

INVENTory: Project Report Part 1

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CS 6750 – Human-Computer Interaction

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1. INTRODUCTION

INVENTory, the grocery inventory tracker for the consumer home, helps users plan meals that are cost-effective and nutritionally balanced while it presents opportunities to discover new food combinations through encouraged exploration.

At the application's core is an inventory list that tracks stock levels of various ingredients in the user's refrigerator and pantry. The inventory can be input through multiple channels to maximize the system's flexibility and utility for users unwilling to count items due to limited time, cost or personal motivation.

The application seeks to decrease the time and effort that smart food planning currently requires, and minimize people's aversion to the process. Ultimately, INVENTory's fun and usable interface occupies a position that could change behaviors with far-reaching consequences. Such behaviors include decreased agricultural waste, increased culinary literacy, and fulfillment of a more sustainable lifestyle.

To address the overwhelming feeling of uncertainty that novice cooks feel, INVENTory guides users with prompts to select ingredients they currently own. Self-assured users who are more comfortable planning meals can bypass the prompts and search recipes directly. The application delivers a high-value overview of possible combinations sourced from recipe databases. These combinations are limited by various degrees according to criteria users already employ in their (non-technically mediated) menu-selection process. These filtering criteria include budget, nutritional value, or dietary restrictions. This information will be displayed alongside the recipe, providing users with increased control over personal diet, and relieving the cognitive load this granular selection normally requires. Recipes, returned as a set of possible combinations sorted by associated values, are arranged to help users make decisions about what to prepare from pre-owned goods, or reveal novel combinations that could be prepared with more ingredients.

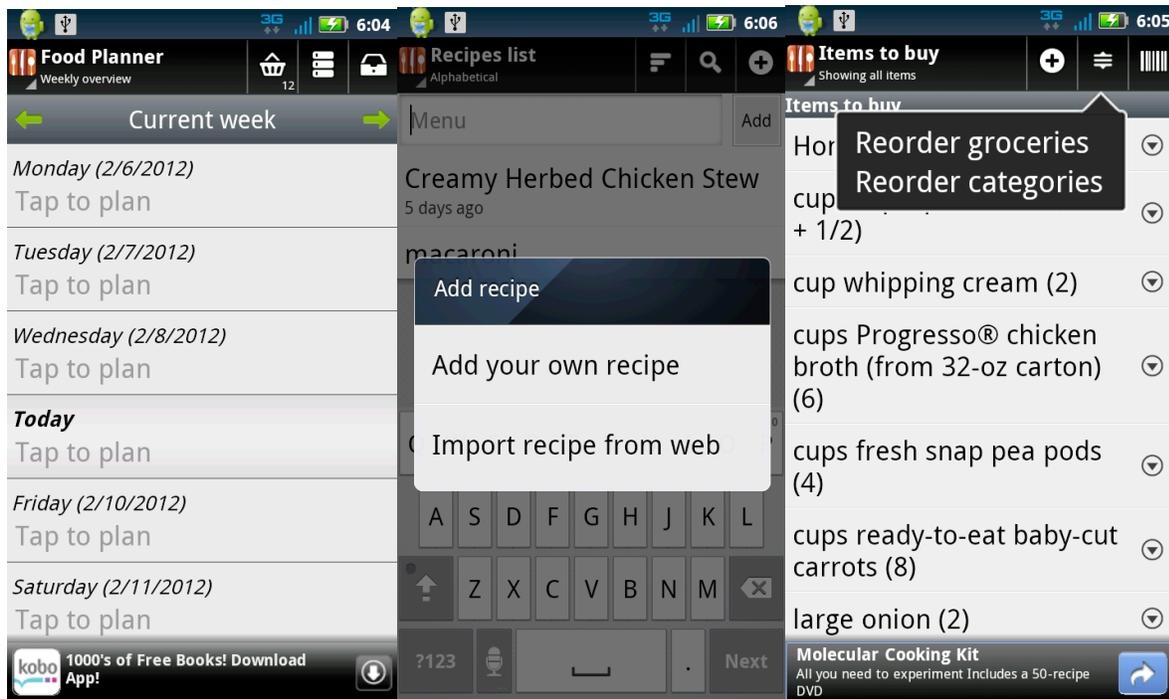
Beyond inventory tracking, the system maintains configurable dietary profiles so users can compare personal goals with recipes' nutritional values. These data points render visualizations that facilitate decision-making and relieve the need to exert mental processing power using nutritional literacy users may not even have. By providing this information graphically, INVENTory helps users make actionable decisions for a more balanced diet, tailored to their needs and tastes.

2. CURRENT UI CRITIQUE

Strengths

The user interface that provides functionality comparable to our nascent system is the Android-based *Food Planner* by Henrik Nielsen. This application is intended for any device using the Android OS. The application is accurately labeled as a food planner, since its primary utility as a task manager is evident from the first screen's layout as a daily schedule. From here one may plan any of the three meals throughout each day. Some strengths are the wide feature set which

increase overall usability. Users can either create their own recipes, or import them directly through a built-in web browser. Recipes this application stores can be scaled to yield different meal portions.



Weaknesses

The menus on Food Planner are not very easy to navigate because the icons and buttons are not a semantic identification of their function. There is a search recipe option if you hold down a button to select a food product in your inventory list, but this only searches recipes with this ingredient. No combination of inventoried ingredients can be used as search criteria. The grocery list does not associate recipe foods with actual in-store products, nor does it provide cost estimates to assist budget shoppers. The application allows users to add inventory items with a UPC scanner, but before performing this task, a separate application must be installed.

Food Planner's primary objective is to assist organized meal planners who are associate meals with a weekday when it will be prepared. Added features in INVENTORY may increase utility and functionality to give the user a much broader range of food preparation and inventory needs including budget assistance in meal planning as well as searching possible meals based on current grocery stock. We shall promote efficiency and allow the user to plan meals based on current inventory. The user will have access to current pricing information on products to aid in selection of both product and grocer. Our interface may also integrate scanner functionality to harvest nutritional and pricing information from products.

Summary of Strengths

1. Can scale recipe to alter total servings

2. Inventory scanner and manual entry
3. Recipes can be imported from selected websites via an internal browser
4. Recipes can be created by the user

Summary of Weaknesses

1. Menus are difficult to navigate
2. Buttons and icons are not intuitive in indicating their function
3. Cannot find recipes based on current grocery inventory
4. Generated grocery list does not associate foods with actual store products
5. No price association in grocery list
6. No built-in barcode scanner. Must use external application for scanning

3. REQUIREMENTS GATHERING AND METHODS

Overview and Purpose

To identify our target users' needs, motivations, and pain points while planning homemade meals, we conducted two exploratory requirements-gathering methods. A user questionnaire and three unstructured interviews provided quantitative and qualitative data on the target populations' perception of food planning and consumption. Starting from a divergent set of possibilities, the conclusions drawn from the data will focus our development on features users want, and features that integrate with their current routines.

The Questionnaire

We issued a questionnaire with 28 questions to assess users' culinary and technical proficiency, describe their attitudes toward food preparation and planning, pinpoint determinants of choice (economic, exploratory, or habitual), and tally the positive responses for various prospective features of the inventory application. The answers to our questionnaire focused the questions asked during unstructured interviews.

More than thirty people responded to the survey over the course of a week. They were solicited from a pool of at-home cooks on facebook and other were handed flyers at Sevenanda, a community-owned grocery store for the health-conscious individual committed to sustainable living in Atlanta. Respondents were split evenly male to female, and just over half fell in the age range 25-34. The responses revealed room in the design space to alter behaviors of those who already enjoy cooking but have no established food-planning routine.

(Responses to the questionnaire are included in the appendix)

Insights:

- Respondents felt cooking to be enjoyable. Nearly half also found it time-consuming.
- A small portion of respondents held the opinion that cooking is expensive
- Nearly 70 percent indicated they taught themselves how to cook
- Half preferred to cook alone, the other half preferred to cook with others. This informs our decision to integrate social networking with the application.
- Respondents overwhelmingly indicated a pattern of short-term planning, with 85 percent acquiring ingredients for recipes a few days before cooking or on the same day.

- More than half cook for two people, and a small but significant portion cook for just themselves.
- Only a quarter of respondents have established a personal meal-planning method.
- More than half indicated a willingness to purchase additional ingredients to paid with existing food before it spoils.
- Budget was a more polarized factor than we anticipated: A third of respondents' meals plans "never" depend on their food budget. Conversely nearly twenty percent always "always" have a food budget.
- While they use technology to search recipes online through their computers and smart phones, almost twenty percent of responds never use technology in their kitchen. Half use technology in the kitchen fewer than three times a week.
- Nearly half of respondents use a smart phone when planning and cooking meals
- Many respondents indicated allrecipes.com as a recipe source they search.
- Popular features of online recipe sites included:
 - Search by ingredient
 - User ratings
 - Photos
 - Filtering by meal type
- Less popular features of online recipe sites included:
 - excluding ingredients in search
 - nutritional information
 - storied information accompanying recipe
- in order of importance, the determinants of people's grocery list:
 - Nutritional balance
 - Budget
 - Trying new things
 - Dietary restrictions
- Respondents are less concerned with acquiring general knowledge of food. They are more concerned with obtaining breakdowns of recipes' nutrition and cost. This information helps people understand the value of a particular meal for them, and this notion of value helps people choose what to prepare from an overwhelming number of options.
- Themes that emerged from open-ended question about respondents' favorite part of cooking
 - Enjoyment of problem solving: People like having control over their intake (where food is sourced, and what it is), and they like directing the cooking process (ie. Making sure everything is timed correctly)
 - Cooking is a time for social interaction, forging a strong emotional connection between food and people.
 - Concentration on discrete items as meditative:
- Themes that emerged from open-ended question about respondents' least favorite aspect of cooking
 - Not knowing where to start can feel overwhelming.
 - Going to the grocery store is a major deterrent. (Room in the design space for a planning application that makes this necessary trip less frequent)

- Buying multiple ingredients for one recipe (expensive) without using them up or letting them spoil is disheartening.
- Stress sets in when you have to cook immediately because you are hungry, but you have nothing prepared.

