.
  - ○ The system would handle these errors by canceling the reservation request that the buyer is trying to make and display an error message. It would also log the error that has occurred. Then it will take 3 seconds before displaying the corresponding error message to the user. The user is then able to re-enter values into the fields containing the invalid information.

5.3 Request Fulfillment

- Value:
  - Request Fulfillment will help the value of Eden Fresh because it allows buyers to post a request for a specific amount of produce that is visible to all sellers. Furthermore, sellers can leave a post on the buyer's request, with a price offer to fulfill their request.
- Dependencies:
  - There must be sellers in the system in order for buyers to have their requests fulfilled
- Functional Requirements
  - Buyers are able to post a request for a specific amount of produce that is visible to all sellers.
    - The request can be left posted for 30 days and canceled by the buyer at any time.
      - If the request is left unfulfilled for more than 30 days, then it is automatically removed.
  - Sellers can leave a post on the buyer's request, with a price offer to fulfill their request.
  - Once the buyer has selected a seller to fulfill the request, the request is removed.
  - After selecting a seller, the buyer can see the state of the order.
    - The seller and the app are able to set the state to one of 2 states: "Processing" and "Ready".
    - The initial state of the reservation after acceptance is "Processing".
    - Once the product is gathered and the seller is ready to perform the transaction, the seller will manually set the state to "Ready".

- - - Once this occurs, a chat request will be sent from the seller to the buyer (if there is not already a chat between the buyer and the seller), and a notification will be sent to the buyer that the transaction is ready.
- Non-Functional Requirements:
  - The system will generate only one request fulfillment bid posting at a time
  - The system will be considered fast if the post is posted within 5 seconds
- The system would experience an error when executing this functionality if a user tries to post a request for an ingredient that is not supported or does not exist.
  - The system would handle these errors by canceling the current execution of the function, logging the specific error that has occurred, and display the corresponding error message. It would take 3 seconds before displaying the corresponding error message to the user. The user is then able to re-enter values into the fields containing the invalid information.

5.4 Miles Radius Search

- Value:
    - Miles Radius Search will help the value of Eden Fresh because it gives users the ability to do a miles radius search around an inputted location and find ingredient listings.
- Dependencies:
    - The system will only be able to get a user's current location if
        - the user allows the web application to obtain their location and
        - the user location service is on
    - In order to conduct the miles radius search, users must use their current location or input a specified location
        - Locations inputted must be valid in order for the search to work
- Functional Requirements
    - Buyers will be able to search for ingredient listings within a specified distance of their choosing from a location they have set.
        - Buyers will be limited to a 5, 10, or 15-mile search radius which allows buyers to search for sellers around a location of their choosing.
        - Buyers are able to use their current location or set a specific location as the center of the area search
            - Buyers' current location will be used as their placeholder location until they have changed it to a location of their choosing
    - Users' current location will be used with their permission in order for the system to facilitate search features.
        - The buyer is also able to change their current location to a valid location
- Non-Functional Requirements:

- ○ The system is considered fast it is able to filter the results within 5 seconds

- ○ Unless permission was allowed, the system will not be able to get the user's location and will notify the user

- The system would experience an error when executing this functionality if the user inputs an invalid location to be used.

  - ○ The system would handle this error by canceling the current execution, log the error that has occurred, and display an error message to the user. It would take 3 seconds to display the error message to the user. The user is then able to re-enter the fields that have been marked incorrect.

5.5 Cuisine Filter

- Value:
  - Cuisine Filter will help the value of Eden Fresh because it gives users the ability to filter their miles radius search results by selecting their desired cuisine.
- Dependencies:
  - The cuisine filter can only be applied after the miles radius search has been conducted
- Functional Requirements
  - Buyers have the option to refine their search results by using the cuisine filter. This applies a filter to the buyers' miles radius search in order to find sellers that specialize in their desired cuisine
    - Buyers will be able to select predefined cuisine(s) applied for their filter and the results from their miles radius search will be refined down to the specified cuisine.
      - List of Possible Cuisines to Select:
        - Asian
          - Chinese, Japanese, Indian, Korean, Thai, Vietnamese
        - European
          - French, Greek, Italian, Spanish
        - Latin American
          - Mexican
- Non-Functional Requirements:
  - The system is considered fast if it can filter the results within 5 seconds

- The system would experience an error when executing this functionality if the user tries to use the cuisine filter on an invalid location.
    - The system would handle this error by canceling the current execution, log the error, return to the mile radius search view, and display an error message to the user. The error message would take 3 seconds to display to the user. The user is then able to re-enter a valid location and apply the cuisine filter.

