Merquery

Software Design

Team Green

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1. Statement of Work

Although Viant Inc. is an internet marketing service with massive amounts of data, they do not have cohesive way to organize or access it. Our task is to create a data exploration tool that makes it easier for a select number of employees to access the data. Currently, data is accessible only by developers who know SQL. Our goal is to organize the data and present a user-friendly interface that allows personnel to access and sort the data as they wish. This tool will increase the productivity of every team member and therefore minimize time spent on this task. This tool will also provide a more appealing and straight-forward way to find information needed to create advertisements. To accomplish these goals, we will create an easy-to-use interface that allows users the freedom to search for any information they may need.

1.1 Implementation Process

The tool will be developed by understanding the needs of different members of the Viant team. The tool will be initially developed and prototyped using a small, encrypted subset of the consumer data that will later be scaled to incorporate all of the data that Viant possesses.

1.2 List of Technologies

The data exploration tool will be built using HTML, CSS, JavaScript, and Bootstrap. JavaScript and JQuery will be used to create the web application since it is easier to implement and flexible. We will also use HTML to create the web pages and CSS to style them. Google BigQuery (GBQ) will be used as the backend of the tool. The members of the Viant team will populate the database.

2. Assumptions

2.1 Need for the System

It is assumed there is a need for this product at Viant to allow greater access to the large amounts of data available to the company and its employees. Currently, accessing the data is inefficient as only a handful of employees can access the data. Those with access are commonly software engineers who have experience with SQL, querying data, and handling databases. Viant has requested a system that would present the data in a relevant, understandable way. This system will increase efficiency and allow select employees access to relevant data.

2.2 Software Assumptions

The team is assumed to have access to necessary programming environments, to collaborate through GitHub, and to have sufficient knowledge of SQL as well as any other languages necessary.

2.3 Hardware Assumptions

The team will have access to computers with the necessary memory and efficiency through which they can make progress.

2.4 Assumptions about Environments/Data

Viant will provide a subset of anonymized data for prototyping. The subset is assumed to be similarly structured to allow easy integration of the system to the actual data. Viant will be able to answer/guide about the meaning of different areas of the data provided (for example: different labels on every section) through meetings/interviews.

3. Personas and Scenarios

3.1 Personas

3.1.2 Persona 1

Jonathan is a team leader for Viant. He has been working for the company for seven years now. He understands the importance of data when trying to analyze sales patterns and convincing clients to use their services. Although he knows enough SQL to look through the data and search for simple things, he normally does not have access to the data and must go find the sales engineers who do have access. He also realizes that there is a lot of information available for him. However, his limited knowledge of SQL and difficulty in organizing the data, he cannot utilize the data to its fullest potential.

3.1.3 Persona 2

James is a sales engineer at Viant. He is very passionate about his job and has been with the company for four years. He has access to all the data and is very proficient at SQL. He is aware that Viant has a lot of data which can be organized in a way to further to benefit the company. While he is able to view different metrics for the data, he does not have a way to view the connections the data has with each other. Though he has always kept up with the information Viant currently provides, he hopes there will be a good solution to allow him to visually traverse through the data.

3.2 Scenarios

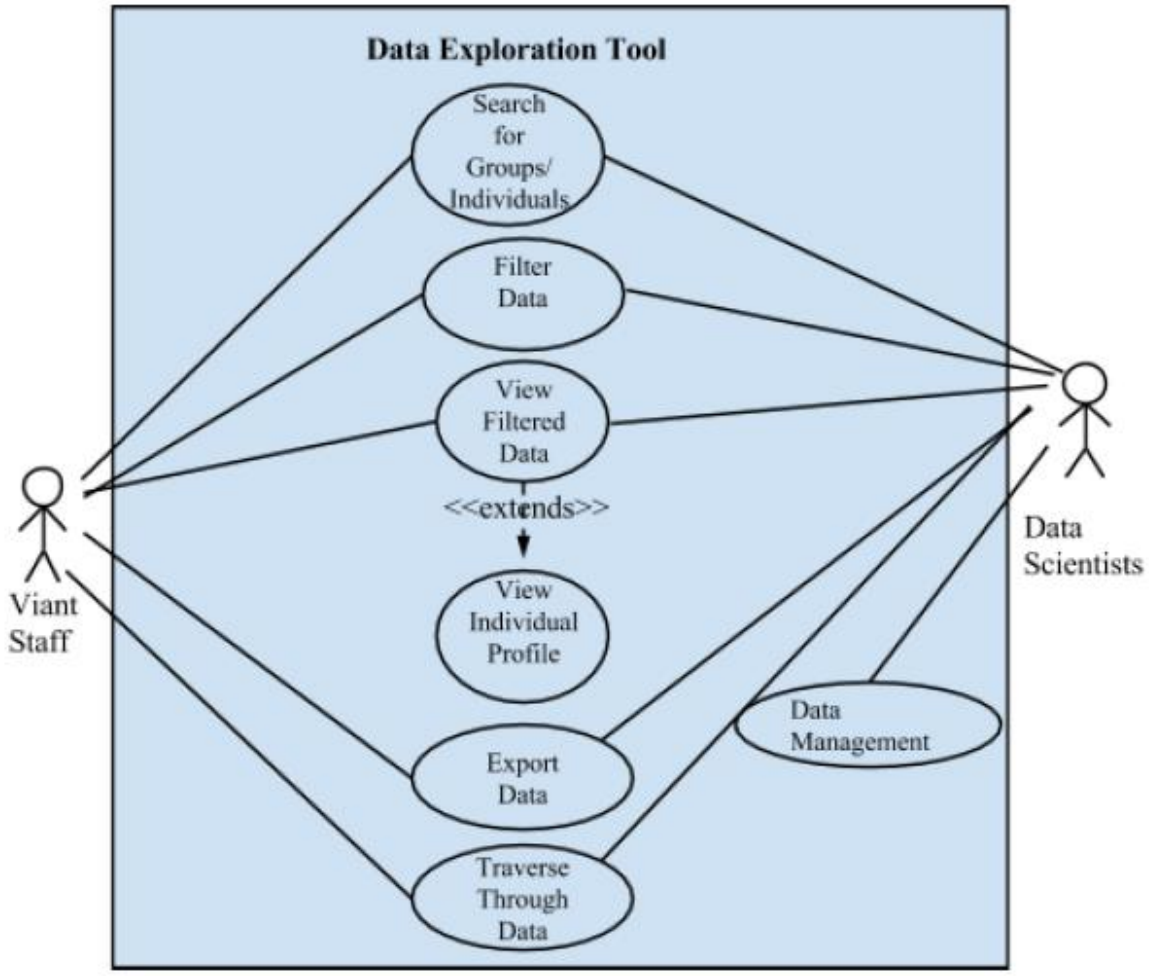
3.2.1 Scenario A (Persona 1)

Jonathan is currently working on recruiting a large business to use Viant's services. Their potential client is skeptical of whether or not they should work with Viant to expand their marketing as they are already successful. To convince them that Viant has very valuable data for their company, Jonathan wants to display data and show how much information can be gathered for individuals. He also does some research and identifies some areas where the company is not targeting. The data exploration tool allows him to quickly filter through the information and display key individuals. With this information, Jonathan is confident they will gain a new client.