Unstructured Interviews

To explore the responses from our questionnaire in more depth and specificity, we conducted three unstructured interviews. Our questions solicited responses on people's current routines of food preparation and planning. We also solicited people's opinions about the personal benefits they would receive from features like data logging inventory, and budget tracking

When asked about the areas of grocery and meal planning that posed the most trouble, the three common complaints were grocery collection, expiration date notification, and meal planning with an emphasis on current inventory.

Interview #1
Male, age 29

Interview number one revealed that the subject would benefit from something to keep track of expiration dates and would like to be notified if something is going bad soon. The subject explicitly stated that he liked to keep things simple and would not be interested in manually typing in dates. Another strong interest was in some type of interface with the grocery store that would have someone at the store collect your groceries for you. The subject's meals were generally planned around matching a meat to a bread-type and a vegetable with no real deep thought put into planning. Usually the subject would plan meals around the grocery store items that were observed that looked like they may be tasty. Nutrition and budget were not really a concern in general item selection. The subject stated that rarely does he look at nutritional information, but did draw the exception to "sports foods." The subject regularly partakes in tri-athlete competitions and when training or exercising, would make sure to base foods around what would benefit him to that end. Also, when examining snack foods (nuts, goldfish, cheese-its, etc.) the subject stated that a food with for instance more protein would be preferred. Also, if any there were any medical concerns he may examine foods based on empirical data showing there benefit to assist in that ailment. The subject goes shopping roughly every 1.5 to 2 weeks.
Takeaways: Automated grocery collection, fully automated expiration date notification, light meal planning

Interview # 2
Female, age 51

Interview number two revealed that the subject would benefit most from some sort of data log of current inventory. So when she removed the last of a certain item, the log would put that item on a grocery list. She stated that she would rotate items in her pantry to an easier to reach spot as needed. She primarily based all of her and her family's meals around current inventory. She stated that if meats were on sale she would stock the freezer. The subject also stated that the

worst part for her is having to shop at the grocery store. Also the subject stated that meal planning ideas were hard to come up with and that she had to think for a while to come up with something that she and not prepared in a while. She also stated that she would sometimes forget to use fresh vegetables and fruit before they go bad. She stated that it would be nice to have a list of meals that she wanted for the week and then to have all of the ingredients delivered to her door.

Takeaways: Automated grocery collection and delivery, expiration date notification, log of inventory with notification of stock running low, meal planning ideas based on current stock

Interview #3
Female, age 48

The interviewee is a stay-at-home wife and cooks meals almost every night. Since her husband does not like to eat leftovers, she says it's crucial she plan meals at least a week in advance. She also says she has a driving phobia and cannot drive herself to the store, so she makes one list for a Saturday shopping trip when her husband can go with her. The system of meal planning she's devised follows this description: She notes ideas, ingredients and recipes throughout the week that she wants to remember to include in the next week's meal planning. On a Google calendar, she lists the recipes she finds from her personal recipe database or from cooking sites like allRecipes.com or epicurious.com. (If she prepares a meal that she and her husband like from one of these recipe sites, she will add it to the personal database later.) She says she like using Google calendar because she can move around the meals on the calendar view once she has decided what she will prepare, so that recipes with common ingredients can be grouped together in the week, and produce or meal likely to spoil at the end of the week can be prepared earlier. Since she cooks frequently, she says she already has a good idea of what's in her pantry and an inventory tracker would be useful if she had a more extensive selection in her pantry. Although she tries to keep her food budget at a manageable level, she says there is room to splurge on nice cuts of meat every so often, and to compensate for that increase, it would be nice to have a budget tracker that would show her the meals that are less expensive to make on other days of the week.

Takeaways: flexibility afforded by Google Calendar, long-term planning methods, cost breakdowns to balance food budget

4. USER CHARACTERISTICS

CRITERIA	GROUP 1	GROUP 2	GROUP 3
<i>Number of people in household</i>	1	2	2+
Days elapsed between planning and cooking meals	0 to 3	4 to 7	more than 7
Kitchen literacy	Low to high. Low for younger populations.	Low to high, with the advantage of combined kitchen literacy	Moderate to high, probably gained experience cooking for a family.
Diversity of nutritional needs	low	low to high	low to high
Computer Literacy	high	high	high
Motivation	low motivation to plan meals ahead unless time and distance prohibits access to grocery	moderate to low motivation to plan ahead.	High motivation to plan ahead, especially balancing various nutritional needs with budget constraints
Food budget	highly dependent on economic status, but no obligations to consider expenses for others in the household	varies with economic status. Occasional out-of-bounds expenses allowed when both generate income	Varies with economic status and the proportion of mouths fed to incomes generated. Some sort of budget in place.
Social Attitude	occasionally prepare meals with others, but mostly alone	usually prepare meals with others, rarely alone	usually prepare meals with others, occasionally alone

(Personas for each user group are included in the appendix.)

7. FUNCTIONAL REQUIREMENTS

1. The system must allow the user to monitor his/her current grocery inventory for quantity and freshness.
2. The system should aid the user in planning lists for the next grocery restock through inventory monitoring, budget planning and nutrition planning.
3. The system should assist the user with meal planning by suggesting recipes based on his/her current inventory.
4. The system should allow the user to filter recipes based on preparation time, cost of preparation, effort required, allergies and so on.
5. The system should provide comprehensive information on nutritional values for all recipes.

8. FUNCTIONAL REQUIREMENTS & TASK ANALYSIS

For the purposes of this project, we chose two methods of Task Analysis to create functional requirements communicating the findings our data suggest.

Hierarchical Task

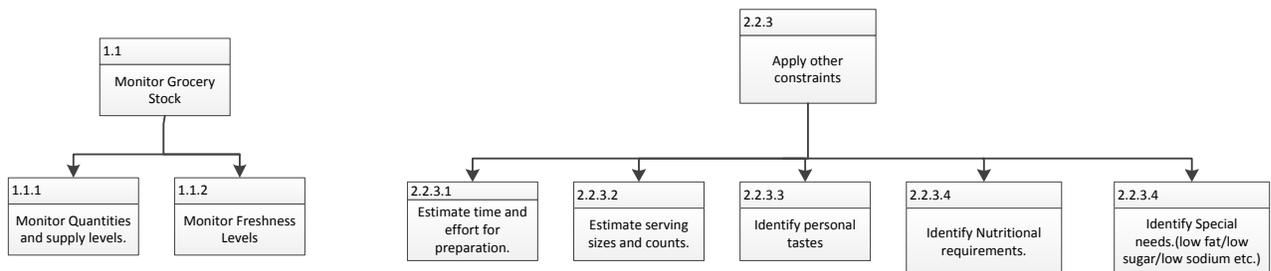
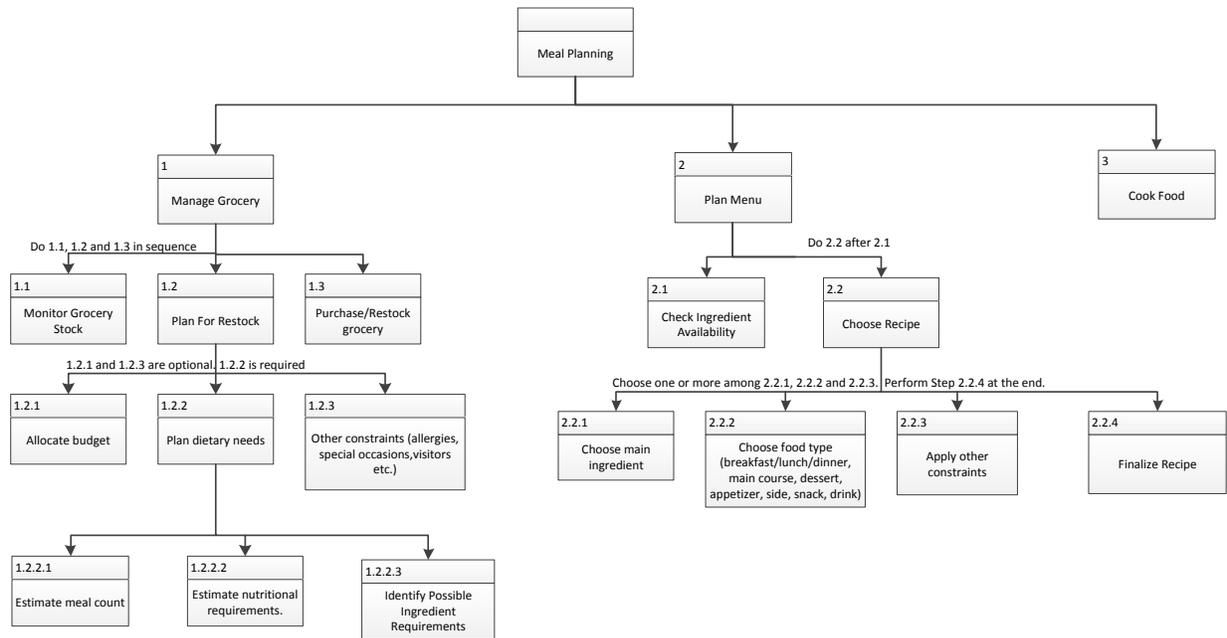
Hierarchical Task Analysis (HTA) allows us to identify to any degree of detail, all the tasks that are required to be performed in order to achieve our goal. We first identify the major overall goal of our system, and then decompose the goal into a set of major tasks that have to be performed in order for the goal to be successfully achieved. Then each of these major tasks may be decomposed into smaller tasks depending on the degree of granularity that is required.

We chose this method, because it allows us to comprehensively capture all the major and minor tasks that are performed by the user to achieve the stated goal, thereby helping us to identify which tasks we plan to automate via our newly designed system.

