

Valerie Chang: vchang2@stanford.edu  
Ryan Matsumoto: rmats414@stanford.edu  
Adam Young: adamy@stanford.edu  
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## Project Proposal - *Grub!*

### **Abstract**

Ever have ingredients/leftovers lying around the house and not sure what to do with them? Well now *Grub!* is the site to go to, to explore all the different possible meals that can be made coming just from those ingredients. Unlike other recipe sites, *Grub!* allows users to look up meals to make based on the ingredients and quantities they have. *Grub!* also allows users to personalize and maintain their own cookbooks of different recipes they have come across. Users are also allowed to upload recipes ideas they have as well as comment and review recipes.

### **Need for Product**

*Grub!* has a few features that haven't been seen in other competitors that would have a great impact on the cooking community.

#### Online Personal Cookbook

*Grub!* allows people to manage their own cookbook, or a personal organizer for recipes they enjoy or might want to come back to. This is helpful for people who don't like to have cookbooks or papers all around the house, because it can be hard to find things and keep things organized. Also, it will be easier to share and distribute recipes to friends, rather than making photocopies of the recipe. Now everything can be done online and people can keep track of the recipes they like and want to revisit, or make note on recipes they might be interested in cooking in the future.

#### Leftover Ingredients

It is common to have leftover ingredients from cooking meals for the family, a big social event, or even just for yourself. Often times we let the leftover scraps pile up in our fridge, and we aren't quite sure what to do with them. The majority of the time it ends up going to waste and being thrown away, but now people can go onto the website *Grub!* This allows users to enter in any main ingredients and quantities they have in order to find a dish or recipe they could be interested in making. *Grub!* promotes people to stay in to cook their meals rather than eating out, and it also provides potential meals to be made from leftover ingredients.

### **Description of Project**

*Grub!* is a multi-faceted website designed to improve the experience of sharing and finding recipes. There are four main ways users may interact with *Grub!* First, a user can upload recipes for others to find. This of course means that users may search for these recipes, and may do so in a variety of useful ways. Discussion and rating of these recipes will allow for users to interact with one another, improve on recipes, and make it even easier to find the perfect recipes for them. Finally, saving recipes in useful and intuitive ways will allow for them to be found at a later date, and can also be used to facilitate future planning.

All of the recipes available on *Grub!* will be provided by the user base. Each recipe includes the following elements:

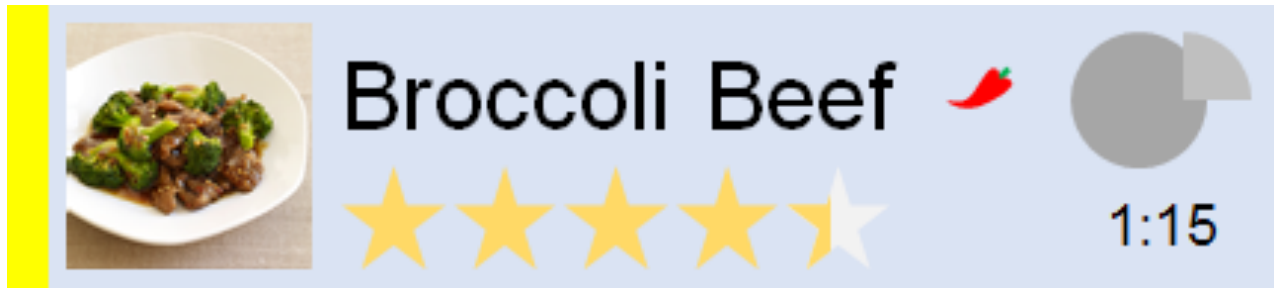
- Name of the recipe
- A short description
- Ingredients and quantities
- Instructions to complete the recipe
- Time needed to complete the recipe
- Number of servings the recipe makes
- Spicy (yes or no)
- Difficulty of the recipe
- Photos of the completed recipe
- Tags or groups describing the recipe

All of these items are either vital descriptions of the recipe or elements which make it easier for other users to find the right recipe for them. Those eager to share their food-based formulas with the world should have an easy time doing so with *Grub!*

While uploading recipes is a fairly straightforward procedure, providing ways to search for these recipes is truly one of the core aspects of this website. There are a number of different needs a user could have when searching for a recipe and *Grub!* caters to several of them. Here might be an example of a user doing simple search. Billy knows he wants to make soup, but isn't sure what to do beyond that, so he searches for soups. He's confident in his cooking abilities and doesn't want anything too simple, so he eliminates novice recipes. He sees that most soups aren't spicy, but a few of them are and that sounds good to him, so he chooses to filter out anything not marked as spicy. A lot of the remaining soups are made in a slow cooker and take hours to complete, and Billy is impatient, so he narrows the search to anything which can be completed in a half hour or less. From what remains, Billy quickly inspects a few recipes before deciding on a highly-rated hot and sour soup.

