Project Plan Presentation
AI Recipe Converter

The Capstone Experience

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Functional Specifications

- Simplify user cooking experience by providing machine assisted cooking
- Recipes from popular cooking websites are converted to a machine-understandable format
- Users can access a website to modify existing recipes or create their own
Design Specifications

• Browse Recipes
  ▪ Location for recipes that users can explore
  ▪ Allow users to filter recipes using keywords

• Add/Edit Recipe
  ▪ Allow the user to add and edit their own recipe details to be displayed on the cooking page.

• Recipe View
  ▪ View list of recipes and view recipe instructions in human-understandable format.
Screen Mockup: Recipe Search

![Whirlpool Recipe Generator](image-url)
Screen Mockup: Recipe Info Page

Fluffy Pancakes

Description
This pancake recipe makes light and fluffy pancakes, perfect for a weekend brunch

Time: 15 mins
Start Cooking

Ingredients
- 1 cup Flour
- 2 tsp Baking powder
- 2 Tbsp Sugar
- 0.5 tsp Salt
- 0.5 cup Milk
- 1 Egg
- 1 Tbsp Butter

Steps
1. Mix Dry Ingredients
   Mix 1 cup of Flour, 1 tsp of baking powder, 2 Tbsp of Sugar, and 0.5 tsp of Salt in a bowl
Screen Mockup: Add Recipe

[Image of a Whirlpool Recipe Generator screen mockup with sections for Ingredient 1, Step 1, and add media options for title, description, media type, cook time, timer value, step type, and temperature.]
Screen Mockup: Add Recipe Cont.
Technical Specifications

- Python web scraper for pulling recipe information from cooking websites
- A python NLP parser is used to identify the ingredients type, quantity, temperature, and cooking time
- Frontend webapp for viewing and editing recipes
- MongoDB is used to store recipes
- AWS EC2 is used to host webapp
- AWS Lambdas are used to run the web scraper and parser
System Architecture

Recipe Websites

Python NLP Parser and Converter

Python Web scraper

Database

Server

API

AWS

Front-end

Angular

Whirlpool App

Smart Devices

User Devices

Whirlpool

Whirlpool

Recipe Websites

Python NLP Parser and Converter

Python Web scraper

Database

Server

API

AWS

Front-end

Angular

Whirlpool App

Smart Devices

User Devices

Whirlpool

Whirlpool
System Components

• Hardware Platforms
  ▪ Laptop/Mobile Device for UI
  ▪ Whirlpool cooktop

• Software Platforms / Technologies
  ▪ Angular
  ▪ AWS
  ▪ Express
  ▪ MongoDB
  ▪ NodeJS
  ▪ Python
Risks

- Natural Language Processing
  - The theory of natural language processing is complex
  - Investing research done by Stanford on natural language processing of recipes to understand and guide our approach
- Web Scraping
  - Non-uniform html locations on linked websites
  - Look into using regular expressions to find similar storage locations
- Testing Software
  - We do not have access to the hardware
  - Possible hardware access or remote trials in discussion with Whirlpool
- Lack of Training Data
  - Natural language processing requires a large amount of training data
  - Discuss with appropriate faculty and reference Stanford study source on NLP
Questions?