Environmental Analysis

Environmental Analysis allows us to identify the physical conditions and limitations under which we expect our system to operate. This helps us to define the physical design requirements of our system, thereby ensuring that it is usable and reliable in an actual client setting.

8.1 HIERARCHICAL TASK ANALYSIS



8.4 ENVIRONMENT

Physical Environment

The kitchen is the physical environment when the user stocks inventory, but could extend beyond this environment when planning meals and shopping. It may be beneficial to segregate this system into three separate functions: shopping, stocking groceries, and planning meals. While shopping, the user may be distracted in crowded areas with noise. While stocking groceries, the user will most likely be in a kitchen setting with ample lighting. If children or spouses are present, there may be a considerable amount of distraction and noise. While planning meals, the user could be in any number of places: on the bus, in a car, at a coffee shop, at work, or at home. There is a variety of situations one would encounter in these environments. However, the worst case scenario would implicate lots of noise, inadequate lighting, and crowded environs with many distractions.

Social Environment

The social environment that the user will be a part of could range from an individual user with no need for collaboration to an entire family collaborating in meal planning. All members of the family should be able to access the grocery list independent of one another and add things to the list. The data should be synchronous to that end.

Technical Environment

The product (referring to the grocery stocking function) will be required to interface with existing food storage receptacles such as freezers, refrigerators, breadboxes, pantries, etc. Therefore, the product will be required to withstand a variety of temperatures. The product will also possibly be scattered across the kitchen in multiple places and require some type of wireless interfacing. The planning meals and shopping aspects will also require some type of wireless interfacing to coordinate between multiple users of the same kitchen.

9. CRITICAL USE CASES

Plan menu

USER INTENTION	SYSTEM RESPONSIBILITY
Decide to search recipes by ingredients	
	Offer all ingredients in inventory
Choose an ingredient	
	Offer ingredients in inventory for second selection
Choose the second ingredient	
	Offer recipe list

Choose to sort results	
	Provide controls to filter results
Filter results	
	Provide filtered results
Select recipe	
	Offer recipe details
Check if it is ready to cook	
	Request severing amount
	Provide information of missing or lacking ingredients
Request expected cost of ingredients	
	Provide expected cost
Request nutrition information	
	Provide nutrition information
Save as favorite	
	Request user information (log-in)
	Verify identity
	Save recipe

Manage Inventory

USER INTENTION	SYSTEM RESPONSIBILITY
Access inventory list	Provide option to manage items
Retrieve inventory status	
	Offer inventory information
Request to add new item	

	Request item name, quantity
Provide requested information	
	Retrieve estimated cost of items
	Save to inventory

10. USABILITY GOALS

Usability objective measures	Effectiveness measures	Efficiency measures	Satisfaction
Overall usability	Percentage of goals achieved	Time to complete a task	Rating scale for satisfaction
Utility	Meets needs of trained users	Relative efficiency compared with an expert user	Rating scale for satisfaction with power features
Learnability	Percentage of users who managed to learn	Relative efficiency while learning to criterion	Rating scale for ease of learning
Tolerance for error	Percentage of errors corrected or reported by the system	Time spent on correcting errors	Rating scale for error handling
Comprehensiveness	Detail of menu attributes returned by system	Time spent to determine a selection	Rating scale for satisfaction of returned results
Visibility	Percentage of items managed by system that can be input through available means	Time spent to find desired item in inventory list	Rating scale for satisfaction with inventory management
Customization (Personalization)	Percentage of profiles saved by system	Time spent on creating and	Rating scale for satisfaction for

		retrieving given profile	personalizing feature functions
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11. REFLECTIONS

Reflecting on the process of assessing the design space, we note areas where we encountered few snags and other avenues of inquiry we could have explored to benefit our design.

It was difficult to synthesize the diverse ways people plan and prepare meals in order to identify where our application would best fit into existing routines, or change behavior by enhancing an activity that people already either enjoy or despise. Furthermore, three main motivators emerged as a result of our requirements-gathering activities: cooking on a limited budget, planning for meals that are nutritionally balanced, and seeking a variety of tastes. These motivators cut across the population and overlapped with user characteristics such as age, number of people in the household and the presence of existing meal-planning routines. These overlapping motivations and characteristics posed a challenge when segmenting our population into distinct user groups, and our decision to segment users by number of people in each household seems somewhat arbitrary. But ultimately, based on our survey of this design space, this segmentation adequately delineates the various ways our application accommodates the obligations and meal-planning patterns implied by the three social and economic environments.

Much easier was identifying basic tasks that people do in the course of planning and preparing meals. Making decisions about food—what to prepare and how often and for how many people with a certain amount of money—is something everyone has done at some point in his or her life. It is a decision that invades our daily routines so persistently that people hold strong opinions, good and bad, about the necessity of eating at home (And especially, eating well). Finding respondents willing to speak on this subject was not difficult at all.

If we could start over, we would expand our understanding of our subject beyond the obvious design space centered in the home. Soliciting the expertise of a nutritionist before sending out the survey would allow us to pinpoint the relevant criteria for balanced daily intake. We could then target more precisely the nutritional information that matters most to our users based on options pre-selected by a dietary expert (For example, saturated fats? Calories? Sodium? Carbohydrates?)

If we had more time, an ethnographic study would be appropriate to gather data about our task-based system. By spending time with users in their home environment and asking them to verbalize their planning process with cognitive walkthroughs, we could understand more deeply people’s attitudes toward cooking—a personal subject they may not have even fully explored yet. We could identify periods when people vacillate from ordered routine, and determine how

an application could support them in achieving goals when factors like time, money and patience run thin. Additionally, a logbook deployed in a few homes could yield telling observations on patterns of planning and occurrences of rewarding experiences over the course of a few months.

The swamped singleton

Mila Jenkins



Age: 24
Sex: Female
Marital status: Single
Occupation: Microbiology Graduate Student
Company Type: Private University

“I wish I had more time to plan a variety of healthy meals”

Mila is a self-assured and driven master's student in Microbiology at New York University, expected to graduate in the next year. She has always maintained a busy lifestyle balancing a taxing course load as an undergraduate with a commitment to her intermural soccer team. She is starting to feel the effects of decreased activity now that she's a graduate student. Even though she walks everywhere in New York City, she lives so close to her school that she would like to balance her decreased activity with a nutritious diet.

Eating out most of the time is financially unfeasible, so she makes the effort to pick up fresh produce from the corner market when she's not laden with books. The problem is that she's unsure how to make produce interesting, and does not

know how to prepare meat beyond cooking frozen chicken cutlets or seasoning ground beef. She gets bored with her usual salad and pasta combinations, but she doesn't have time to prepare meals for the coming week. Moreover, cooking for only herself, her leftovers frequently go bad before she can eat them up.

A few of her friends have thrown informal potluck dinner parties, and she wished she could have brought a dish more adventurous than macaroni salad. She likes these intimate gatherings with friends, and would like to host a dinner and cocktail party at her apartment once winter settles in.

GOALS

- Eat well to maintain figure and promote healthy brain activity
- Save money where she can to pay for mounting student loans
- Decrease energy consumption by walking and taking public transportation
- Make time with friends memorable and meaningful despite limited social time and budget.

FRUSTRATIONS

- Eating out often because she spends so much time at school
- Not knowing enough about cooking to improvise recipes if she has all but a few ingredients to make a meal at home
- Letting food spoil since she is one person, and recipes she finds online yield at least four portions
- Grocery shopping in New York, having to carry packages on foot or on the subway trains back to her apartment.
- A tiny kitchen makes it difficult to store a larger assortment of kitchen tools, and a large pile of dirty dishes has to be washed immediately.

The creative cook

Damen Carver



Age: 30
Sex: Male
Marital status: Married
Occupation: Project Manager
Company Type: Mid-size creative advertising firm

“I wouldn’t dream of cooking without my wife and Duke Ellington there with me.”

Damen is a high-powered project manager in Chicago who has passion and drive to innovate beyond conventions. In his workplace as in his kitchen, once he has an idea not much can curb his enthusiasm to carry out that vision. He loves every minute he spends with his wife, who is as enthusiastic as he is about the process of creating and consuming fine foods. Between them both they generate enough income to finance their adventurous tastes, but they wish they had more time to plan meals.

Damen finds cooking to be a meditative relief from the demands of his job, and even though he likes riffing on recipes, it’s nice to follow someone else’s instructions for a change. He often entertains friends with set-menu dinner parties and on these nights, the radio plays from the moment raw ingredients enter the mix until the last guest leaves.

GOALS

- Make every meal an adventure, trying new ingredients, techniques and pairings.
- Spend time with his wife of five years, growing together and creating memories around a culture of shared production.
- Document successes and save notes in a personal recipe database for reference later.
- Improve technique through practice, applying past lessons to present situations.
- Impressing friends with breadth of knowledge about food.

FRUSTRATIONS

- The time spent planning meals, which isn’t as satisfying as creating them
- Buying multiple ingredients for one recipe without using them up, and watching them spoil in the days after purchase.
- Maintaining a balanced diet despite the desire to cook rich foods.
- Not having a structured approach to planning meals, and getting sidetracked in the process

The healthy homemaker

Lisa Lassiter



Age: 38
Sex: Female
Marital status: Married
Occupation: Stay at home wife, mother of two

“I’ve got to maximize what I’ve been given.”

Lisa is a mother of two boys aged 3 and 5, and she lives with her husband, Sam, a small business owner in Lakeland, Florida. Sam doesn’t get home until seven o’clock most nights because he has to shut down the hardware store, and since they don’t make enough income to hire a babysitter to watch after the children except on select occasions, Lisa has to plan her meals a week ahead and make the grocery trip on Saturday when Sam can watch the children without her. He boys are growing, and she’d like to impart them with healthy eating habits, but knowing what children will like is not always easy. She likes

the user ratings on allrecipes.com, because when people write that the whole family liked a recipe, she trusts it won’t be a complete failure.