3.2.2 Scenario B (Persona 2)

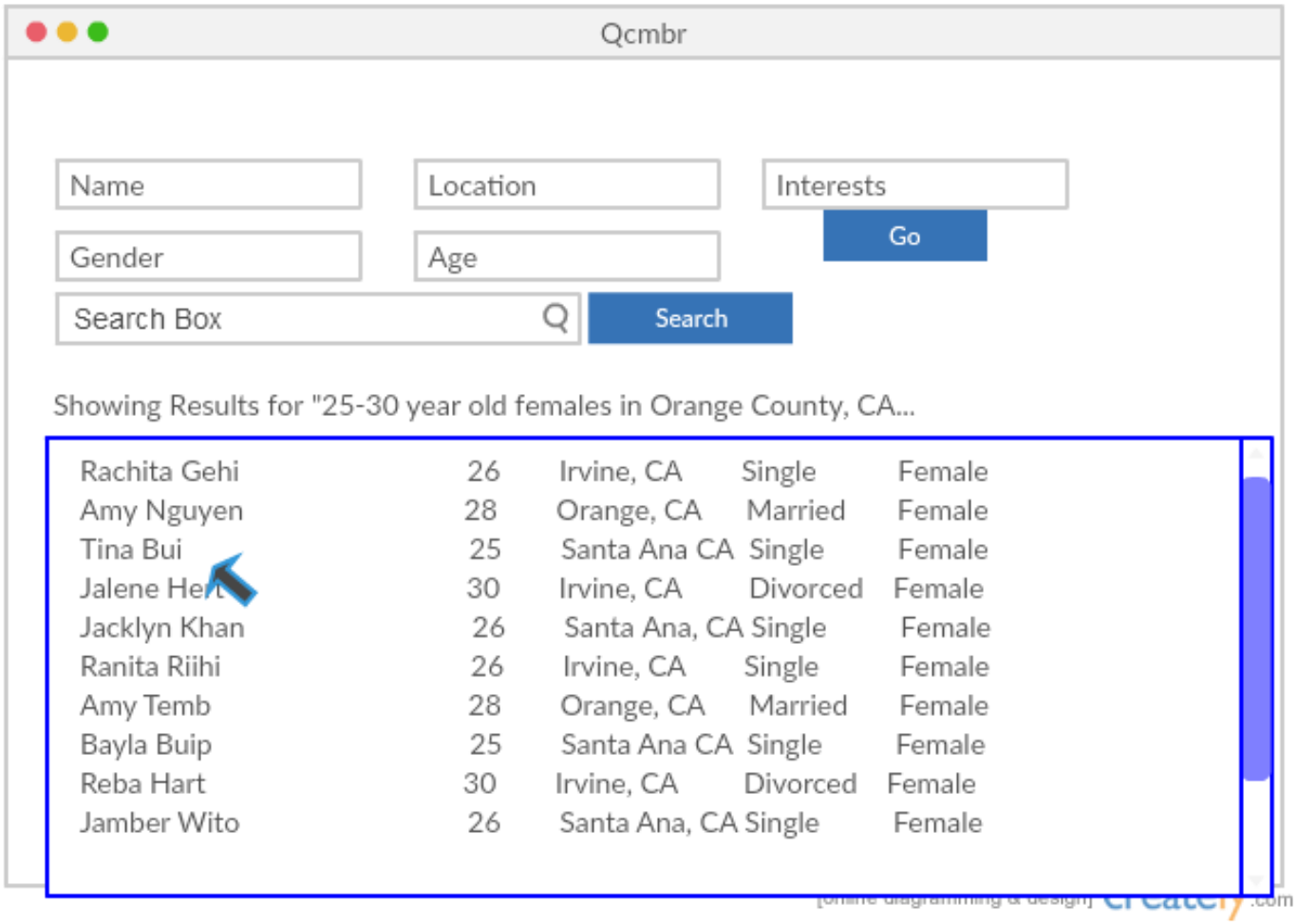
Currently, James is looking at the different metrics on the dashboard. He wishes to view the data connections on different fields. Using the tool, James pulls up a data profile and views the different fields on there. There are lots of data on this person, but is currently interested in the different campaigns the individual is associated with. He finds this way of traversing through information useful because he can report the information to the other teams such as marketing.

