

Recepticon

The recipe optimizer



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Problem Definition

Motivation

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

Budgetary Needs



Nutritional Goals

Personal Taste Preferences



Time for shopping and cooking



User Profile

- People who are responsible for feeding themselves and/or others
- Who care about what they eat
- And how what they eat impacts
 - Budget
 - Happiness
 - Time
 - Overall well-being
- Want to leverage the power of data to improve how and what they eat every day.

Impact

- Saves people time
- Saves people money
- Gives users more and better meal options
- Allows users to keep track of full history of diet
 - Potential medical benefits (identify allergies food recalls etc.)
 - Track nutritional performance and achieve nutritional related goals

MVP preliminary design

Home
Account Settings
Recipes ▶
Grocery List
Analytics
Help
Saved recipes: Chicken Enchiladas Pancakes

Recipe Optimizer

This is where you can rely on our system to hand-pick recipes from our database that match your budget, nutrition, and personal taste. As a default, the optimizer will provide recipes that can be constructed with items in your current grocery list. Experiment with the multiple filtering options to see how different recipes suit your needs.

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Meal Type ▼

Cook Time ▼

🔍 Search...

Optimize by:

- ☒ Budget
- ☒ Nutrition
- ☒ Personal Taste
- ☒ Cooking Time



Spicy Grilled Cheese Sandwich

98%



74%



99%



35%



Learning Goals

- Match user grocery list with ingredient items
- Generate list of recipes available based on groceries and pantry items
- Rank recipe items based on user preferences and criteria
- Recommend further recipe items or substitutes based on nutrition or cost priorities

Exploring & Evaluating the Data

- Many available datasets available, multiple options based on needs
- Many paid services for easy app development
- Chose data set based on size and included variables
- Data set includes ~20k recipes with ~3700 ingredients
- Clean names of ingredients based on similar meanings (eg. sliced onions vs onions)

Initial Recommendations Attempt

Meal type:
breakfast

Grocery list:

- Apples
- Bread
- Cheese
- Egg
- Chicken
- ''

Nutrition
requirements:

- 450-550 kcal
- Protein >20g
- Sugar <10g

Filtering

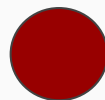
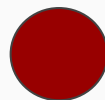
Options	Kcal	Protein	Products to add
Turkey Hash	461	21	[gold potatoes, cooked turkey]
Gruyère Potato Gratin	445	24	[potato]
Chicken Paprikas	463	59	[chicken broth, paprika, sour cream]
Smoked Salmon and Dill Matzoh Brei	434	22	[smoked salmon, matzo, dill]
Ham and Swiss Cheese Frittata	402	25	[swiss cheese, cooked ham, chopped green bell pepper]
Cowboy Christmas Breakfast	410	24	[sausage, scallion, cheddar]

We get numerous options,
which we're going to order
based user's preferences

In most recipes there's a few
additional ingredients, which
we can suggest to add to the
grocery list or ignore

