

MICHIGAN STATE

U N I V E R S I T Y

Project Plan Fresh-ipes

The Capstone Experience

Team Meijer

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*From Students...
...to Professionals*

Functional Specifications

- Simplify shopping experience using Amazon Echo Show
- Determine household ingredients based on shopping history
- Suggest recipes based on household ingredients
- Create shopping list of missing ingredients or frequently bought items that are low



Design Specifications

- Interface to plan meals and purchase ingredients
- Recipe Box lets user search and save recipes
- My Pantry records currently owned items
- Shopping List has a custom list, needed ingredients, and commonly used ingredients
- Complete shopping lists using Meijer Curbside and Delivery



Screen Mockup: Echo Show

The screen mockup features a red navigation menu on the left with the following items: Username (with a white 'M' icon), My Pantry, Shopping List, Planned Meals, Recipe Box, Suggestions, Favorites, and Search. The main content area displays three recipe cards. The first card shows a Chicken Pot Pie with a red caption: '1. Chicken Pot Pie 75% ingredients in pantry'. The second card shows Hot Dogs with a red caption: '2. Hot Dogs 20% ingredients in pantry'. The third card shows Applesauce with a red caption: '3. Ap 10%'. At the bottom of the screen, there is a red text prompt: 'Try "Alexa, show me more."'.



Screen Mockup: Echo Show



Chicken Pot Pie

Servings: 2

Ingredients:

1 Chicken Breast
Pie Crust
4 Large Carrots

1 Bag of Frozen Peas
3 Stalks of Celery
1 Quart of Milk

Instructions:

Step 1: Preheat oven to 400 degrees Fahrenheit.

Step 2: Chop vegetables and chicken into palatable sizes.

Step 3: Coat pie pan with nonstick spray and layer with the pie crust.

Step 4: Brown chicken on the stove.

Step 5: Pour milk into pie, then all other ingredients.

Step 6: Cover with remaining pie crust and bake for 30 minutes.



Screen Mockup: Echo Show

The screen mockup features a red sidebar on the left with the following menu items: **M** Username, My Pantry, Shopping List, Planned Meals, Recipe Box, Suggestions, Favorites, and Search. The main content area is divided into three sections: 'My items:' containing 'Paper Towel' and 'Coffee Filters'; 'Needed items for meal plan:' containing a list of items with plus icons: Carrots, Celery, Apples, Pie Crust, Hot Dogs, and Hot Dog Buns; and 'Frequently purchased items:' containing 'Folger Dark Roast' and 'Milk'. On the right side, there are four red buttons: 'Place a Delivery Order', 'Place Pickup Order', 'Send to my phone', and 'Share on Social Media'. At the bottom, a red text prompt reads: 'Try "Alexa, add toilet paper to my list."'.

M Username
My Pantry
Shopping List
Planned Meals
Recipe Box
Suggestions
Favorites
Search

My items:
Paper Towel
Coffee Filters

Needed items for meal plan:
+ Carrots
+ Celery
+ Apples
+ Pie Crust
+ Hot Dogs
+ Hot Dog Buns

Frequently purchased items:
Folger Dark Roast
Milk

Place a Delivery Order

Place Pickup Order

Send to my phone

Share on Social Media

Try "Alexa, add toilet paper to my list."



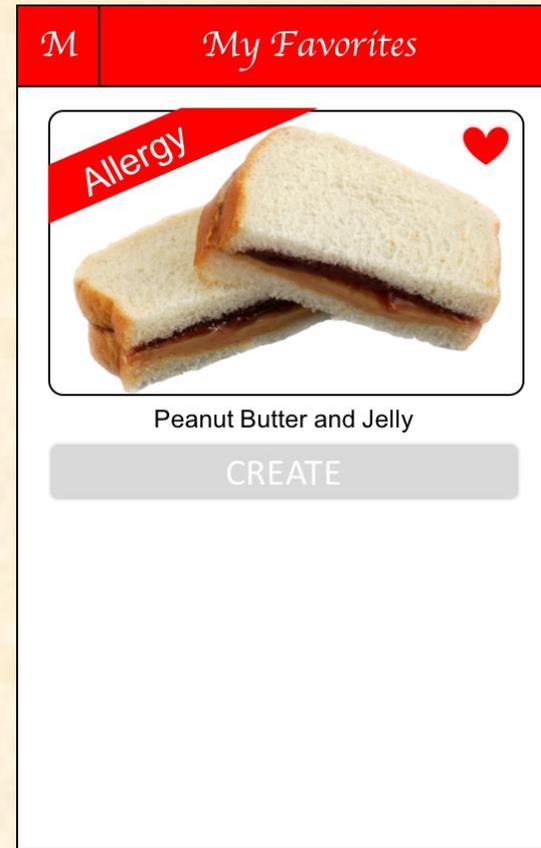
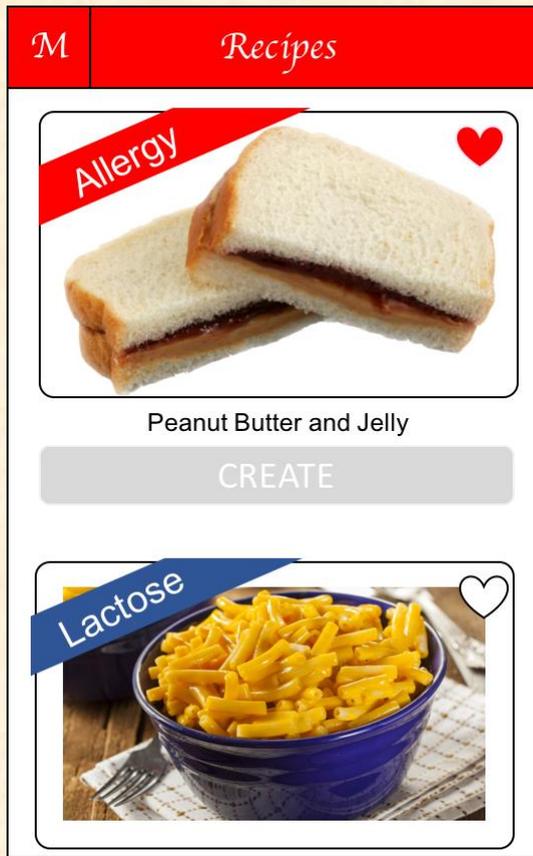
Screen Mockup: iOS/Android