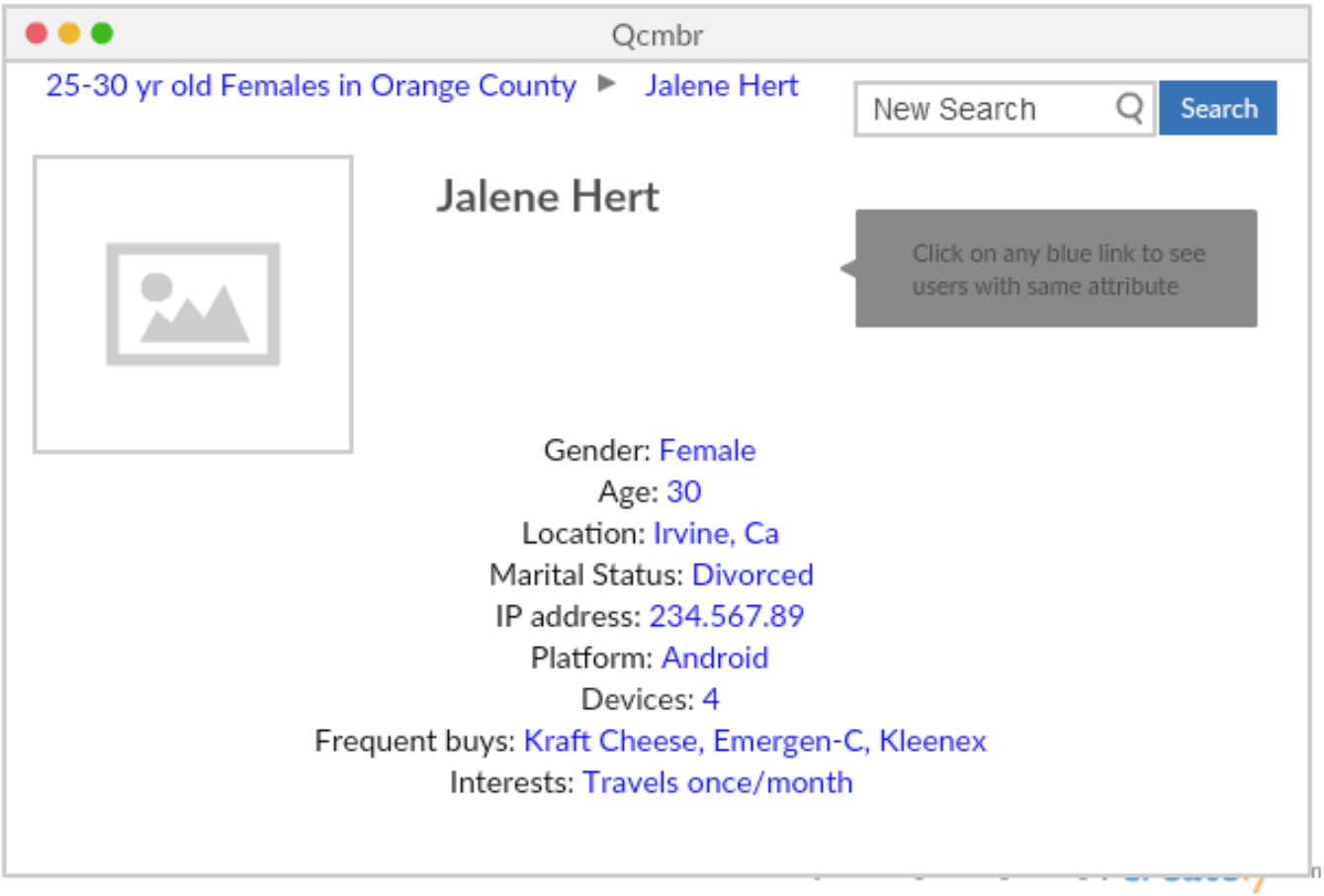
4. Use Case Diagram



5. Wire Frames

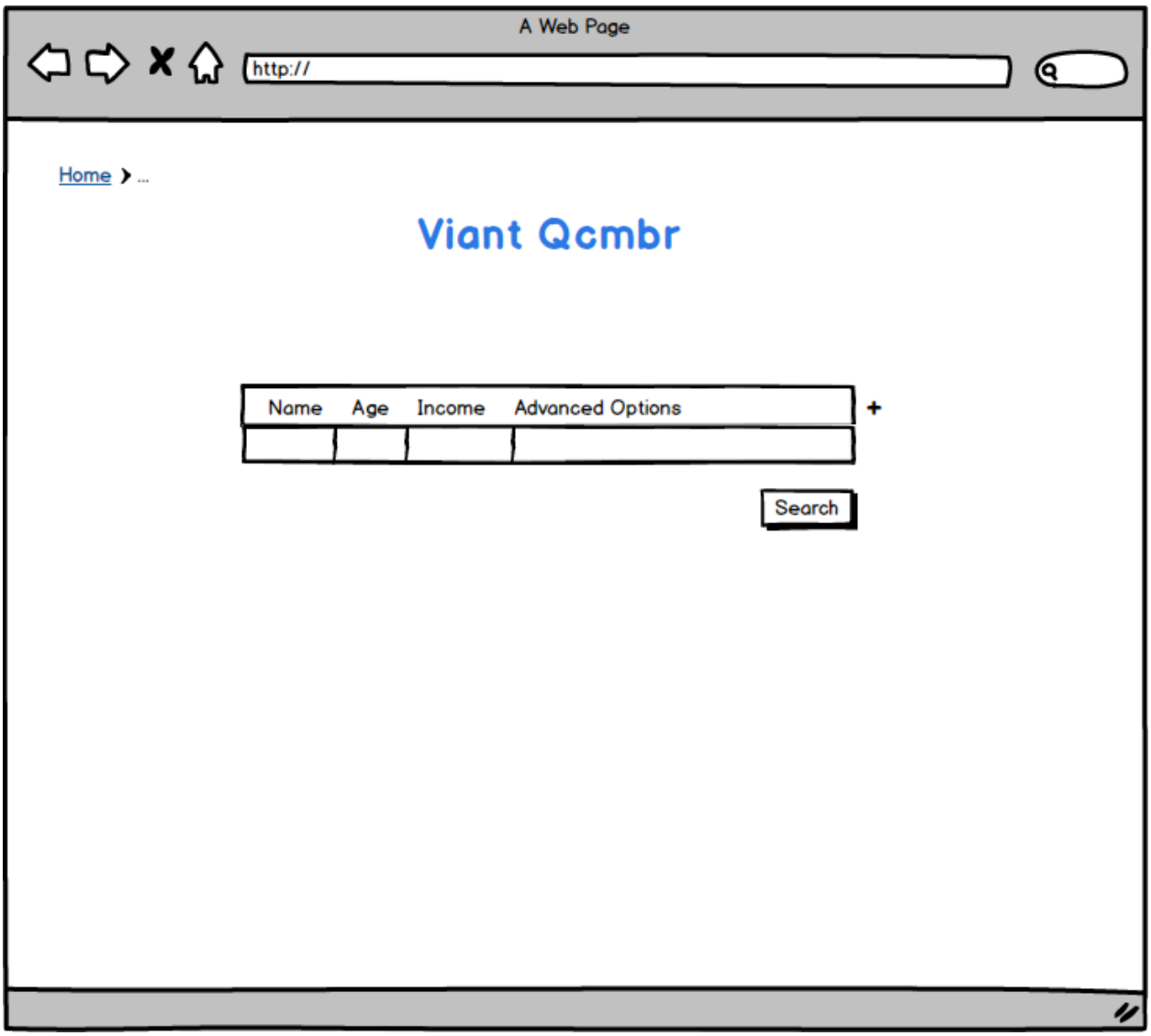
5.1 Wire Frame #1



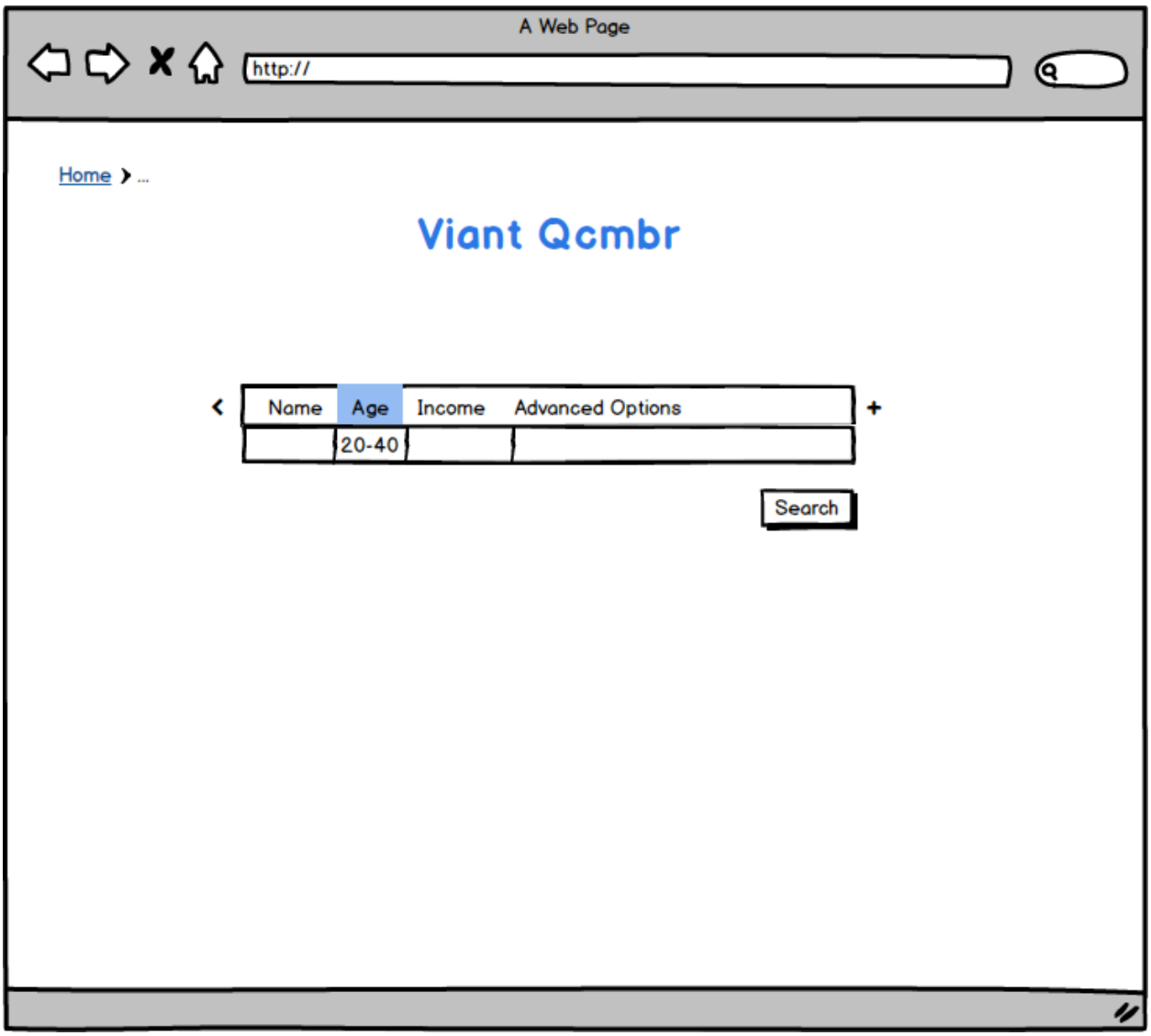


**Traversing will be done with data points building on