



Akshat Goyal, Ashvin Lohiya, Shreeyan Shayan, Vineel Guntupalli

Design Inpection,

Code Inspection and

Unit Testing Log

Design Inspection

Product	Chef.ai		
Date	February 11, 2018		
Author	Shreeyan Shayan		
Moderator	Akshat Goyal		
Inspectors	Ashvin Lohiya		
Recorder	Vineel Rao		
Defect #	Description	Severity	How Corrected
1	The home page would have two search bars, one which lists the ingredients the user wants, and one which the user does not want. If the user inputs the same ingredient in both, the results would not be correct.	2 (The app would still work, but the results would not be accurate)	Check the condition when submitting and display an error message to the user explaining that the same ingredient cannot be used in both. The user would then input the ingredients correctly.
2	If the user enters no ingredients in 'ingredients desired' and puts some ingredients in 'does not desire', it would result in the app to crash as there's no meaningful input.	1 (The app would crash as a result of this input)	Put a check while submitting if the number of ingredients wanted is 0 and the number of ingredients does not want is greater than 0. An error message would be displayed explaining the problem to the user.
3	Same template for both Computer generated recipes as well as pre-existing recipes caused problem related to formatting inconsistency.	3 (The app would not crash, recipes will still be displayed)	Create separate template for both Computer generated recipes as well as pre-existing recipes. Check whether the user has requested a computer-generated recipe or pre-existing recipe using a

			flag variable in the json returned
4	There are thousands of recipes. Displaying all recipes on the same page make it way too long and decreases the responsiveness of the application.	1 (The app would not crash but it will become less responsive and slow)	Instead of displaying all the recipes on same page. Split the recipes into multiple pages which will make it more readable and will not decrease the responsiveness of the application.
5	The ingredient input interface was fixed in size. Due to this, user was unable to see some of the previous ingredients they entered.	3 (The user won't be able to delete/see previously entered ingredients)	Make the interface dynamic size so as the user can see through all selected ingredients.

Code Inspection

Product	Chef.ai		
Date	February 11, 2018		
Author	Ashvin Lohiya		
Recorder	Akshat Goyal		
Defect #	Description	Severity	How Corrected
1	NumPy methods were not behaving in the correct manner. There was no error caught, but the results were incorrect.	1 (There were incorrect results)	All normal python arrays were changed to numpy.array. This fixed the problem as many numpy functions work properly only on numpy arrays.

2	String comparison was not returning true as the verbs and nouns (from the recipes) being parsed were in different cases.	2 (Training data became inaccurate)	All strings being parsed were first converted to the lower case using string.lower() method and then only they were compared.
3	Same name for two different "id" caused functionality problem.	2 (Id with same name didn't work properly)	Checked and made sure that different ids have different name
4	Update variables in a couple of loops were not indented correctly and as a result went into infinite loops or terminated instantly	1 (The loops were not working as desired)	The indentation of all the loops was manually checked and corrected according to the logic of the code.

Unit Testing Report

The System relies on the following modules:

- Parsing
- Ingredient Clustering
- Probabilistic direction generating model
- Probabilistic ingredient generating model
- Login page
- Ingredients page
- All recipes page
- Recipe template

Login Page

Login Page is the primary page that allows users to log in to their account using Google API or allows them to access the application by entering as a Guest User. Once logged in successfully, the application redirects the user to the main ingredients page.

Product	Chef.ai		
Module	Login Page		
Date	February 11, 2018		
Author	Vineel Rao		
Recorder	Shreeyan Shayan		
Defect #	Description	Severity	How Corrected
1	Username in the <Hello 'username'> label on the main ingredients page is always empty for a guest user and thus just shows <Hello "">	3 (Minor UI defect. Does not affect the functionality of the application in any way)	username variable was initially set to an empty string and was later updated to the user's name after google login. For a guest user it was left unchanged. Initializing it to "Guest" instead of an empty string solved the issue. Now it shows <Hello Guest> for a guest user.