The most powerful aspect of finding recipes is the ability to include ingredients as a part of the search. Separate from the standard search bar is a field where users can enter ingredients to help filter their searches, in one of three modes. Users can search for recipes which must use some of the specified ingredients, or specifically all of the specified ingredients. If a user has ingredients which are about to expire, if their local supermarket is having a sale on a handful of items, or if they're simply looking for a food item with a particular ingredient, one of these two options would prove quite useful. The third option is to search for recipes which include only ingredients explicitly listed, and gives the user the ability to enter limits on ingredients as well. This mode could prove useful in a situation where the user only has a small number of ingredients at home and wants to make something without buying anything else. This ability to search for ingredients opens *Grub!* to a new level of usefulness.

When a search is entered, the results will be displayed in a list or grid, with each recipe displayed on a tile like this:



The objective of the tile is to deliver pertinent recipe information clearly and, where possible, graphically. Clearly shown are the name of the recipe, its rating, a photo, and a pepper image for spicy recipes. The colored stripe on the far left indicates the difficulty of the recipe, this one being yellow for intermediate. The right side of the tile displays the time the recipe takes to complete, and above it a graphical representation of that amount (a full circle for an hour, and a quarter circle for 15 minutes). This gives a quick overview of all of the most vital information needed to choose, but not complete, a recipe. From here, a user can click on a tile and below it will appear more information, such as a short description and its tags. The user can also navigate to a dedicated page for this recipe, which includes all of its associated information.

One item displayed exclusively on the dedicated page for a recipe is the comment section. Users may rate other recipes and add their thoughts. If users have suggestions to tweak a recipe, wish to share stories of their experience making it, or have any other words they wish to express, the comments is the place to do it. Another social aspect of the site is that users can follow one another. This will allow the followed profile and its recipes to be found more easily, and the follower will receive notifications when new recipes are added by their favorite chefs.

Finally, users have the ability to build cookbooks from recipes they add or find. A cookbook can serve as a way of storing favorite recipes, and the use of multiple cookbooks or sections within cookbooks can further organize a user's recipes. A cookbook might also be made for a specific event, for example a wedding or a party, as a way of keeping everything in one place. Another useful feature is that a shopping list can be generated from a cookbook. If a user creates a cookbook of all the recipes they want to make and the quantities of those recipes, a list of all ingredients they will need can be compiled into a single convenient list. If a user can find recipes for an entire week and make a cookbook out of them, they can instantly receive a shopping list for the week.

## **Other Benefits of *Grub!***

### Cheaper and Healthier

Studies have shown that eating out is costly and generally unhealthy compared to home-cooked meals. According to the European Journal of Clinical Nutrition, "you end up taking in an average of 200 more calories than if you eat at home." *Grub!* can get people excited about finding new recipes and dishes to cook with ingredients of our choice, and encourage people to stay in more. As a result, it leads to healthier and more affordable choices, and ways to explore the different possible meals to eat.

### Community for Cookers

*Grub!* isn't just a place for people to search for recipes, it's a site that fosters a community of people who enjoy to cook. Ranging anywhere from those who are newcomers to those who

consider themselves “Master Chefs.” *Grub!* allows excited home-cookers to upload recipes as well for the community to try out. People can then provide feedback and make suggestions to improve a dish. Users could also reach out to the recipe owner to ask specific questions – whether it is asking to trade recipes, or if they happen to know a recipe that can be made using certain types of ingredients. Novices can also take the opportunity to reach out to more experienced cooks to ask for any tips or suggestions on cooking certain meals or dishes. *Grub!* provides a great community centered around making delicious and tasty food.

*Grub!* is meant to get people excited about cooking food at home, and introduce people to different types of foods that could possibly be made from ingredients just lying around at home. On top of that, *Grub!* builds a community centered around providing feedback on dishes, sharing recipes, giving tips and advice on cooking, and making cooking at home joyous. It can also be used as a neat and helpful way in keeping recipes categorized and grouped in a tidy fashion, rather than having cookbooks lying around the house. *Grub!* hopes to provide tidy, affordable, and fun ways to cook and eat often at home, rather than going out to expensive restaurants.

## **Potential Audience**

Users of *Grub!* are those interested in cooking and making their own meals. They can range from those who are just getting started and are eager to make their first dish, to those who are looking to see how many different dishes they can cook using broccoli. *Grub!* is meant to be a site to help encourage homemade cooking and give enjoyable meals to make with ingredients that are lying just around the house. The site can be helpful to anyone who enjoys cooking as a hobby, and can help keep track and organize any recipes that a user has accumulated over the years. Anyone who has a couple of ingredients, a pan, and a willingness to cook can be a user of *Grub!*

*Grub!* also offers vegan and vegetarian recipes, as well as any other dietary restrictions. Its audience is rather large because many people enjoy cooking or want to start to learn to cook, and it has a vast amount of recipes that it can tailor to specific persons needs. Since everyone needs to eat, a lot of people need to cook, and *Grub!* can help all of them.