top of one another

5.2 Wire Frame #2



*The lines under name, age, income indicate that the user can input multiple items and then add the filter. (i.e. The user can input Age: 20-40 and Name: Rachel all in the same instance and then he/she can press + for adding the filter)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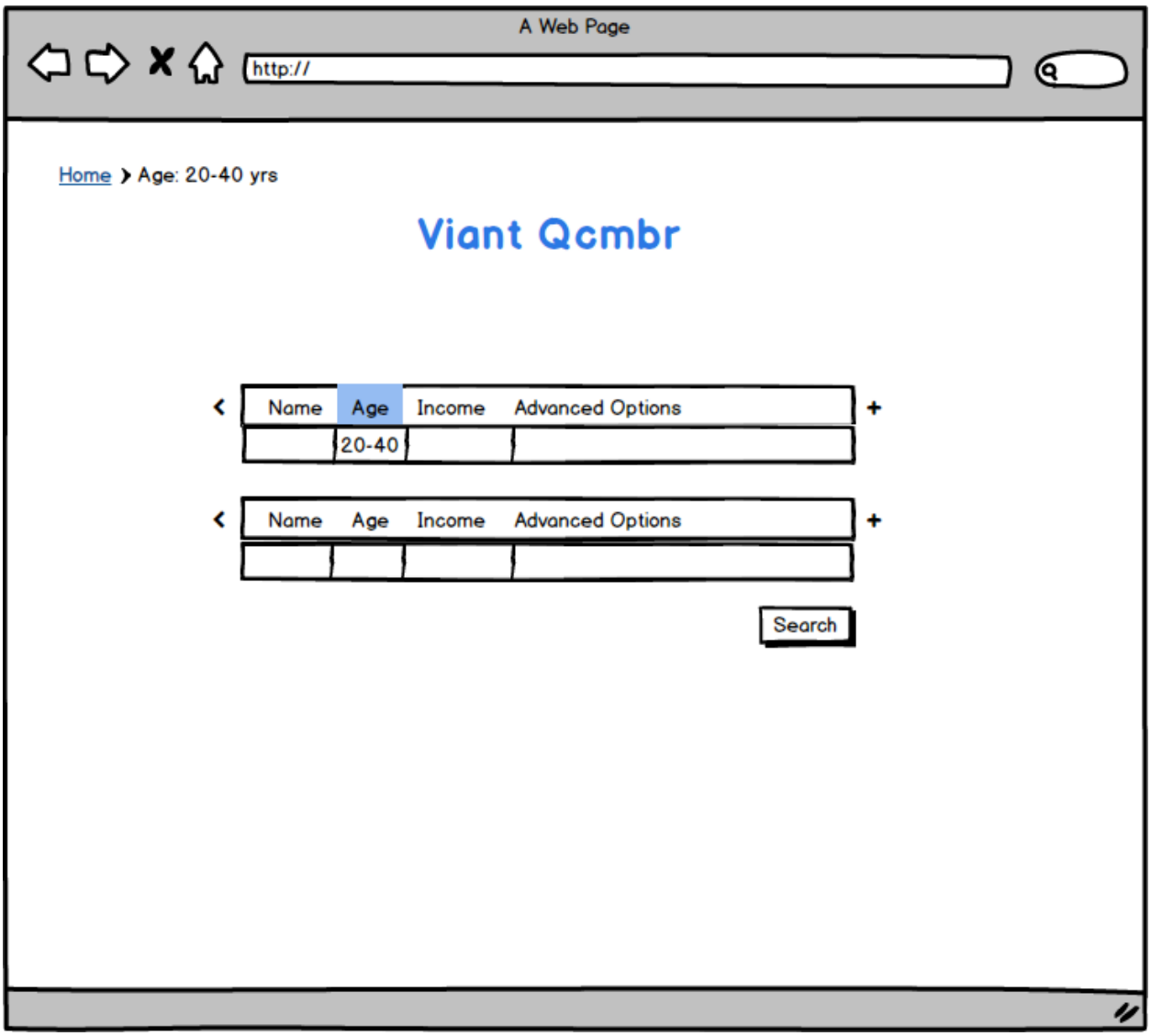
Name
Age
Income
Advanced Options
20-40
Search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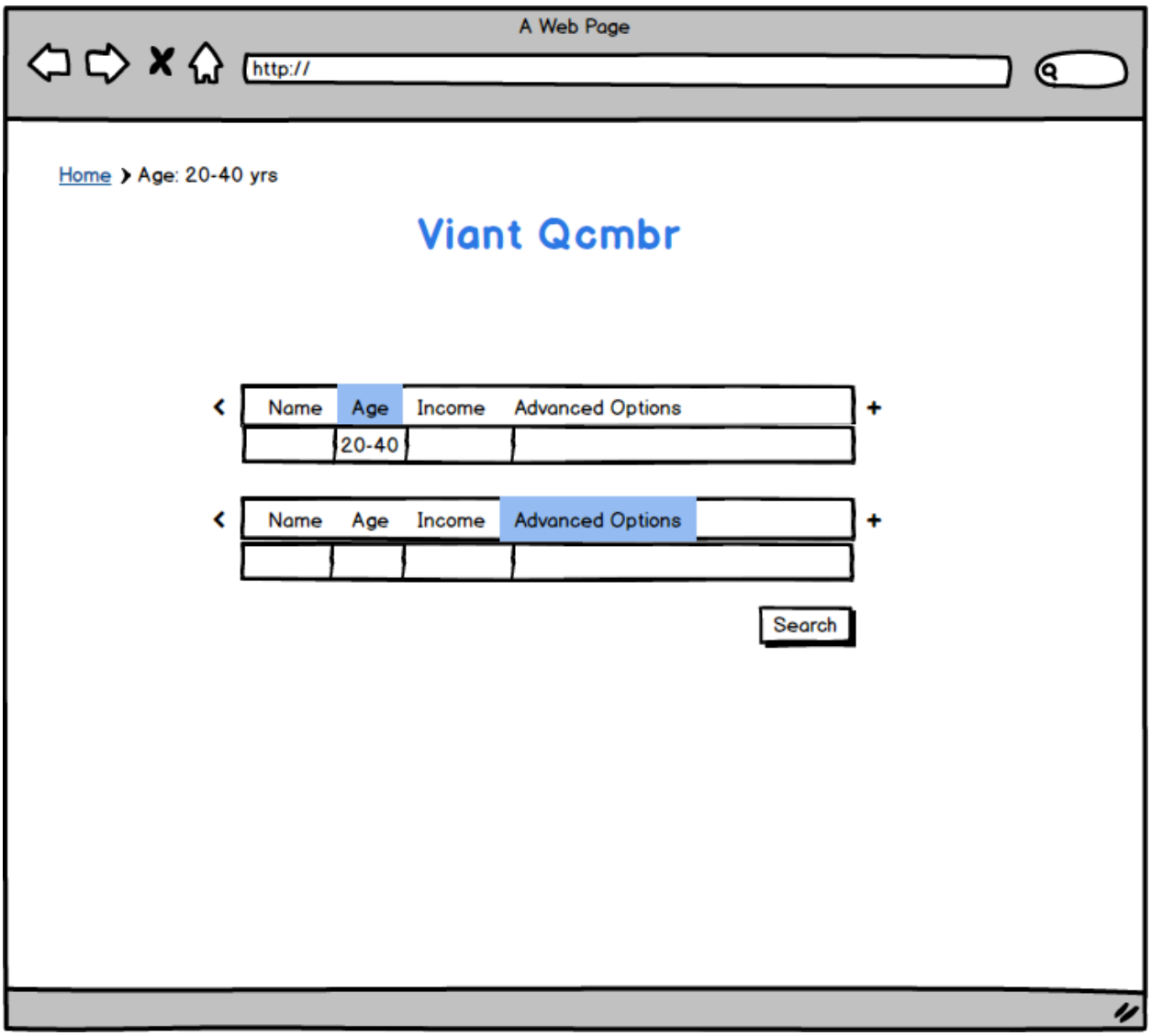