Issues & Questions

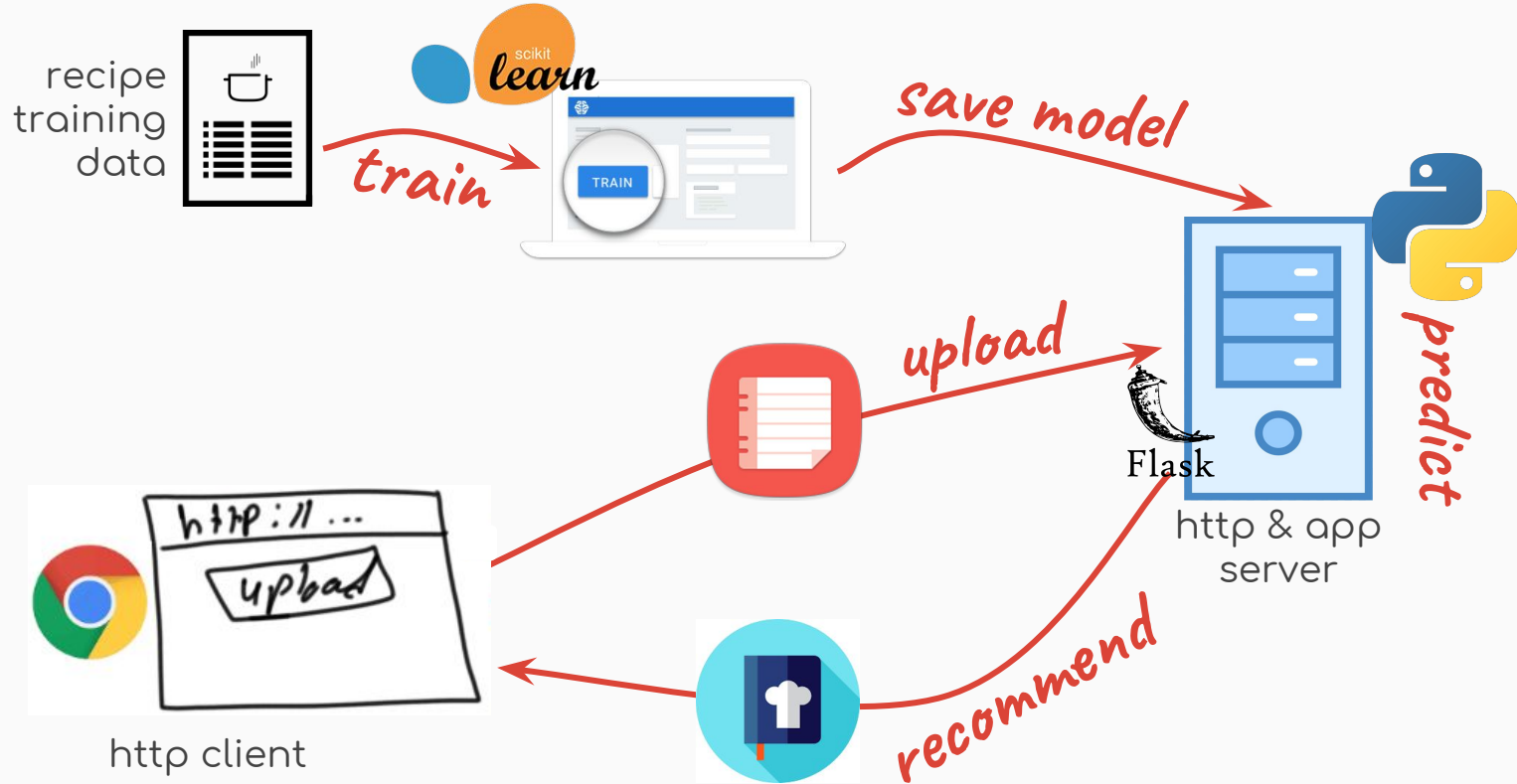
- **Unclean datasets:** typos, incomplete nutrition and ingredient information
- **Repetitive ingredients:**
e.g. chicken is represented under >20 different names
- **Replaceable** (e.g. ~50 types of cheese in recipes) **and non-key ingredients** (parsley, spices, etc)
- **No snacks and fresh products in the recipes**
- **Align product names from shopping cart (incl brand names) to ingredients**



chicken
chicken pieces
chicken breasts
boneless skinless chicken
breasts whole chicken
chicken breast halves
boneless chicken breast halves
diced free-range chickens
organic chicken
...

'manchego cheese',
'pepper jack cheese',
'cream cheese with chives',
'jack cheese',
'string cheese',
'chihuahua cheese',
'farmer cheese',
'stilton cheese',
'cream cheese',
'crumbled blue cheese',
'aged manchego cheese',

Approach



Work Plan and Next Steps

w6	w7	w8	w9	w10	w11	w12	w13	w14
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App Feature Definition

Model Design

Model Sprint 1

Model Sprint 2

EDA

Data Cleanup

UX Design

Front-end Sprint 1

Front-end Sprint 2

Back-end Sprint 1

Back-end Sprint 2

Fine tuning/bug fixing

Final Preso