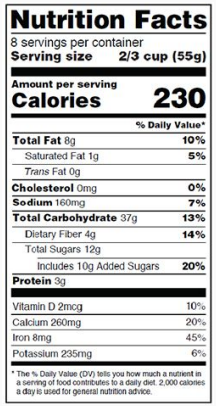
Recepticon

The recipe optimizer

Veronika - Chet - Andrew - Alberto

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

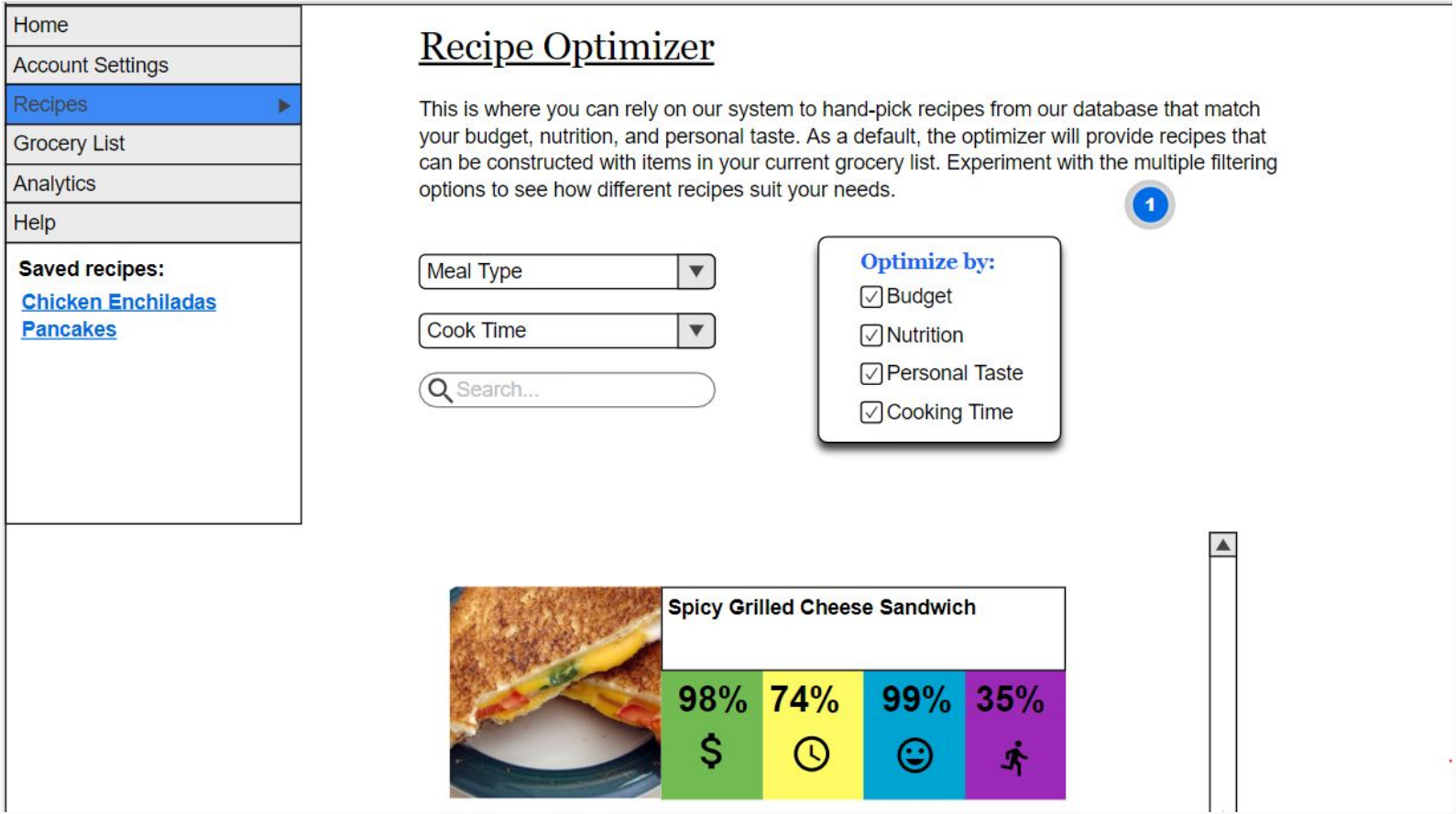
User Profile

- 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



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

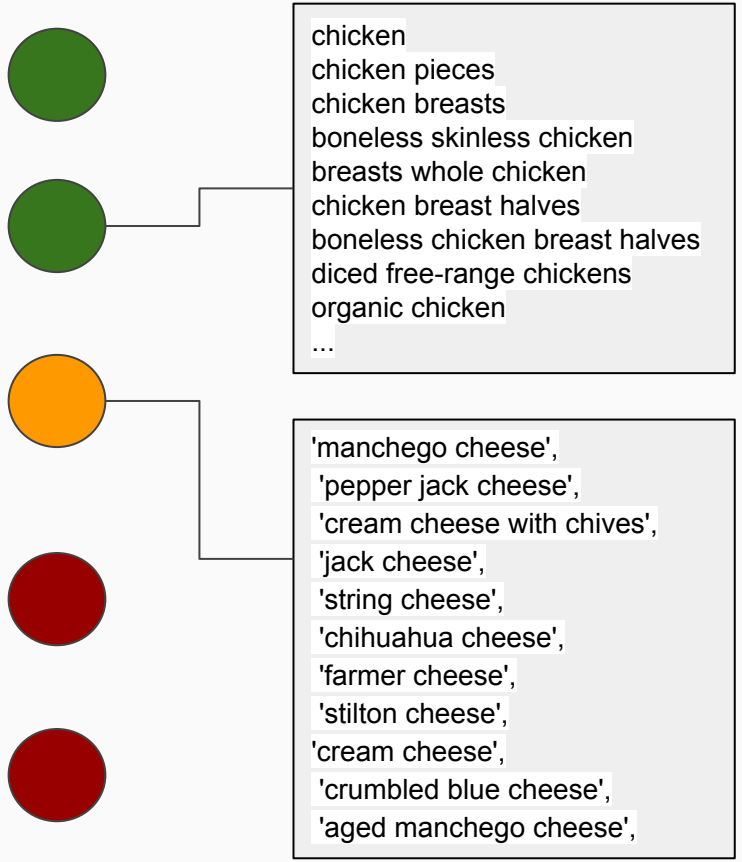
Options	Kcal	Protein	Products to add
Turkey Hash	461	21	[gold potatoes, cooked turkey]
GruyÃ¨re Potato Gratin	445	24	[potato]
Chicken Paprikas	463	59	[chicken broth, paprika, sour cream]