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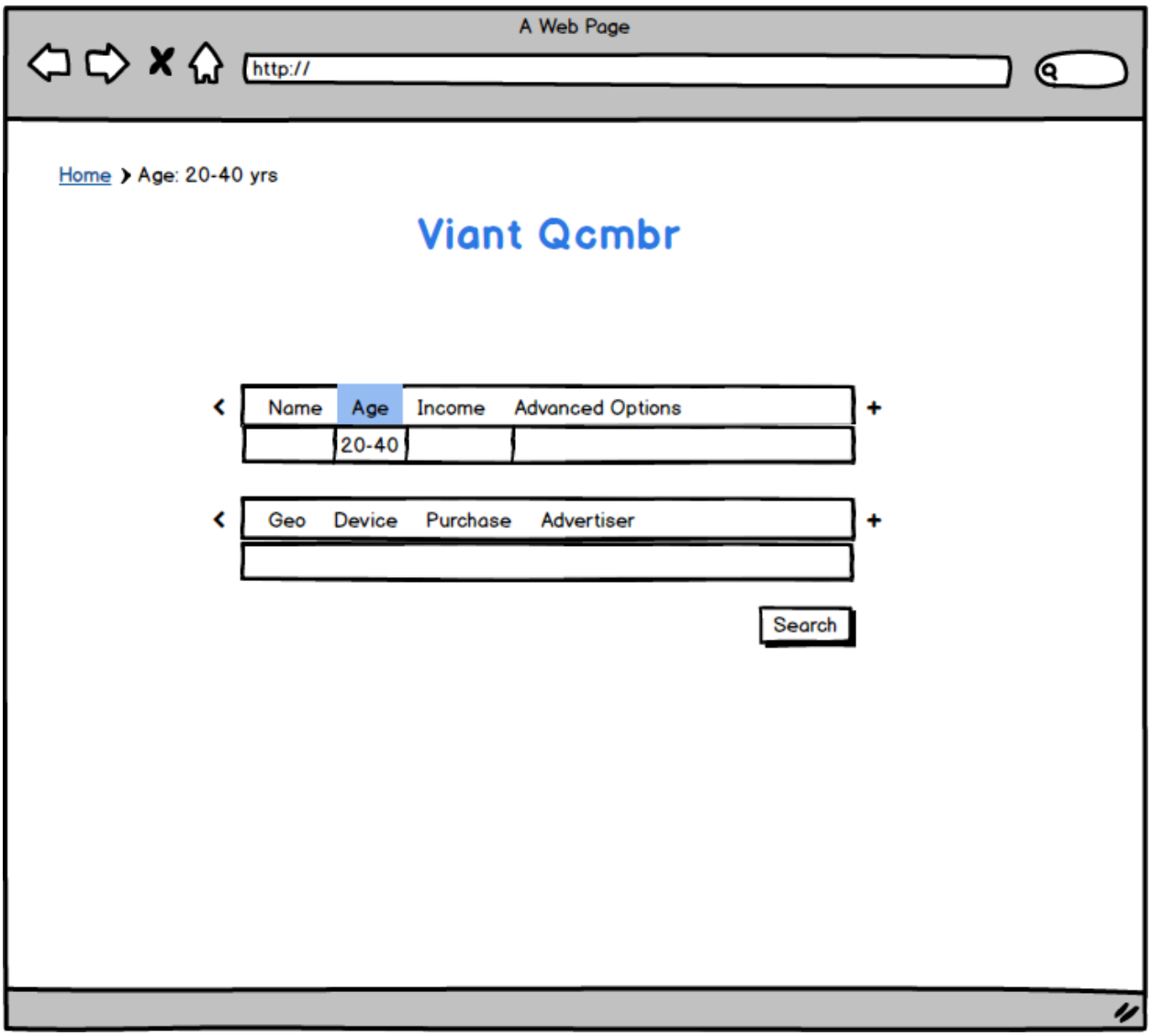
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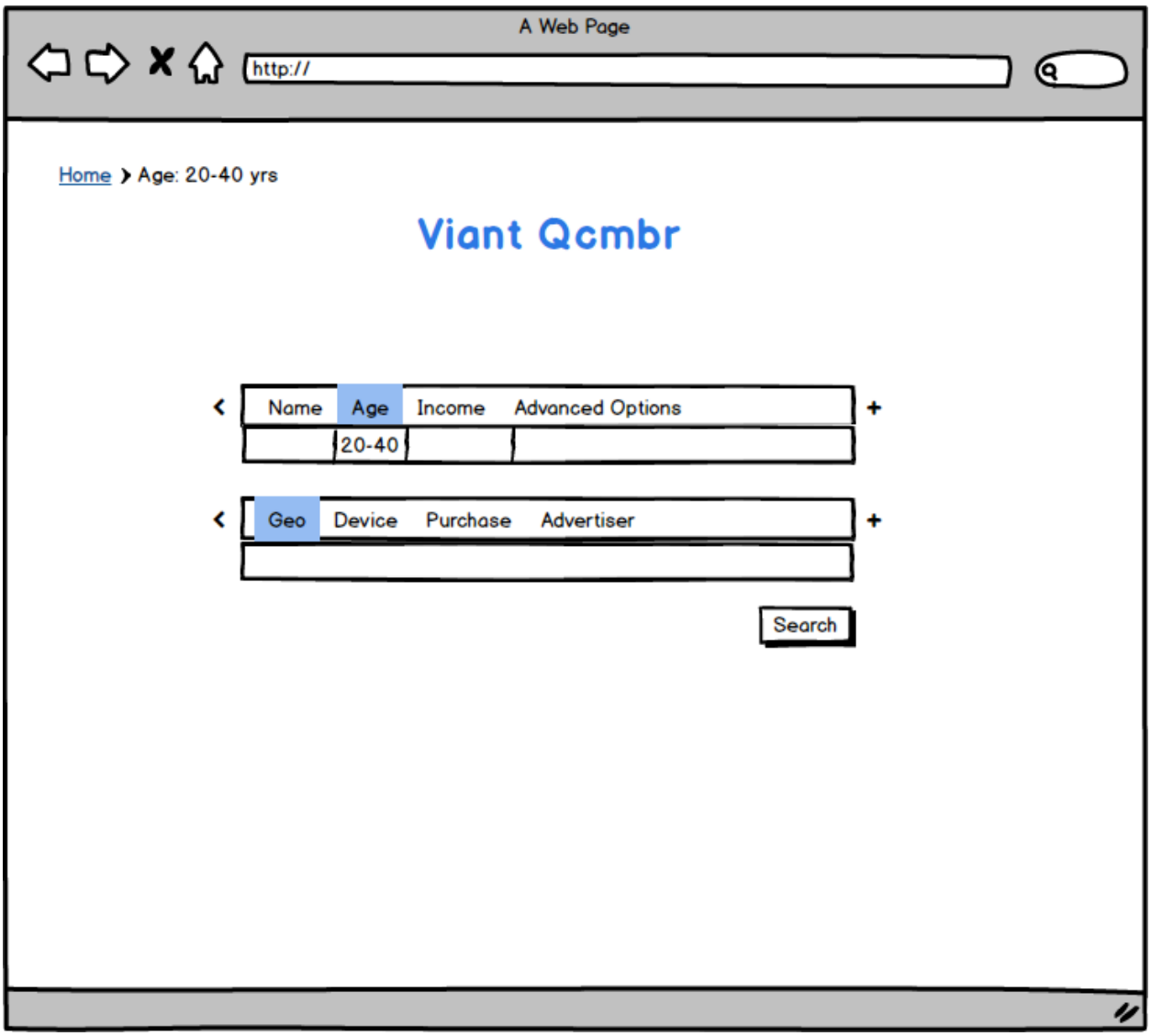