Since Sam doesn’t like to eat leftovers (a pain point in their relationship), she makes a main course with a few side dishes each night. Lisa would like to alter recipes so measurements are portioned for four servings. She’d also like to know what she could make with fresh ingredients on hand in order to save money feeding a family of four with finicky tastes.

GOALS

- Prepare dinners for her family that are nutritionally balanced and “kid-friendly”
- Maintain interest in this everyday task
- Schedule meals to maximize the freshness of required ingredients
- Save money where possible to spread spillover food budget to other family expenses

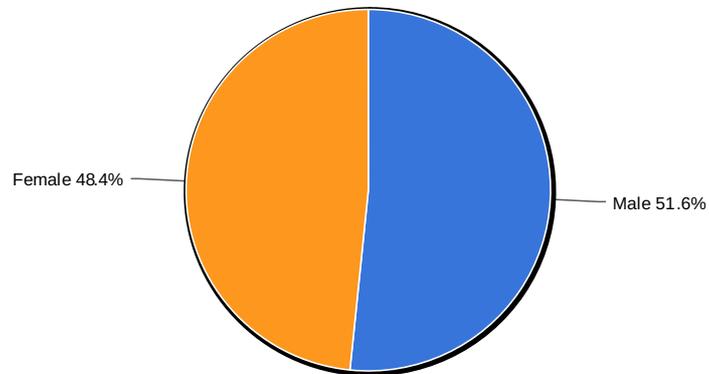
FRUSTRATIONS

- Difficult to make trips to the grocery when she’s obligated to look after her children and maintain the house
- Children think vegetables are boring, and she’s not sure how to make healthy sides that excite them.
- The various technological tools she uses to plan, store and retrieve recipes do not communicate with each other, so much of the time she spends planning is spent working through digital obstacles.

Summary Report - Feb 6, 2012

Survey: INVENTory

How do you identify yourself?

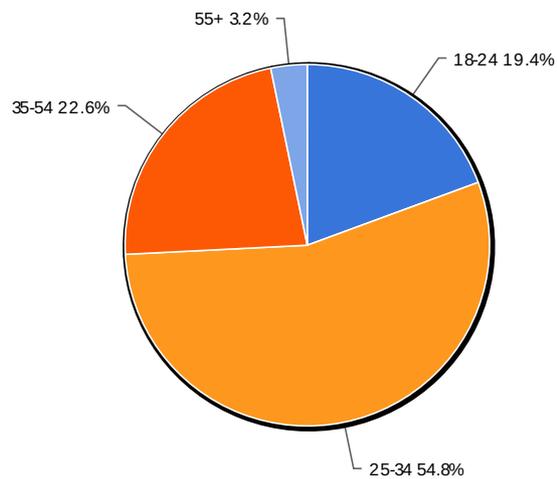


1. How do you identify yourself?

Value	Count	Percent %
Male	16	51.6%
Female	15	48.4%

Statistics	
Total Responses	31

Select your age range:

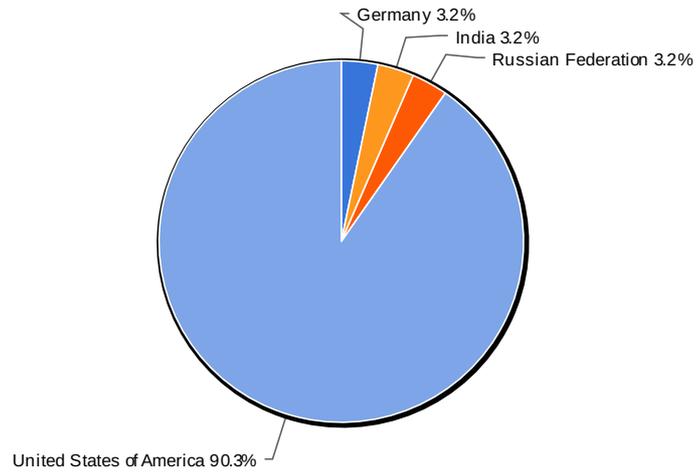


2. Select your age range:

Value	Count	Percent %
18-24	6	19.4%
25-34	17	54.8%
35-54	7	22.6%
55+	1	3.2%
under 18	0	0%

Statistics	
Total Responses	31
Sum	833.0
Average	26.9
StdDev	7.59
Max	55.0

What is your nationality?



3. What is your nationality?

Value	Count	Percent %
Germany	1	3.2%
India	1	3.2%
Russian Federation	1	3.2%
United States of America	28	90.3%
Afghanistan	0	0%
Albania	0	0%
Algeria	0	0%
Andorra	0	0%
Angola	0	0%
Antigua	0	0%
Argentina	0	0%
Armenia	0	0%
Australia	0	0%
Austria	0	0%
Azerbaijan	0	0%
Bahamas	0	0%
Bahrain	0	0%
Bangladesh	0	0%
Barbados	0	0%
Barbuda	0	0%
Belarus	0	0%
Belgium	0	0%
Belize	0	0%
Benin	0	0%
Bhutan	0	0%
Bolivia	0	0%
Bosnia	0	0%
Botswana	0	0%
Brazil	0	0%
Brunei Darussalam	0	0%
Bulgaria	0	0%
Burkina Faso	0	0%
Burundi	0	0%
Cambodia	0	0%

Statistics

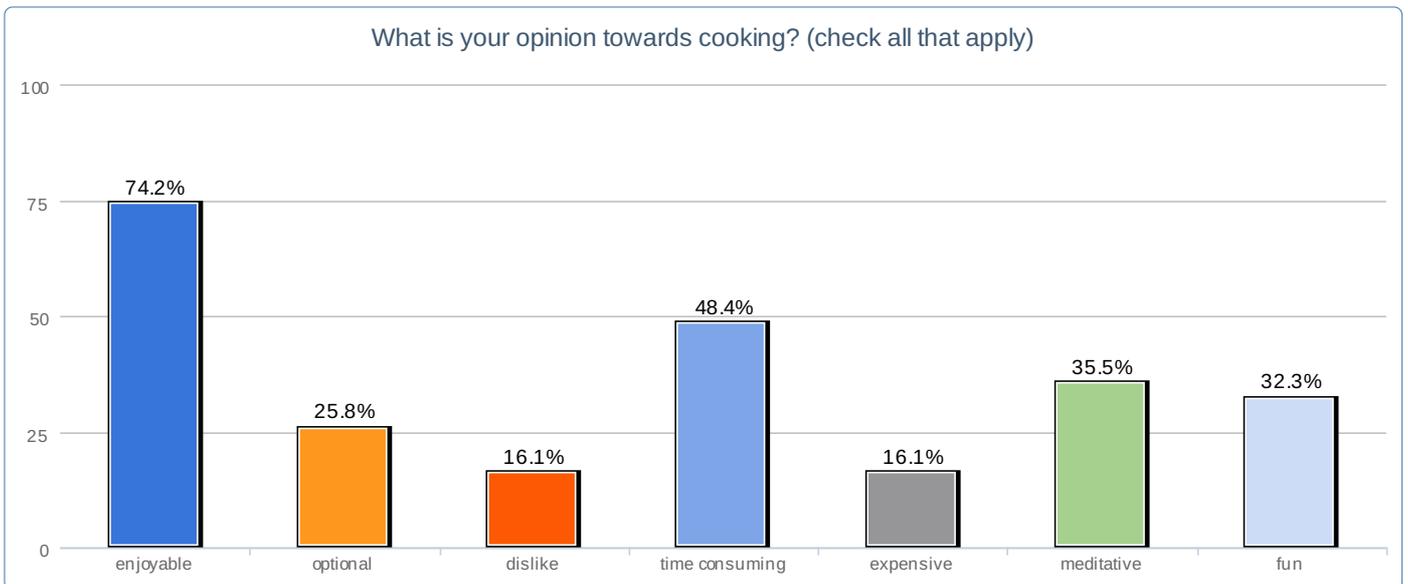
Total Responses	31
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Cameroon	0	0%
Canada	0	0%
Cape Verde	0	0%
Central African Republic	0	0%
Chad	0	0%
Chile	0	0%
China	0	0%
Colombia	0	0%
Comoros	0	0%
Congo (Brazzaville)	0	0%
Congo (Kinshasa)	0	0%
Costa Rica	0	0%
Cote d'Ivoire	0	0%
Croatia	0	0%
Cuba	0	0%
Cyprus	0	0%
Czech Republic	0	0%
Denmark	0	0%
Djibouti	0	0%
Dominica	0	0%
Dominican Republic	0	0%
Ecuador	0	0%
Egypt	0	0%
El Salvador	0	0%
Equatorial Guinea	0	0%
Eritrea	0	0%
Estonia	0	0%
Ethiopia	0	0%
Fiji	0	0%
Finland	0	0%
France	0	0%
Gabon	0	0%
Gambia	0	0%
Georgia	0	0%
Ghana	0	0%
Greece	0	0%
Grenada	0	0%
Guatemala	0	0%
Guinea	0	0%
Guinea-Bissau	0	0%
Guyana	0	0%
Haiti	0	0%
Herzegovina	0	0%
Honduras	0	0%
Hungary	0	0%
Iceland	0	0%
Indonesia	0	0%
Iran	0	0%
Iraq	0	0%
Ireland	0	0%
Israel	0	0%

Italy	0	0%
Jamaica	0	0%
Japan	0	0%
Jordan	0	0%
Kazakhstan	0	0%
Kenya	0	0%
Kiribati	0	0%
North Korea	0	0%
South Korea	0	0%
Kosovo	0	0%
Kuwait	0	0%
Kyrgyzstan	0	0%
Lao	0	0%
Latvia	0	0%
Lebanon	0	0%
Lesotho	0	0%
Liberia	0	0%
Libyan Arab Jamahiriya	0	0%
Liechtenstein	0	0%
Lithuania	0	0%
Luxembourg	0	0%
Macedonia	0	0%
Madagascar	0	0%
Malawi	0	0%
Malaysia	0	0%
Maldives	0	0%
Mali	0	0%
Malta	0	0%
Marshall Islands	0	0%
Mauritania	0	0%
Mauritius	0	0%
Mexico	0	0%
Micronesia	0	0%
Moldova	0	0%
Monaco	0	0%
Mongolia	0	0%
Montenegro	0	0%
Morocco	0	0%
Mozambique	0	0%
Myanmar	0	0%
Namibia	0	0%
Nauru	0	0%
Nepal	0	0%
Netherlands	0	0%
New Zealand	0	0%
Nicaragua	0	0%
Niger	0	0%
Nigeria	0	0%
Northern Ireland	0	0%
Norway	0	0%
Oman	0	0%