Smoked Salmon and Dill Matzoh Brei	434	22	[smoked salmon, matzo, dill]
Ham and Swiss Cheese Frittata	402	25	[swiss 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

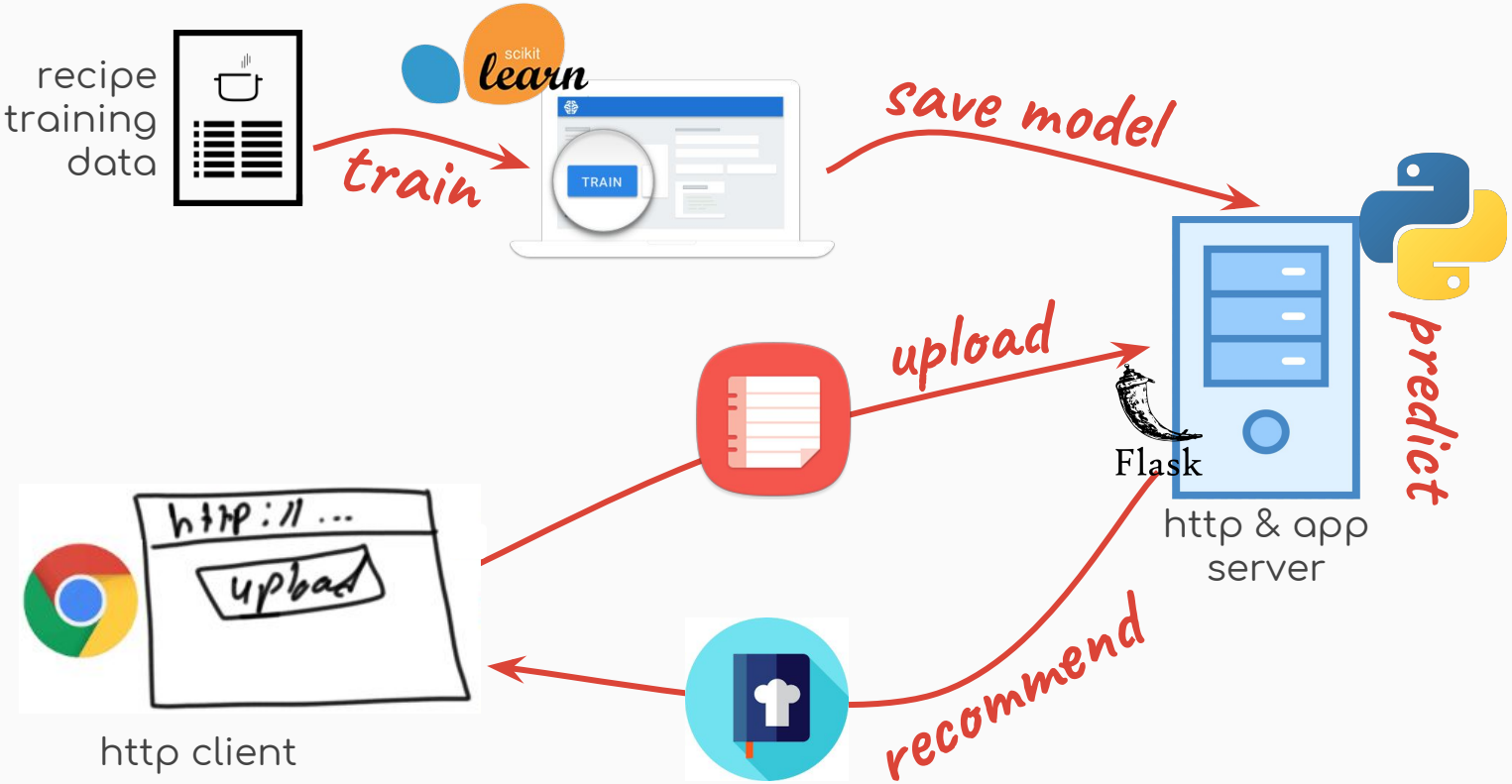
In most recipes there's a few additional ingredients, which we can suggest to add to the grocery list or ignore

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



Approach


recipe
training
data
scikit
learn
train
TRAIN
save model
predict
upload
Flask
http & app
server
http://...
upload
http client
recommend

Work Plan and Next Steps