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# Product Backlog

### **Problem Statement:**

A common problem for college students and households is that they have a set of ingredients, but do not know what dishes can be made from them. Many times, people get bored of eating the same things and want to try out new dishes to expand their culinary options. Chef.ai tackles this problem by taking in a set of ingredients from the user and giving them the closest recipe that can be made using them. In addition to this, chef.ai would also give computer generated recipes using machine learning (generative models). These would be completely new recipes that we have never seen before.

### **Background Information:**

Usually college students and even households have ingredients and raw materials leftover with them. They are unable to think of recipes which use most of their leftover ingredients. Chef.AI will enable them to unleash the power of Machine Learning and use their ingredients to make new dishes. This not only enables them to use their ingredients (saving a lot of waste), but also allows them to taste new dishes thus expanding their culinary options.

We're keen to solve this issue because we've all faced problems while cooking when we don't know what to make with the set of ingredients we have. Usually this ends up in either throwing away the ingredients as they go unused or run to the grocery store to get other things. With such a product, this problem would be solved with the added advantage of cooking new things.

### **Environment:**

We will use HTML, CSS, Javascript, jQuery, Bootstrap and flask templating for the user interactions on the front-end. We are using Python (flask) for the backend. Scikit Learn and Tensorflow will be used to implement the machine learning algorithms and Orange will aid in testing and tweaking the same. Other python libraries such as NumPy, Pandas etc will all be used to manage the data sets.

## **Requirements**

### **Functional -**

<b>Backlog ID</b>	<b>Functional Requirements</b>	<b>Hours</b>	<b>Status</b>
<b>1</b>	As a user, I would like to be able to login into Chef.AI using Google credentials.	4	Planned for Sprint 2
<b>2</b>	As a user, I would like to be able to access the website as a guest.	2	Completed in Sprint 1
<b>3</b>	As a user, I would like to see the list of all recipes.	8	Completed in Sprint 1
<b>4</b>	As a user, I would like to see the pictures of respective ingredients on the recipe page.	6	Planned for Sprint 2
<b>5</b>	As a user, I would like to sort the recipes based on calories.	2	Planned for Sprint 2
<b>6</b>	As a user, I would like to sort the recipes based on proteins.	2	Planned for Sprint 2
<b>7</b>	As a user, I would like to sort the recipes based on sodium content.	2	Planned for Sprint 2
<b>8</b>	As a user, I would like to sort the recipes based on fat content.	2	Planned for Sprint 2
<b>9</b>	As a user, I will be able to sort both ascending or descending.	1	Planned for Sprint 2
<b>10</b>	As a user, I would like to be able to search for ingredients.	8	Completed in Sprint 1
<b>11</b>	As a user, I would like to see autofill while searching for ingredients.	8	Completed in Sprint 1
<b>12</b>	As a user, I would like to be able to delete selected ingredients.	4	Completed in Sprint 1
<b>13</b>	As a user, I would like to enter ingredients that I don't want in my recipe.	4	Completed in Sprint 1

<b>14</b>	As a user, I would like to select if I want preexisting or computer-generated recipes.	1	Completed in Sprint 1
<b>15</b>	As a user, I would like to see the closest pre-existing recipe when I select that respective option.	10	Planned for Sprint 2
<b>16</b>	As a user, I would like to see the closest computer-generated recipe when I select that respective option.	15	Planned for Sprint 2
<b>17</b>	As a user, I would like to use a navigation menu to change between different sections of the app.	4	Completed in Sprint 1
<b>18</b>	As a user, I would like to be able to share recipes.	2	Planned for Sprint 2
<b>19</b>	As a user, I would like to select a recipe and read it.	4	Completed in Sprint 1
<b>20</b>	As a user, I would like to be able to switch to between reading and cooking mode.	1	Planned for Sprint 2
<b>21</b>	As a user, I would like to be able to see highlighted steps in cooking mode.	4	Planned for Sprint 2
<b>22</b>	As a user, I would like to be able to go to next or previous step inside cooking mode.	2	Planned for Sprint 2
<b>23</b>	As a user, I would like to be able to go to home page after clicking the logo.	1	Completed in Sprint 1
<b>24</b>	As a developer, I would like to inspect my code, unit inspect my code, and inspect the design of my code.	100	In progress. Moved to sprint 2
	<b>Total</b>	197	