Pakistan	0	0%
Palau	0	0%
Palestine	0	0%
Panama	0	0%
Papua New Guinea	0	0%
Paraguay	0	0%
Peru	0	0%
Philippines	0	0%
Poland	0	0%
Portugal	0	0%
Qatar	0	0%
Romania	0	0%
Rwanda	0	0%
Saint Kitts and Nevis	0	0%
Saint Lucia	0	0%
Saint Vincent and the Grenadines	0	0%
Samoa	0	0%
San Marino	0	0%
Sao Tome and Principe	0	0%
Saudi Arabia	0	0%
Senegal	0	0%
Serbia	0	0%
Seychelles	0	0%
Sierra Leone	0	0%
Singapore	0	0%
Slovakia	0	0%
Slovenia	0	0%
Solomon Islands	0	0%
Somalia	0	0%
South Africa	0	0%
Spain	0	0%
Sri Lanka	0	0%
Sudan	0	0%
Suriname	0	0%
Swaziland	0	0%
Sweden	0	0%
Switzerland	0	0%
Syrian Arab Republic	0	0%
Tajikistan	0	0%
Tanzania	0	0%
Taiwan	0	0%
Thailand	0	0%
Tibet	0	0%
Timor-Leste	0	0%
Tobago	0	0%
Togo	0	0%
Tonga	0	0%
Trinidad	0	0%
Tunisia	0	0%
Turkey	0	0%
Turkmenistan	0	0%

Tuvalu	0	0%
Uganda	0	0%
Ukraine	0	0%
United Arab Emirates	0	0%
United Kingdom of Great Britain	0	0%
Uruguay	0	0%
Uzbekistan	0	0%
Vanuatu	0	0%
Venezuela	0	0%
Vietnam	0	0%
Yemen	0	0%
Zambia	0	0%
Zimbabwe	0	0%

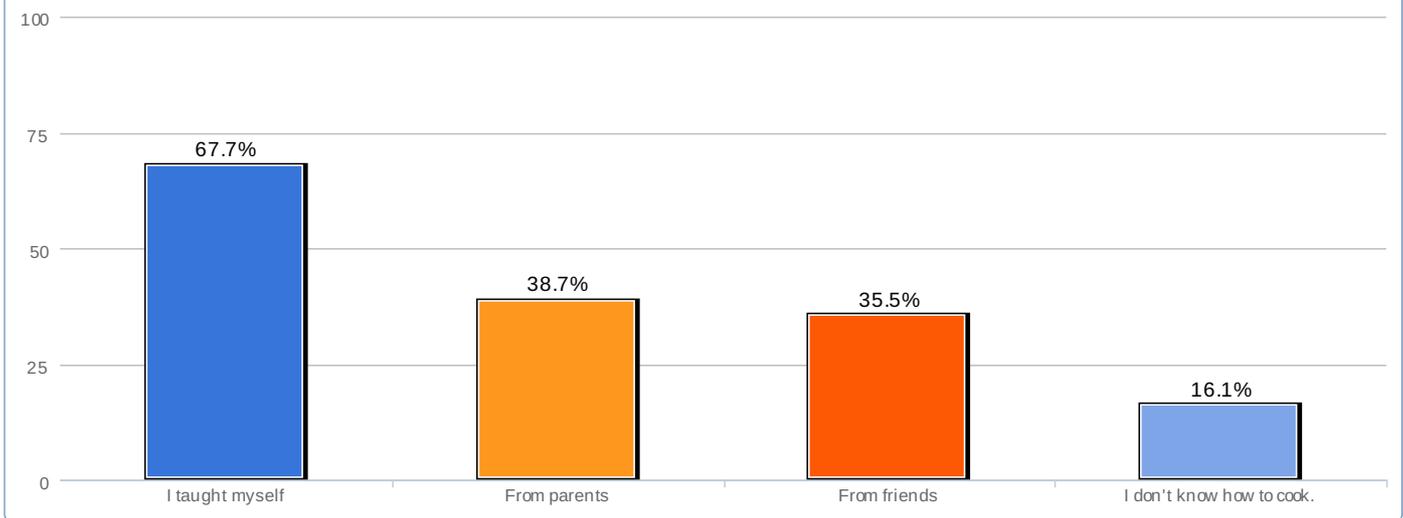


4. What is your opinion towards cooking? (check all that apply)

Value	Count	Percent %
enjoyable	23	74.2%
optional	8	25.8%
dislike	5	16.1%
time consuming	15	48.4%
expensive	5	16.1%
meditative	11	35.5%
fun	10	32.3%

Statistics	
Total Responses	31

How did you learn to cook? (check all that apply)

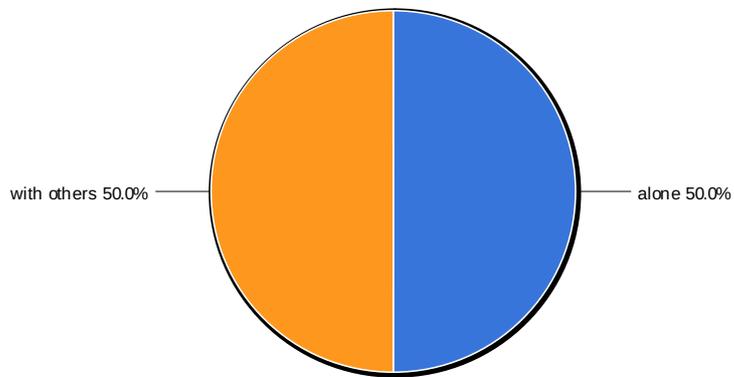


5. How did you learn to cook? (check all that apply)

Value	Count	Percent %
I taught myself	21	67.7%
From parents	12	38.7%
From friends	11	35.5%
I don't know how to cook.	5	16.1%

Statistics	
Total Responses	31

Do you prefer to cook _____

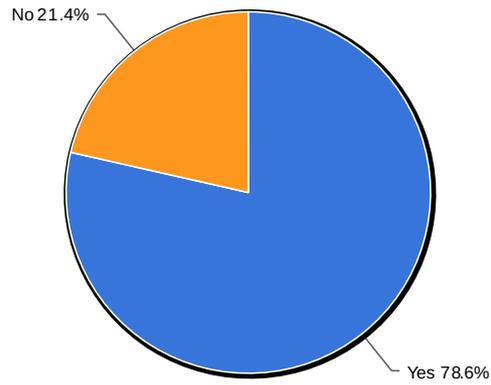


6. Do you prefer to cook _____

Value	Count	Percent %
alone	14	50%
with others	14	50%

Statistics	
Total Responses	28

Do you cook meals at home?

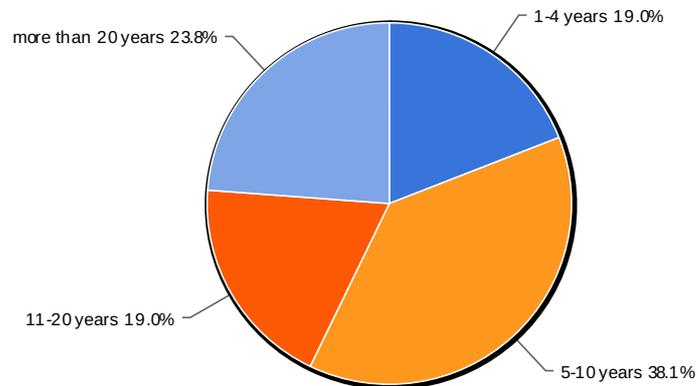


7. Do you cook meals at home?

Value	Count	Percent %
Yes	22	78.6%
No	6	21.4%

Statistics	
Total Responses	28

How many years have you planned and prepared meals for yourself?

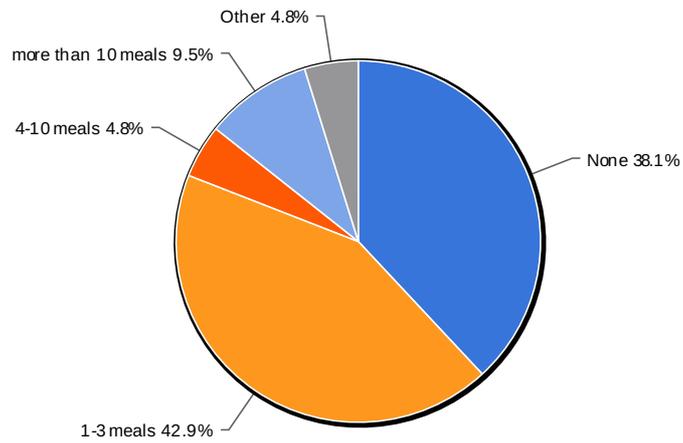


8. How many years have you planned and prepared meals for yourself?

Value	Count	Percent %
1-4 years	4	19%
5-10 years	8	38.1%
11-20 years	4	19%
more than 20 years	5	23.8%

Statistics	
Total Responses	21
Sum	88.0
Average	5.5
StdDev	3.57
Max	11.0

How many meals a week do you prepare from a recipe?



