SFU SIMON FRASER UNIVERSITY

CMPT-985 HCI Project Proposal Part 3

Final Prototype and Demo

CulinaryHub

Team 5

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Problem Statement & Core Tasks Involved

The pandemic has forced a lot of people to stay indoors and be self-sufficient for all day-to-day activities. We are developing a remote learning-enabled Mobile application for novice users who want to learn or explore cooking. The application is easy to navigate and simple to use which covers all the basic needs involved in cooking. Not everyone knows how to cook or what to use while cooking and therefore, our application is designed to help such people with all their culinary needs.

The proposed application, Culinary Hub, includes unique features like scanning of the inhouse ingredients for **Search Recipe**, **personalized Live-Learning sessions** with instructors for different cuisines and a **Smart Scan** option for choosing the best ingredients for your dish along with a chat assistant to enable you to ask questions to elevate your cooking experience. The new designs embedded in the application leverages the available mobile device hardware through the use of cutting edge technology to help make the lives of our users simple and easy through these intuitive and interactive navigations to cook their favourite dish.

So the following are the tasks the application focuses on:
Task 1 -> Search Recipe
Task 2 -> Live Learning
Task 3 -> Smart Scan

Design rationale for change made to the design/navigation from Part 2

To improve the appearance and workflow logic of our app, we made the following changes to our overall design.

We mainly have added the vertical prototyping changes to the live learning task and the smart scanning application by having a minimalistic design approach followed. To make the overall screens look consistent and pretty, we ensured uniform size and colour to words, sections, bars and tags in each screen through the use of the components and colour palettes in Figma. We introduced colour blocks on our elements such as buttons and tags to make them distinguishable and understandable. We added gifs to show the sample realistic view for scanning functionality and live learning functionality so that users understand what to expect if they truly use our application.

To simplify the workflow of our app, we deleted the stop scanning button and voice assistant button in the smart scan screen because we think they are redundant. We simplified the searching functionality for searching instructors with a drop-down filter menu so that users can get a list of qualified instructors for a particular cuisine by simply

selecting some options. We also removed the profile preferences in the filtering section of recipe selection as there is no login page or preferences accepted from users in the current application. Also, the dropdown for the recipe selection filters is much more simplified now with just one interaction(owing to the limitation of figma highlighted in the README) to enable easier navigation during recipe search.
To improve the accessibility needs support, we added voice recognition functionality to most search bars in our app. We solved the navigation issues that were reported in part 2 of our project. Now each screen is logically connected so that users can navigate to each screen they intend to smoothly. Finally, we have now given the application an iPhone 11 Pro/X mobile phone frame making the application more realistic for a mobile application prototype targeted in the current scope of the project.

UI design principles considered for improving the final prototype

We considered Neilson's Heuristic Design Principles and Graphic Design principle C.R.A.P. while improving our final prototype. Following are the listed principles and their usage in our prototype.

- **Visibility of system status**- The principle suggests that users must be informed about what is going on in the system and users should be provided with feedback.
  Example in the prototype: In Task 2 Live-Learning, the app shows the message if the video is being recorded or if the person is on mute. Similarly, in Smart Scan of Task 3, the user is provided with feedback on which ingredients are fresh.

- **Match between the system and the real world-** The app uses the generally spoken language by people in their daily life to communicate the message. Also, icons that are used in the design of the application are the ones that people are used to seeing or using in the real world mobile applications of today's world.

- **User control and freedom-** Users should have the options to undo, cancel or redo in actions. In our app, users can remove ingredients after adding/scanning from a live ingredient scanning in Task 1. Further. users can also add or clear filters for more control. Also, the user can at any point in the application, is provided with enough freedom and options to return to the main task page and at no point be stuck on the current page.

- **Consistency and standards-** We created Components, Colour Palette in Figma to maintain internal consistency within the application prototype. Also, all the screen sizes and layout is kept consistent. Similarly features like horizontal

scrolling of recipe options in task1 is kept to the right as a general standard used in other applications as well.

- **Error prevention-** In task 2, to prevent users from accidentally leaving the live session, a confirmation message is asked from the user if he/she is sure about leaving the session. Also, the default option or recommended action is highlighted to encourage the user to select the correct option.
  Example in the prototype: button with the Submit option is highlighted in the app.

- **Recognition rather than recall -** in Task 1, users need not type ingredients as they are recognized by the scanner and added. In Task 3, the Smart Scanner detects the name of the item being scanned and the user need not recall or type the name of the item.

- **Flexibility and efficiency of use-** Users have the freedom to navigate to any task in the app. For this, the Bottom Navigation tab for shortcuts to various tasks is kept consistent. Also, a back button has been added wherever it is required.

- **Aesthetic and minimalist design -** A good screen layout should not have too much information that is overwhelming for the users. We ensured proper spacing between the content and kept only essential functions using separate overlays and screens.
  Example in the prototype: In Task 3, chat is opened on a different screen and in Task 1, filters are in a separate overlay.

- **Help and documentation:** Tips are provided to explain the functionality wherever required.
  Example in the prototype: In Task 1 when the user selects the recipe, we have provided a Tip to view alternative ingredients. In Task 3, the user is given the tip to indicate fresh items from the smart scan.

Here is the reference to the CRAP principles for the UI designed.

- **Contrast** - Adding the contrast is the most important aspect of the design and for the design of our application, we have ensured that is followed. Here are some of the screen elements that we have taken care to add contrast:
  - ➢ Colours - We have made use of the colour palettes to highlight each of the core tasks/functionality by highlighting it in pink. The recipe details section is again highlighted in green for important sections in it. Also, the Join Session button is highlighted with Salmon colour.

- ➢ Fonts - We have used a variety of fonts to show different types of information. For eg, the Main Heading, Tip, etc have different fonts to capture the attention of the user. Different font styles and highlighting are used (placing in a rectangle placeholder, underline, etc) to serve the different purpose.

- ➢ Spacing between elements - The spacing between elements too have been provided in our application to create a clear distinction between different elements on the screen.

- **Repetition** - We have made use of repetition everywhere in the design to ensure that there is a good amount of similarity while working your way in the application. The font is the same for all the headings and the test following that. We also make use of the repetition while checking for the instructors available for the different cuisines in the Live learning task.

- **Alignment** - We have made use of the alignment principle too when we have written the names of the recipes on the recipe selection page and also at places where we have mentioned the instructor name and the cuisine in which they expertise. Mostly these details are all left-aligned in our application.

- **Proximity** - This principle ensures that we provide the critical cue regarding the items being related or not. We have ensured this principle is taken care of when we designed the recipe selection page by grouping various recipes to help users to see organised information, thus reducing clutter and giving the user a good amount of visual clues to help them understand the meaning of what's being suggested to cook.