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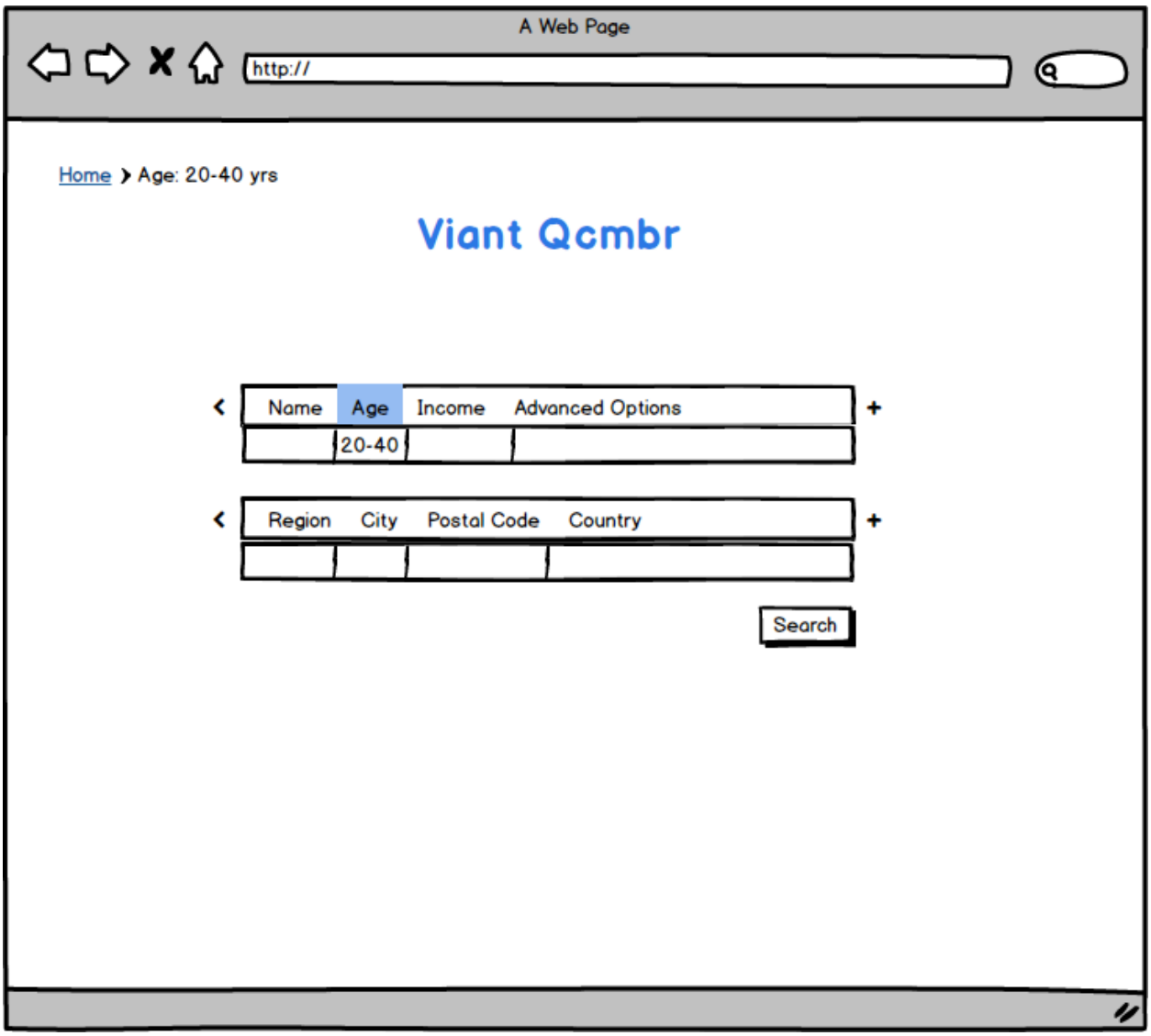
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Advanced Options
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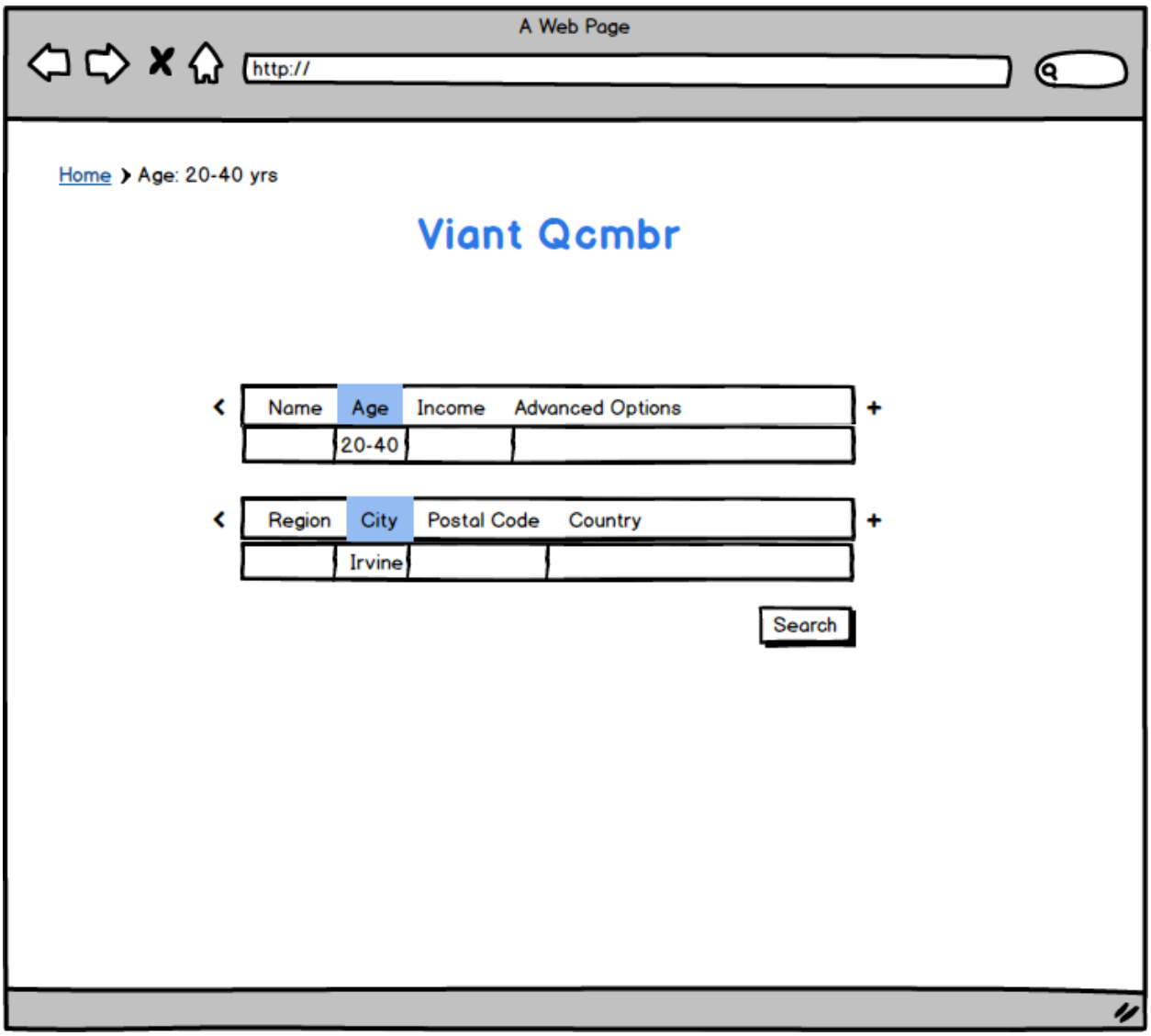
City