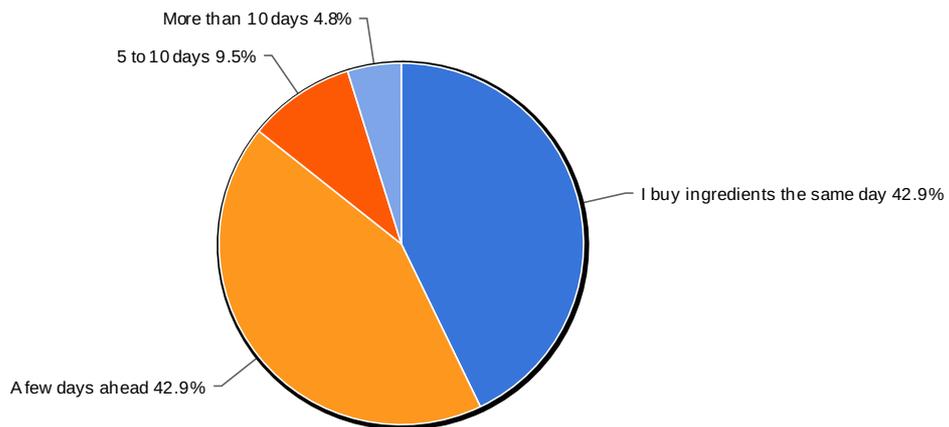
9. How many meals a week do you prepare from a recipe?

Value	Count	Percent %
None	8	38.1%
1-3 meals	9	42.9%
4-10 meals	1	4.8%
more than 10 meals	2	9.5%
Other	1	4.8%

Statistics	
Total Responses	21
Sum	13.0
Average	1.3
StdDev	0.90
Max	4.0

Open-Text Response Breakdown for "Other"	Count
I work greater than 80 hours a week. I prepare meals maybe once every 6 months.	1

How far in advance do you shop for meals before you cook them?

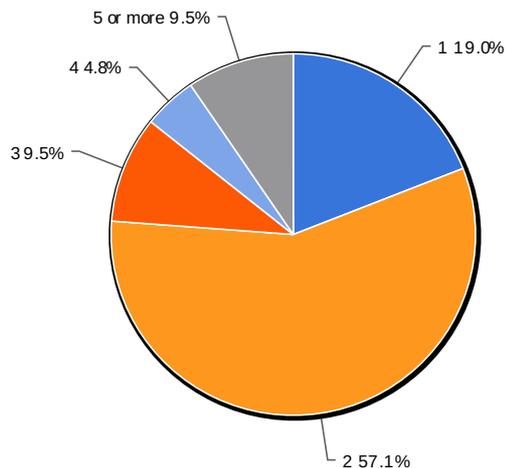


10. How far in advance do you shop for meals before you cook them?

Value	Count	Percent %
I buy ingredients the same day	9	42.9%
A few days ahead	9	42.9%
5 to 10 days	2	9.5%
More than 10 days	1	4.8%

Statistics	
Total Responses	21
Sum	10.0
Average	5.0
Max	5.0

How many people do you usually cook for (including yourself)?



11. How many people do you usually cook for (including yourself)?

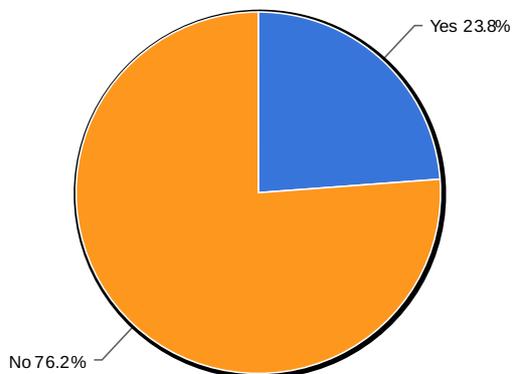
Value	Count	Percent %
1	4	19%
2	12	57.1%
3	2	9.5%
4	1	4.8%
5 or more	2	9.5%

Statistics	
Total Responses	21
Sum	48.0
Average	2.3
StdDev	1.12
Max	5.0

12. How would you rate your skills in the kitchen:

Beginner --- Professional	
Cooking Skill	Average Rank 5.67
	<ul style="list-style-type: none"> Count: 21 Min: 1 / Max: 8 StdDev: 2.21

Do you have a set routine or method for planning your meals?

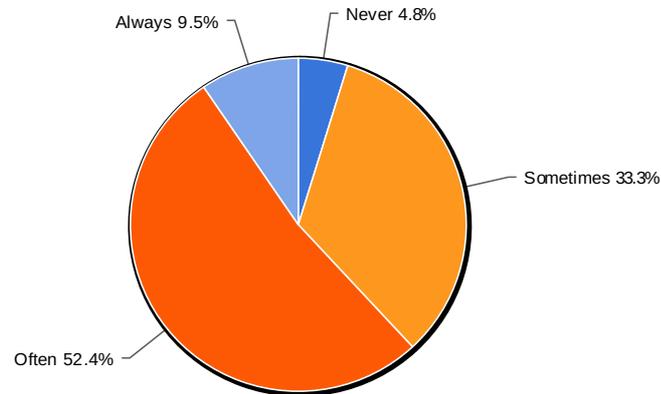


13. Do you have a set routine or method for planning your meals?

Value	Count	Percent %
Yes	5	23.8%

Statistics	
Total Responses	21

I make decisions about what to cook based on the ingredients I already have in my kitchen.



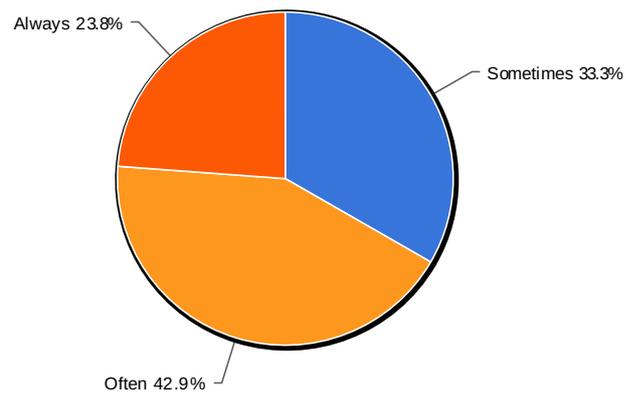
14. I make decisions about what to cook based on the ingredients I already have in my kitchen.

Value	Count	Percent %
Never	1	4.8%
Sometimes	7	33.3%
Often	11	52.4%
Always	2	9.5%

Statistics

Total Responses	21
-----------------	----

I improvise and substitute ingredients when I don't have what a recipe calls for.



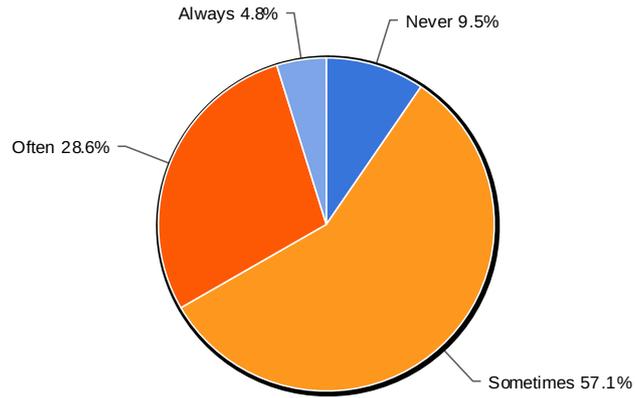
15. I improvise and substitute ingredients when I don't have what a recipe calls for.

Value	Count	Percent %
Sometimes	7	33.3%
Often	9	42.9%
Always	5	23.8%
Never	0	0%

Statistics

Total Responses	21
-----------------	----

I will purchase additional ingredients for a recipe if it means I can use a food before it spoils.

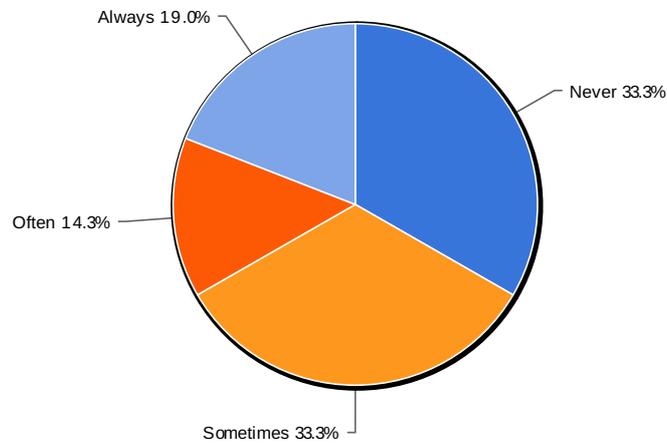


16. I will purchase additional ingredients for a recipe if it means I can use a food before it spoils.

Value	Count	Percent %
Never	2	9.5%
Sometimes	12	57.1%
Often	6	28.6%
Always	1	4.8%

Statistics	
Total Responses	21

I have a food budget and the recipes I prepare depend on that budget.