5.6 Real-Time Notifications

- Value:
  - Real-Time Notifications will help the value of Eden Fresh because it lets the users have a way of getting notifications regarding updates to their reservations/requests, direct messages, and product updates.
- Dependencies:
  - To receive notifications, users must opt-in to receive notifications, follow a buyer, and have a current reservation or request
- Functional Requirements
  - Users will be able to receive and view their real-time notifications
    - Users will be able to change their real-time notification settings at any time
  - The default notifications that users will receive are product updates, direct messages, ratings and reviews made about them or their products, and update notifications regarding their current reservations
  - Buyers must opt-in to get notifications about followed sellers individually
  - All users can opt to not receive product update notifications, direct message notifications, ratings and reviews made about them or their products, and notifications from sellers that they follow.
    - Users cannot hide notifications regarding product reservations and request fulfillment.
  - Users can delete one or multiple notifications.
  - All notifications saved will be automatically deleted every 6 months (January 1st and July 1st) unless users choose not to delete the messages
- Non-Functional Requirements:

- ○ The system is considered fast if the notification shows up on the user's page within 5 seconds
- The system would experience an error when executing this functionality if a user opts out of certain notifications but still receives them and if users opt-in for notifications but do not receive any.
  - ○ The system would handle this error by logging down the error that has occurred. It would also take 3 seconds to display an error message.

5.7 Transactions View

- Value:
  - Transactions View will help the value of Eden Fresh because it gives users the ability to see a list of all accepted reservations and request fulfillment bids involving them, sorted chronologically, latest-first.
- Dependencies:
  - Users must have accepted reservations or request fulfillment bids in order for this view to have content within it
- Functional Requirements
  - Users will be able to see a list of all accepted reservations and request fulfillment bids involving them, sorted chronologically, latest-first.
    - If a chat is open between the user and the other party of a transaction, they can access that chat through the transaction listing.
    - When a transaction is ready, they will be able to view street directions to the transaction's meeting point.
    - Edits to the transactions can be initiated from this view.
  - Cancelled and completed transactions are also visible but can be removed by the user.
- Non-Functional Requirements
  - The loading if the transaction page is considered fast if the page can be loaded within 5 seconds
- The system would experience an error when executing this functionality if the accepted reservations and request fulfillments are not listed in chronological order, if they are not listed at all, if edits to transactions are not updating, and accessing the chat or map from this view is not working.

- ○ The system would handle the accepted reservations and request fulfillment non-chronological error by displaying an error message and taking the user to the previous view. The system would then attempt to chronologize the reservations and request fulfillments. Also, it would prevent the user from accessing the chat or map and display an error message to the user if it is not working. It would also handle these errors by displaying an error message to the user. The error messages would take 3 seconds to be displayed.

5.8 Meeting Point Directions

- Value:
    - Meeting Point Directions will help the value of Eden Fresh because users will have access to a map showing street directions from a location of their choosing to the seller's meetup location
- Dependencies:
    - A buyer's reservation or request fulfillment bid must be ready in order to access the map of street directions to the meeting location
- Functional Requirements
    - Once a buyer's reservation or request fulfillment bid is ready, they will have access to a map showing street directions from a location of their choosing to the seller's meetup location.
        - With the users' consent, their current location will be used as the origin point to connect to the preferred meeting location as the default.
            - The origin location to begin directions from can be changed by the user.
        - Sellers will be able to change the preferred meeting location at any time.
    - Once the respective transaction either expires or is marked complete by the seller, the buyer will no longer have access to the seller's location or directions there.
- Non-Functional Requirements
    - The system will not store the user's location/information once the transaction is completed
    - The system would be considered fast if it is able to retrieve the user's location and load up directions for the user within 10 seconds

- The system would experience an error when executing this functionality if an invalid origin location is inputted or if the system does not generate possible routes from the valid origin location to the meeting destination.
    - The system would handle these errors by logging the error that has occurred and display an error message to the user. If an invalid origin location has been inputted, then the user would be taken to the previous page and re-enter a valid origin location. If the system does not generate possible routes from a valid origin location then the system would take 5 seconds to re-attempt in generating possible routes. The error messages will take 3 seconds to be displayed.

5.9 Following Sellers

- Value:
    - Following Sellers will help the value of Eden Fresh because it gives the buyers the ability to follow their preferred sellers and receive notifications regarding their product postings.
- Dependencies:
    - Users will only be able to follow sellers if the seller has not blocked them
- Functional Requirements
    - Buyers will be able to follow sellers, which adds them to a list of sellers they follow and lets them receive real-time notifications if the seller has restocked a product or posted a new product on their profile
        - Buyers will be able to follow sellers through the seller's profile.
        - Buyers are able to unfollow sellers at any time, which removes them from their following list.
    - Buyers will be able to view their following list on their profile.
        - Users are able to view another's following list by going onto their profile.
            - Users will be able to make this information visible or hidden.
    - An individual buyer can follow up to 300 sellers.
- Non-Functional Requirements
    - The system is considered to be fast if the buyer is able to see the seller's profile within 5 seconds.
    - The system is considered to be fast if the user's following list is updated within 5 seconds.
- The system would experience an error when executing this functionality if a user tries to follow more than 300 sellers

○   The system would handle these errors by logging the error that has occurred,

preventing the current function execution, and displaying an error message. The

system would prevent the user from following another user if they would be

following more than 300 followers. The error message would take 3 seconds to

be displayed to the user.