### Non-Functional-

Backlog ID	Non- Functional Requirements	Hours	Status
25	As a developer, I would like to learn how to set up local development environment using Flask.	4	Completed in Sprint 1
26	As a developer, I would like to learn Flask, orange and Tensorflow.	20	Completed in Sprint 1
27	As an administrator, I would like all the recipes to be selected from our data.	4	Completed in Sprint 1
28	As a developer, I would like to be able to parse recipe directions for training the model.	4	Completed in Sprint 1
29	As a developer, I would like to be able to train a probabilistic machine learning model to find closest recipes.	15	Planned for Sprint 2
30	As a developer, I would like to classify similar ingredients in separate clusters.	8	Completed in Sprint 1
31	As a developer, I would like to develop and design the application in such a way that additional features can be implemented without breaking existing features.	4	In progress. Moved to sprint 2
32	As a developer, I would like to design the application in such a way that it should be extremely simple to single out a broken feature of the app and repair it without affecting the normal functioning of the application and any of its features.	4	In progress. Moved to sprint 2
	<b>Total</b>	63	

## **Use Cases:**

### **Case: Google Login**

#### **Action:**

1. Click Google button
3. Input credentials

#### **System Response:**

2. Open Google login
4. Login user
5. Close Google login

### **Case: Guest Login**

#### **Action:**

1. Click Guest login button

#### **System Response:**

2. Redirect to Chef.AI landing page

### **Case: List all recipes**

#### **Action:**

1. Click the button

#### **System Response:**

2. Display list of pre-existing recipes

### **Case: Sort the recipes based on calories**

#### **Action:**

1. Click the calorie sort button

#### **System Response:**

2. Display the sorted list of recipes based on calorific value

### **Case: Sort the recipes based on proteins**

#### **Action:**

1. Click the protein sort button

#### **System Response:**

2. Display the sorted list of recipes based on protein value

### **Case: Sort the recipes based on sodium content**

#### **Action:**

1. Click the sodium sort button

#### **System Response:**

2. Display the sorted list of recipes based on sodium value

### **Case: Sort the recipes based on fat content**

#### **Action:**

1. Click the fat sort button

#### **System Response:**

2. Display the sorted list of recipes based on fat value

**Case: Sort the recipes in both order, ascending as well as descending**

**Action:**

1. Select the ordering option, either ascending or descending

**System Response:**

2. If ascending option is selected then recipes will be displayed in ascending order based on either calories, proteins, sodium or fat
3. If descending option is selected then recipes will be displayed in descending order based on either calories, proteins, sodium or fat

**Case: Search for ingredients**

**Action:**

1. Enter the ingredients in search bar

**System Response:**

2. It will autofill while entering ingredients

**Case: Delete selected ingredients**

**Action:**

1. Click on the cross sign next to ingredients

**System Response:**

2. It will delete the selected ingredients

**Case: Exclude particular ingredients**

**Action:**

1. Enter the ingredients

**System Response:**

2. Not Display those recipes which contains the entered ingredients

**Case: Select between computer generated and pre-existing recipes**

**Action:**

1. Click the pre-existing button
3. Click the computer generated button

**System Response:**

2. Display the closest recipe from data
4. Display the closest recipe generated by computer using ML algorithm

**Case: Share recipes**

**Action:**

1. Click the share button

**System Response:**

2. Recipe link will be shared

**Case: Select between read and cook mode.**

**Action:**

1. Click on read mode button
3. Click on cook mode button

**System Response:**

2. Open the recipe normally
4. Open the recipe in Cook mode where user can see the current step highlighted.
5. Can go to next and previous steps in cook mode

**Case: Redirect to home page**

**Action:**

1. Click on the Chef.AI logo

**System Response:**

2. Redirect to the Chef.AI home page