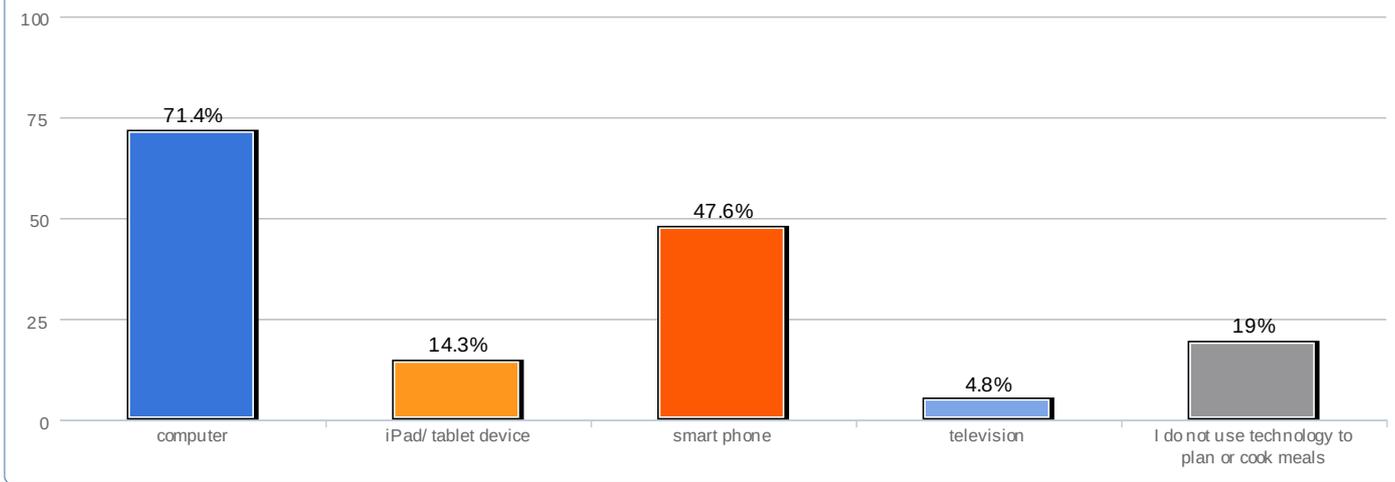


17. I have a food budget and the recipes I prepare depend on that budget.

Value	Count	Percent %
Never	7	33.3%
Sometimes	7	33.3%
Often	3	14.3%
Always	4	19%

Statistics	
Total Responses	21

What technologies do you use when planning or cooking meals? (check all that apply)

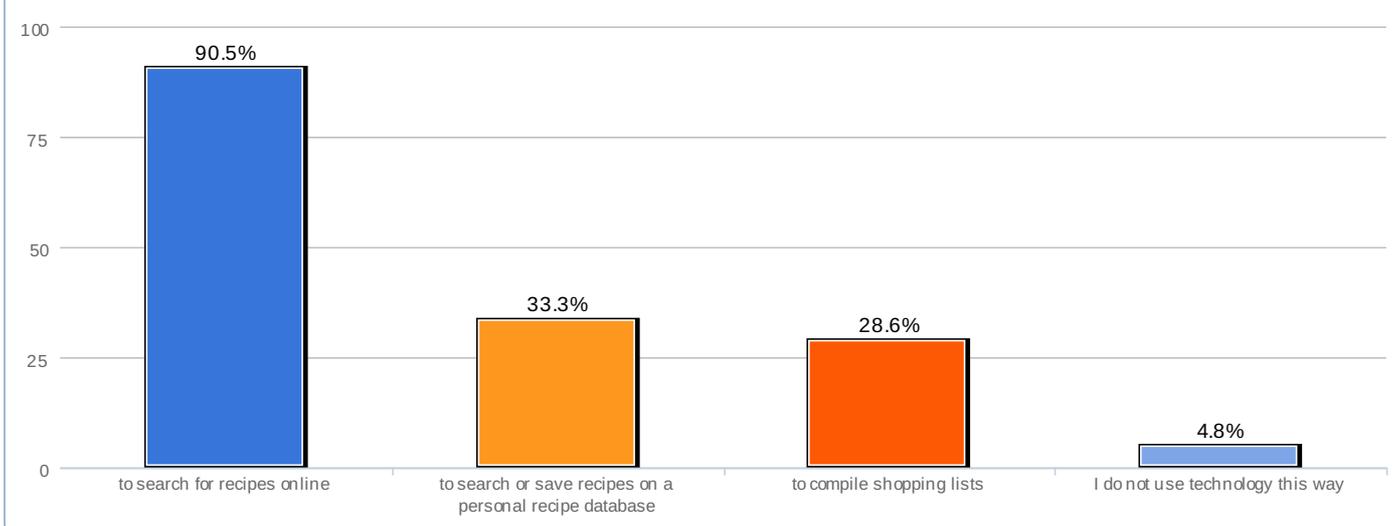


18. What technologies do you use when planning or cooking meals? (check all that apply)

Value	Count	Percent %
computer	15	71.4%
iPad/ tablet device	3	14.3%
smart phone	10	47.6%
television	1	4.8%
I do not use technology to plan or cook meals	4	19%

Statistics	
Total Responses	21

How do you use technology to plan meals? (check all that apply)

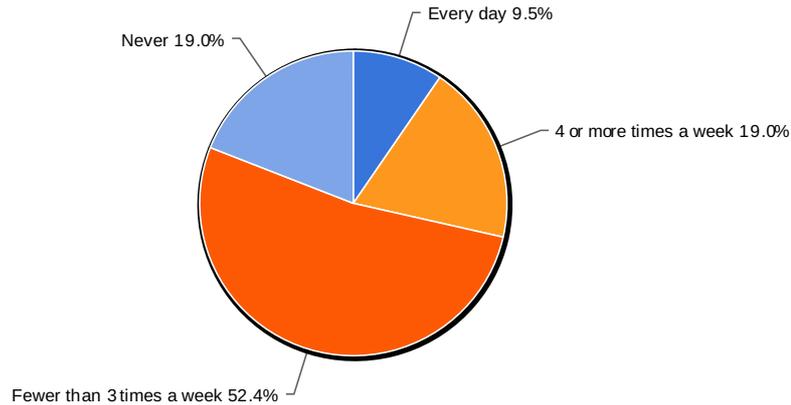


19. How do you use technology to plan meals? (check all that apply)

Value	Count	Percent %
to search for recipes online	19	90.5%
to search or save recipes on a personal recipe database	7	33.3%
to compile shopping lists	6	28.6%
I do not use technology this way	1	4.8%

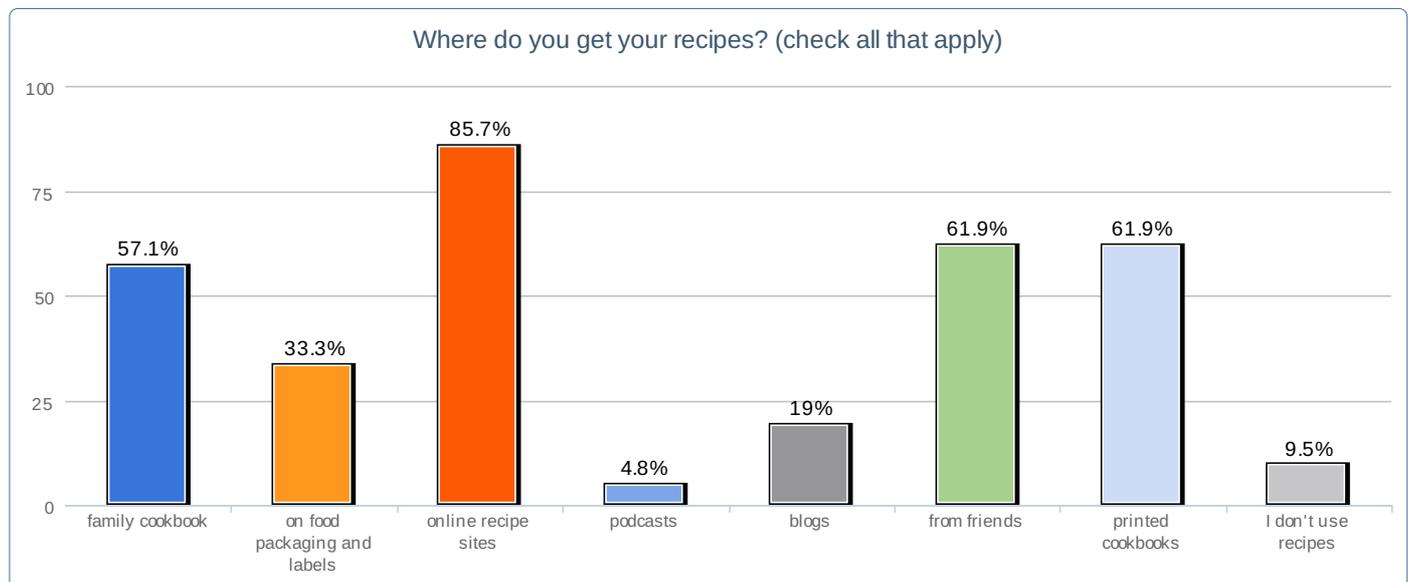
Statistics	
Total Responses	21

How often do you use a computer or personal digital device (tablet or smart phone) in the kitchen? Check ONE that describes you best. (It does not necessarily have to be while you cook).



20. How often do you use a computer or personal digital device (tablet or smart phone) in the kitchen? Check ONE that describes you best. (It does not necessarily have to be while you cook).

Value	Count	Percent %	Statistics	
Every day	2	9.5%	Total Responses	21
4 or more times a week	4	19%	Sum	16.0
Fewer than 3 times a week	11	52.4%	Average	4.0
Never	4	19%	Max	4.0