5.10 Rating and Review

- Value:
  - Rating and Review will help the value of Eden Fresh because it gives users the ability to rate the experiences that they have with each other based on a transaction that they had. Furthermore, this lets users know who is trusted to conduct business with and users who are not trusted.
- Dependencies:
  - A transaction must be completed in order for the buyer and seller to rate and review each other
- Functional Requirements
  - Buyers and sellers will be able to rate and review each other once a transaction between them has been completed or cancelled.
    - Buyers and sellers are allowed to rate each other from a 1-5 star scale.
    - A user can rate and review any specific user and product only once, but it can be changed at any time.
    - Buyers will be able to rate and review the product(s) that they have received and their experience with the seller. Sellers will be able to rate and review their experience with the buyer.
      - A review is limited to 4 images and 40 MB per image
      - The review is limited to 1000 UTF-8 characters.
  - Buyers and sellers are able to view all ratings and reviews that others have posted.
    - Ratings and reviews regarding a buyer or seller will be viewable on their profile

- Ratings and reviews regarding a product will be viewable on the product listing
- Non-Functional Requirements
    - The system is considered fast if the user is able to post their rating and review within 3 seconds
    - The system will generate only one rating and review per product or user
    - The system will ensure that none of the user's personal sensitive information is posted, unless the users themselves wrote it in the description.
- The system would experience an error when executing this functionality if a user tries to write a review that is more than 100 characters or is not UTF-8 characters and upload more than 4 images and an image that is more than 40MB.
    - The system would handle these errors by logging the error that has occurred, preventing the user from posting their review, and displaying an error message to the user. If the user attempts to write a review that is larger than 100 characters or does not contain UTF-8 characters, the system would prevent the user from posting their review and display an error message. The system would also prevent the user from uploading more than 4 images or images that are larger than 40MB. The error messages would take 3 seconds to be displayed to the user.

5.11 User Block Feature

- Value:
    - User Block Feature will help the value of Eden Fresh because it gives users the ability to block other users and prevent them from opening chats with them, follow them, or view old and new posts by the user that blocked them.
- Dependencies:
    - There must be other users in the system in order for a user to block another user.
- Functional Requirements
    - All users can opt to block other users.
        - Blocked users cannot open chats with, follow, or view old and new posts by the user that blocked them.
        - Blocking a user who has already opened a chat with you will prevent them from sending more messages to you.
            - All previous messages are still visible to both parties.
        - Blocking a user who is already following you will remove you from their following list.
    - Users can view the list of users that they have blocked and they are able to unblock them
        - Users are unable to see another user's list of blocked users.
    - A user can block up to 1000 other users.
- Non-Functional Requirements
    - The system is considered to be fast if the blocked users are added to the blocked list, removed from the following list, and blocked from chatting with the user that is blocking them if it is within 3 seconds

- The system would experience an error when executing this functionality if a user tries to block more than 1000 other users

    - The system would handle these errors by logging down the error that has occurred, preventing the user from blocking the user, and displaying an error message. The system would prevent the user from blocking another user if they would be blocking more than 100 other users. The error message would be displayed and it would take 3 seconds to be displayed to the user.

5.12 Chat Feature

- Value:

  - Chat Feature will help the value of Eden Fresh because it allows users to send a request to another user to open a chat between each other to ask questions that they may have regarding their stock and arrange a place to meet up

- Dependencies:

  - To chat with each other, one user has to send a request to the other user and the second user must accept the request

- Functional Requirements

  - All users can send a request to another user to open a chat between each other to ask questions that they may have regarding their stock and arrange a place to meet up.

    - Users that receive the request can accept or decline beginning a chat.

    - Users cannot have multiple active chats with the same user.

    - Users are able to communicate by text with each other through the chat.

      - Each chat message is limited to 500 UTF-8 characters.

      - Images of sizes up to 30 MB can also be sent.

  - Users are able to access previously opened chats

  - Users can have up to 500 active chats at once.

    - Opening a new chat after having 500 active chats will result in the oldest one being deleted, preventing either party from accessing the deleted chat.

    - Users can manually close chats.

- Non-Functional Requirements

- ○ The system is considered to be fast if the messages are viewable to the opposing user within 3 seconds
- ○ Uploading an image to the chat is considered fast if it is uploaded within 5 seconds
- ● The system would experience an error when executing this functionality if a user writes a message longer than 500 UTF-8 characters, a message that is not UTF-8 characters, uploading an image that is larger than 30MB, have more than 500 active chats, and try to open multiple chats with the same user.
  - ○ The system would handle these errors by logging down the error that has occurred, preventing the message from being sent, and displaying an error message to the user. If the user would compose a message that is longer than 500 UTF-8 characters or a message that is not UTF-8 characters, then it would prevent the message from being sent. If the user tries to upload an image that is larger than 30MB then the system would prevent it from being sent. If the user would try to open a new chat if they already have 500 active chats, then the system would prevent them from opening a new chat. The system would also prevent the user from attempting to open a new chat with the same user. The system would also display error messages to the user after canceling their action. It would take 3 seconds for the error message to be displayed.