M	My List	
	Butter	-
	Milk	-
	Eggs	-
	New Item	+
<i>Recommended</i>		
	• Kiwi	-
	• Butternut Squash	-
	• Star Fruit	-

M	My Pantry	
		Milk (Vitamin D) + -
		Beef + -
		+

		<
My Pantry		
Recipes		
My Favorites		
My List		
My Account		⚙️

Screen Mockup: iOS/Android

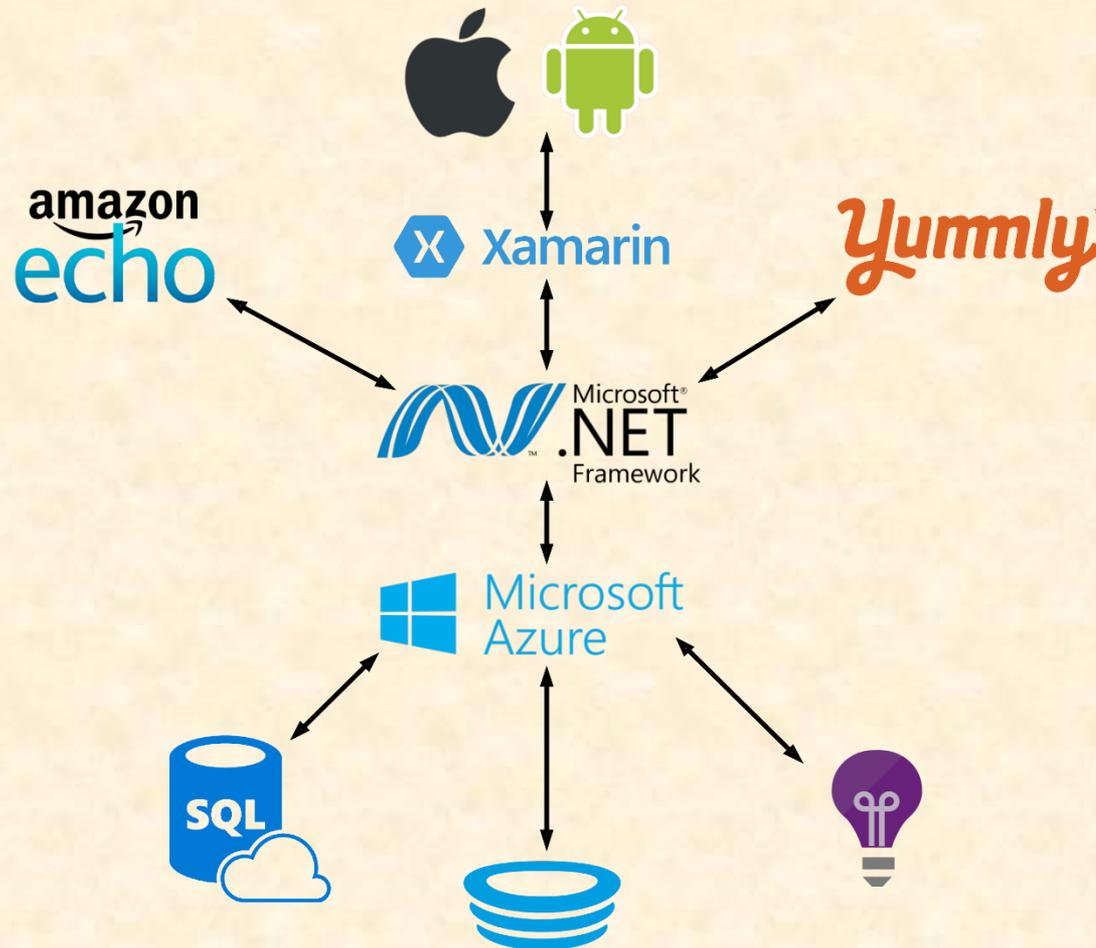


Technical Specifications

- .NET Framework
 - Class library and CRL
- Alexa Skills Kit
 - Invocation, intents, utterances
- Xamarin
 - C# codebase for Android and iOS
- Azure
 - SQL Server
- Yummly
 - Recipe API



System Architecture



System Components

- Hardware Platforms

- Amazon Echo Show

- Voice recognition with touch screen



- Software Platforms / Technologies

- Android

- iOS



Testing

- Azure



- Hockey App

- Controlled deployment of app



- Insights for Analytics

- Detect trends of user problems



Risks

- Data Integration (high)
 - How to normalize 20,000 line text file into database
 - Work with Meijer to ID key info and create database
- Sync state between Echo Show and mobile (medium)
 - How to properly sync data simultaneously between platforms
 - Get the Echo show working first before integrating mobile
- Integration with mPerks/Curbside and Delivery (medium)
 - How to integrate with Meijer proprietary software
 - Work closely with Meijer and ask a lot of questions
- Limited Echo Show UI options (medium)
 - UI options in Echo Show are limited to Amazon interface templates
 - Change UI design to accommodate limitations or find other templates



Questions?

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