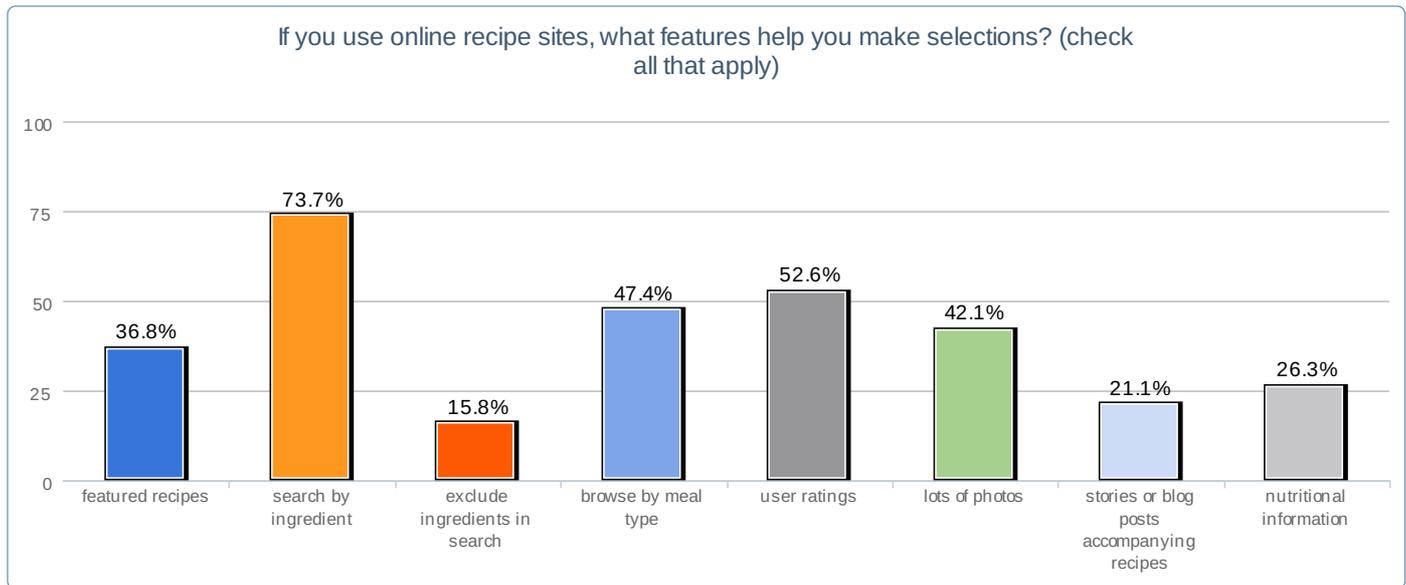


21. Where do you get your recipes? (check all that apply)

Value	Count	Percent %	Statistics	
family cookbook	12	57.1%	Total Responses	21
on food packaging and labels	7	33.3%		
online recipe sites	18	85.7%		
podcasts	1	4.8%		
blogs	4	19%		
from friends	13	61.9%		
printed cookbooks	13	61.9%		
I don't use recipes	2	9.5%		

22. If you read food blogs or use recipe sites, which do you visit? (list names and URLs)

Count	Response
1	All recipes, food network, cooks.com
1	Allrecipes
1	FOOD NETWORK
1	Seriouseats.com
1	allrecipes.com, amythefamilychef.com
1	epicurious, foodnetwork, america's test kitchen
1	epicurious.com
1	google
1	http://vegweb.com/ http://oldsweetsong.com/blogs-i-heart/
1	postpunkkitchen.com
1	tasteofhome.com
1	all recipes, http://allrecipes.com/ whole foods, http://www.wholefoodsmarket.com/recipes/ food network, http://www.foodnetwork.com/recipes-and-cooking/index.html
1	I just google the type of food I want to make and browse a few sites for the recipe with the most specific directions since I'm a beginner.
1	I usually have specific ideas in regards to how I execute the meal prior to doing research. I look for mostly methods that allow me to to put a healthy spin on homecooked/ethnic cuisine.
1	I just google what I'm in the mood for and pick whatever most closely matches what I'm wanting.



23. If you use online recipe sites, what features help you make selections? (check all that apply)

Value	Count	Percent %
featured recipes	7	36.8%
search by ingredient	14	73.7%
exclude ingredients in search	3	15.8%
browse by meal type	9	47.4%
user ratings	10	52.6%
lots of photos	8	42.1%
stories or blog posts accompanying recipes	4	21.1%
nutritional information	5	26.3%

Statistics	
Total Responses	19

24. What is your favorite part of food preparation/planning. Why?

Count	Response
1	Better for you and taste better. You get to see what is actually in the food.
1	Eating
1	I enjoy shopping because it's personal time.
1	I just enjoy the whole process. From chopping to tasting the flavors develop.
1	TIMING ! MAKING SURE EVERYTHING COMES TOGETHER AT THE RIGHT TIME!
1	The anticipation of will they like it or not?
1	cooking together, for the social interaction
1	experimentation
1	the good smells and the meditative process.
1	Dancing to music with my husband. we nearly burn the house down, but somehow the food turns out better
1	I like certain foods and I like knowing where my ingredients come from. So cooking allows for me to have control over what I'm eating. Plus it's fun!
1	Concentrating on the items being prepared is relaxing as fuck and seeing the people you like/love enjoying that item is even better. Cheese.
1	first the planning of the recipe because its fun to determine what you want to eat and try to match it up with what you already have on hand. Then figuring out substitutions and making up or modifying recipes as you go is a lot of fun because its sort mad-scientist / inventor and it's really exciting to come up with your own little variation on a dish - especially when it tastes good
1	(i analyze whats in the recipe to help me decide, pretty trustingly as i am trying to learn) i rarely have to look up a recipe as i am mostly modifying my stables (chicken curry, 5 different soups, simple stuff)
1	I like to imagine what it's going to taste like at the end when I'm planning. My favorite part of cooking is preparing to eat.
1	The part near the end, when I'm just about to eat. Because that's when the aroma is strong, and reminiscent of good food.
1	Making a meal at home that is comparable to something I would get in a restaurant...for a lot less \$\$\$\$

25. What is your LEAST favorite part of food preparation/planning? Why?

Count	Response
1	CLEAN UP
1	Chopping food
1	Cleaning dishes!
1	Cleaning up.
1	Cleaning up. Is that part of preparation?
1	Cutting onions. Washing spinach.
1	Deciding what to cook.
1	Deciding what to make
1	If I burn something by accident, or if I try something new and it doesn't taste good.
1	Least favorite is getting the total cost & realizing that I could eat out for that.
1	Not having the right ingredients
1	Not knowing what to do and feeling like I don't know where to start.
1	Planning around what's on sale/in season
1	Raw meat. Its slimy.
1	Spending too much time looking for a good recipe, cuts into relaxing time
1	The grunt work - cutting up stuff, and watching over the food while it cooks.
1	The time it takes
1	When the meal is over?
1	clean up

1	making sure i have ingredients on hand
1	purchase..... it's expensive
1	My least favorite part is when the recipe doesn't include enough details for me to successfully prepare the dish. A lot of recipes assume a moderate level of experience in the kitchen, which I don't possess.
1	I am terrible at making different dishes finish cooking at the same time. This is frustrating. Also, cooking for one is not very efficient.
1	pretty much all of it. Because I have other things that I need to do instead of thinking about planning meals.
1	if im hungry now and am trying to do to many things at once - cooking can be stressfull in this way
1	having to spend money on all the ingredients that won't all get used and most will expire. all simply to make one dish.
1	Figuring out what to buy at the damn grocery store. This is difficult because I've lost my sense of self and that's never going to be anybody's favorite anything.
1	Not having the right ingredients/going shopping. Supermarkets make me feel fuzzy and out of place and I never find stuff in the aisles.
1	cost budgeting. It ruins an otherwise good time. Also, the actual shopping at the store. Finding obscure ingredients can be very time consuming. The worst is when you get home and your starting to get everything ready and you realize that you've forgot something and need to go back out.

26. How could this undesirable aspect could be improved? Briefly list any ideas that come to mind.

Count	Response
1	By allowing myself to get fat?
1	Extensive therapy
1	HIRE AN ASSISTANT - THROW THE DISHES AWAY?
1	Have a woman cook.
1	Helpers Dishwasher
1	I need Rosie from the jetsons to help clean the chaos.
1	I really like fresh ingredients, so maybe a product that makes it easier.
1	It really couldn't. But the end result is worth it.
1	Manage time better, plan ahead more(boring)
1	One person cooks and another washes or you can use disposable plates
1	Paying closer attention, not getting distracted by other things.
1	Sell chopped and cleaned produce.
1	The only way on this would be to let someone else get the ingredients.
1	good supermarkets that have a food selection that I can deal with
1	having to go to the grocery store is a major deterrent for me.
1	hire a sous chef
1	make it easier to fill my fridge with delicious ingredients
1	smaller portions of popular ingredients, but that's just not practical.
1	stealing expensive food
1	It would be good if there were ingredients bundled in small quantities for people cooking for one.
1	I could be better at managing my ingredients and lists. Some sort of interactive checklist would be great - maybe it could pull the ingredient list of off the recipe(s) that you're shopping for into some new program and then you could just tap them and they would be crossed off as you got them.
1	better information/system for knowing what various stores have on sale, and what's in season in my area
1	1) Batch preparation. 2) Buying raw materials pre-chopped/cut/in some way pre-processed. 3) A *programmable* machine to do this.
1	Photos at each stage of the preparation process. Specific stove settings, precise timing. I realize that each kitchen setup has different temperatures, but unless you know your setup really well, the vagueness of recipes means that you don't have a starting point from which to adjust temperatures/times/settings in future recipes.
1	no solution to this. id say having snacks on hand is key. if you can have an appetizer now, and cook later at 9 because of bad planning, ill be a little more full, but that's okay cause im all about the leftovers

27. Please place each of the following in an order with the top one being the most important thing that determines your grocery list and the bottom one being the least important.

Item	Total Score ¹	Overall Rank
nutritional balance	87	1
budget	84	2
trying new things	82	3
dietary restrictions	51	4

Total Respondents: 31

¹ Score is a weighted calculation. Items ranked first are valued higher than the following ranks, the score is the sum of all weighted rank counts.

If some other factor is more important to you, please list it below:

Count	Response
1	COMFORT FOODS
1	How many dishes I get dirty.
1	Quality of ingredient
1	Whole Foods looks down on me.
1	time
1	taste - cost + health benefits factoids, that sounds cool. im like, waht the fuck IS cinnamon, know what i mean? it would be cool to know stuff about budget. for example if i really knew that my pot of chicken curry was 20 bucks, i eat that 5 times and i got smooth numbers. id prefer if this were like not too many inputs, just really raw numbers and estimates (6 servings, 2 bucks a serving)

28. If the following features were available to you as you selected food to prepare, how likely would you be to use them?

	Not likely	Somewhat likely	Very likely	Total
Factoids about foods in selected recipes	32.3% 10	41.9% 13	25.8% 8	100% 31
Nutritional information	9.7% 3	32.3% 10	58.1% 18	100% 31
List creation from selected recipes	16.1% 5	48.4% 15	35.5% 11	100% 31
Budget tracker for selected recipes	22.6% 7	45.2% 14	32.3% 10	100% 31

URL Variable: crc

Count	Response
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URL Variable: id

Count	Response
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