Ingredients page

Ingredients page is the main landing page which contains the two search bars for users. One to include all the ingredients they want in their recipe and one to exclude any ingredients from the recipe. In addition to this, the page also provides users an option to choose between computer generated or pre-existing recipes. After entering the input into the form fields, the user can click on the submit button and then the application will redirect the user to the recipe template page to show the steps of preparation for the recipe.

Product	Chef.ai
Module	Ingredients Page
Date	February 11, 2018
Author	Shreeyan Shayan

Recorder	Vineel Rao		
Defect #	Description	Severity	How Corrected
1	User enters a non-existing ingredient and presses submit. Submit does not check for valid input in the search bar and returns the form input. Python function uses this invalid input and thus crashes the program as this ingredient does not exists.	1 (The application crashes due to invalid input from user)	Form input cannot be submitted until all input ingredients are valid ingredients from our dataset.
2	User was able to choose both pre-existing and computer-generated recipe due to use of a checkbox for the type of form which allows multiple selections. This caused the program to function improperly.	2 (Application functions inaccurately)	Use a radio button instead of a checkbox to only allow selection of one option.

All Recipe Page

All Recipe page displays the list of all available recipes from our dataset. It shows a subset of all the recipes at a time. The user is provided with a next and a previous button at the bottom of the page to allow him to view the next or previous list of recipes respectively, if available. It also allows the user to click on any of the recipe to view the detailed instructions for preparation of the recipe on a separate recipe template.

Product	Chef.ai
Module	All Recipe Page
Date	February 11, 2018
Author	Vineel Rao

Recorder	Shreeyan Shayan		
Defect #	Description	Severity	How Corrected
1	Clicking on next page does not return the next set of recipes.	2 (The application functions incorrectly but does not crash)	A local variable i which was used for iterating the set of recipes was being initialized to 0 each time when next page was clicked. Making 'i' a global variable solved the issue.
2	If a call to get all recipes returns zero recipes. Python program crashes due to empty json array.	1 (The application crashes due to a missing check for an empty array.)	Checking for an empty json array.

Recipe Template

The Recipe page displays the steps of preparation of a recipe generated using machine learning models or from our pre-existing list of recipes.

Product	Chef.ai		
Module	Recipe Template		
Date	February 11, 2018		
Author	Shreeyan Shayan		
Recorder	Vineel Rao		
Defect #	Description	Severity	How Corrected
1	If the json object is empty during redirection to the recipe template page, the app crashes.	1 (The application crashes due to a missing check for an empty json object.)	Added a check for an empty json object before displaying content.

Parsing

The parsing module is a crucial part of the machine learning component of this app. The recipe data available is very unorganized and it is the job of this module to clean the data for training. A lot of feature engineering is also happening in this module.

A key use of this module is to parse the recipe directions provided in the dataset into corresponding cooking verbs and nouns which will help us train our model to produce computer generated recipes.

Product	Chef.ai		
Module	Parsing		
Date	February 11, 2018		
Author	Akshat Goyal		
Recorder	Ashvin Lohiya		
Defect #	Description	Severity	How Corrected
1	If any step in the directions of a recipe does not contain a noun associated with the cooking verb, the module started assigning verbs from that sentence to nouns of the following sentences.	2 (The whole subsequent training data became inaccurate)	Discarded the verb if the no corresponding noun is found by the end of the sentence.
2	There were empty gaps in the parsed recipes due to some sentences not having any cooking verbs or nouns at all.	3 (The model treats an empty index in directions as a step)	Before adding a verb-noun pair to parsed directions, checked whether the tuple is empty or not.
3	Multiple verbs and nouns in a sentence were causing some verbs to get associated with the wrong nouns.	2 (This leads to inaccurate)	Associate the last verb found to the first noun found and so on. This solution however still causes some problems.