## **Competitors**

### Television Shows

There are plenty of cooking shows and websites that offer recipes to cook. Shows such as *Barefoot Contessa* and *Ten Dollar Dinners* give step by step instructions on making many types of meals. However, *Grub!* offers a community where users making the recipe can ask for tips and advice directly from other users. Users can also look at multiple recipes tailored to their tastes, and not just a single suggestion given on that episode of the show.

### Recipe Websites

Recipe websites such as thecookingmom.com and allrecipes.com give a wide range of recipes users can search. *Grub!* will provide a personalized cookbook organizer and a way to organize recipes by groups that fit the user’s needs. And if the user wishes to cook all the dishes in a group, she can simply ask for a list of all the ingredients she will need from multiple dishes, and a list will be displayed. *Grub!* also allows a search by ingredient and quantity amount, which will truly give the experience of making recipes with food already at the house, and no need for grocery shopping if it isn’t wanted.

## Major Technologies Used

*Grub!* will be a website built using the web.py framework. We have decided to focus on web because all three of our group members have experience with web technologies and would like to further improve these skills. We've chosen the web.py framework because two of our members used it for a project in CS 145 and found it simple, intuitive, and effective. Our third member has experience in Python, so we should all be able to ramp up pretty quickly. For the front end, we will use HTML, CSS, and JavaScript, which are widely used in industry.

For our database, we will use MySQL, which all of our group members have experience in from CS 145 or CS 108.

For version control, we'll be using GitHub. Although not all of us have extensive GitHub experience, we figure it will be worthwhile to master since it is widely used in industry. We feel that learning it at the beginning of this project will save a lot of time down the road. We also plan to use AWS to host our website using the free tier sign up.

## Resource Requirements: What do you need to build your project?

We'll need some initial recipes to upload to our database so that users can find recipes. We will find these recipes from online cookbooks and friends.

## Potential Approaches

One alternative way to address the problem of leftover food ingredients is to create a website that encourages composting. Home chefs could receive coupons for new cooking ingredients if they compost more. Although this approach would be environmentally friendly, home chefs would probably rather use these ingredients rather than get rid of them.

A potential way to address the problem of healthy eating is a mobile app that allows people to track their nutritional intake throughout the day. For example, a customer could search for the dish they ordered at a given restaurant and add it to their daily nutritional tracker. By keeping track of this information, customers would be more mindful of their nutritional choices. Although this approach would help customers make better choices while eating out, it wouldn't do a very good job helping customers keep track of their nutrition when they eat at home.

The problem of a lack of a cooking community could be addressed with a social networking website that connects nearby home chefs for cooking party nights. While this approach could help people form lasting friendships with their neighbors, it would fail to connect people with diverse cuisines from around the country and the world.

We ultimately chose *Grub!* because it addresses all three of our problems above with a single website. We help people use their leftover cooking ingredients by finding them potential recipes. We help people eat healthy by promoting home cooking over eating out. We foster a cooking community by allowing users to share their favorite recipes and connect with each other.

## Assessment of Risks

One potential risk for *Grub!* is a lack of users. If we do not reach a critical mass of users, our website will suffer from a dearth of recipes and a complete lack of community. To address this risk, we will gather different starter recipes to upload into our database, so our first users will be

able to find new meals. Additionally, we will use network effects to rapidly grow our user base. Similar to apps like Uber and Lyft, we can partner with local stores to give initial users \$20 gift cards (that can be spent on ingredients) for each friend they invite to *Grub!* that creates an account.

Another risk is that our users may not give honest and well-thought-out reviews, cooking tips, and recipe specifications. We can address this risk by developing a ratings system similar to Quora. Users can upvote various reviews, recipes, and cooking tips, allowing all *Grub!* users to identify legitimate cooking information.

A final risk is that we may be too ambitious and will have too many features to implement. We will address this risk by developing a comprehensive development plan listing core features, target features, and stretch features. This way, we can focus on aspects of the website that are absolutely critical before addressing stretch goals.

## **Next Steps**

Our next step is to create a comprehensive feature plan with core features, target features, and stretch features. This will allow us to create the core functionality of our site, addressing our primary user needs before venturing to address stretch goals.

Next, we will ramp up on learning about the web.py framework. We can learn about it through various online tutorials and examples. We will also review our CS 145 database projects to refresh ourselves about the web.py framework.

Finally, we will finalize our development plan, including how often we will meet and what we will do at each meeting. This will allow us to set up a routine that encourages accountability and results moving forward.