Postal Code
Country
Search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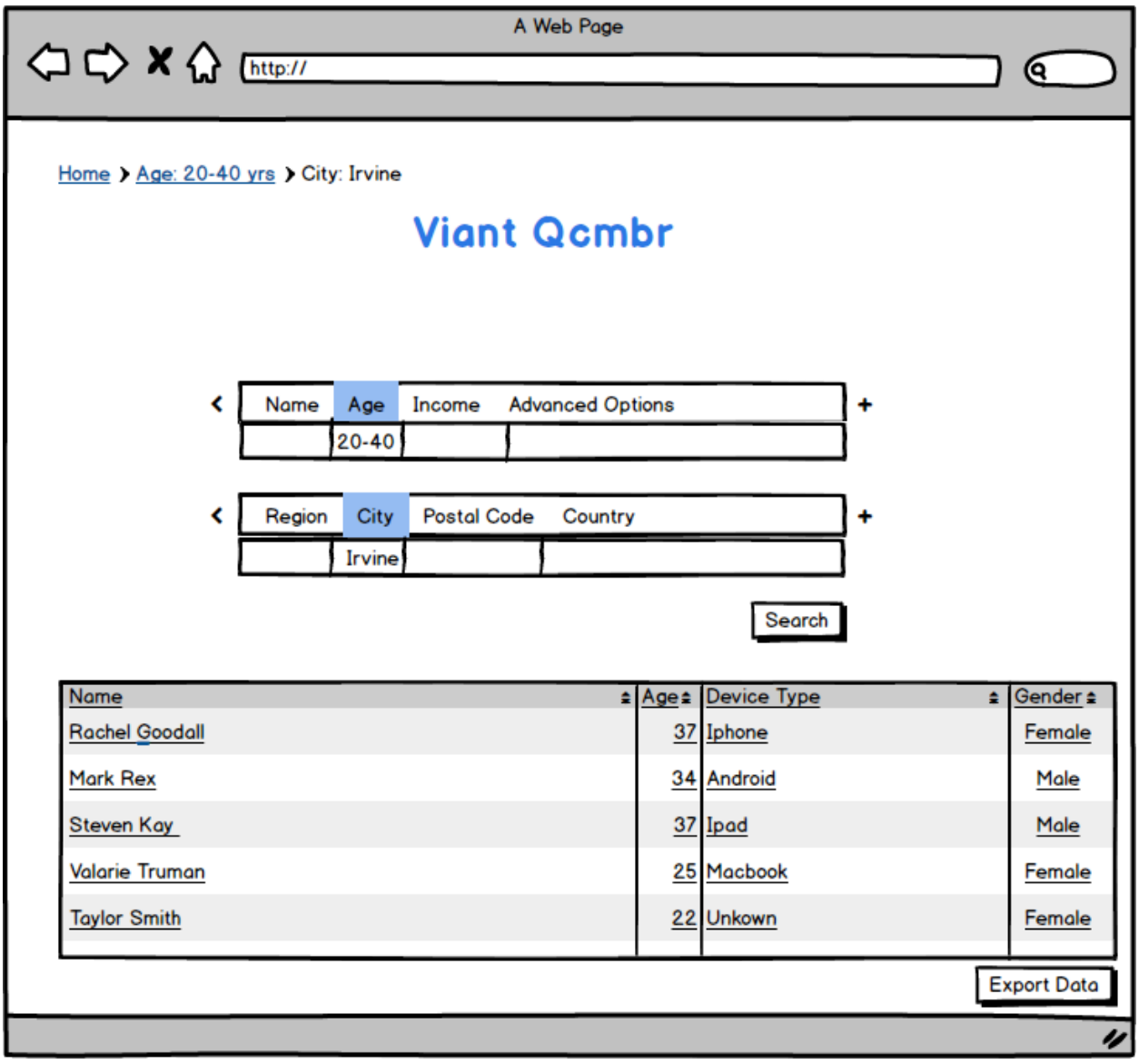
Advanced Options
20-40
Region
City
Postal Code
Country
Irvine
Search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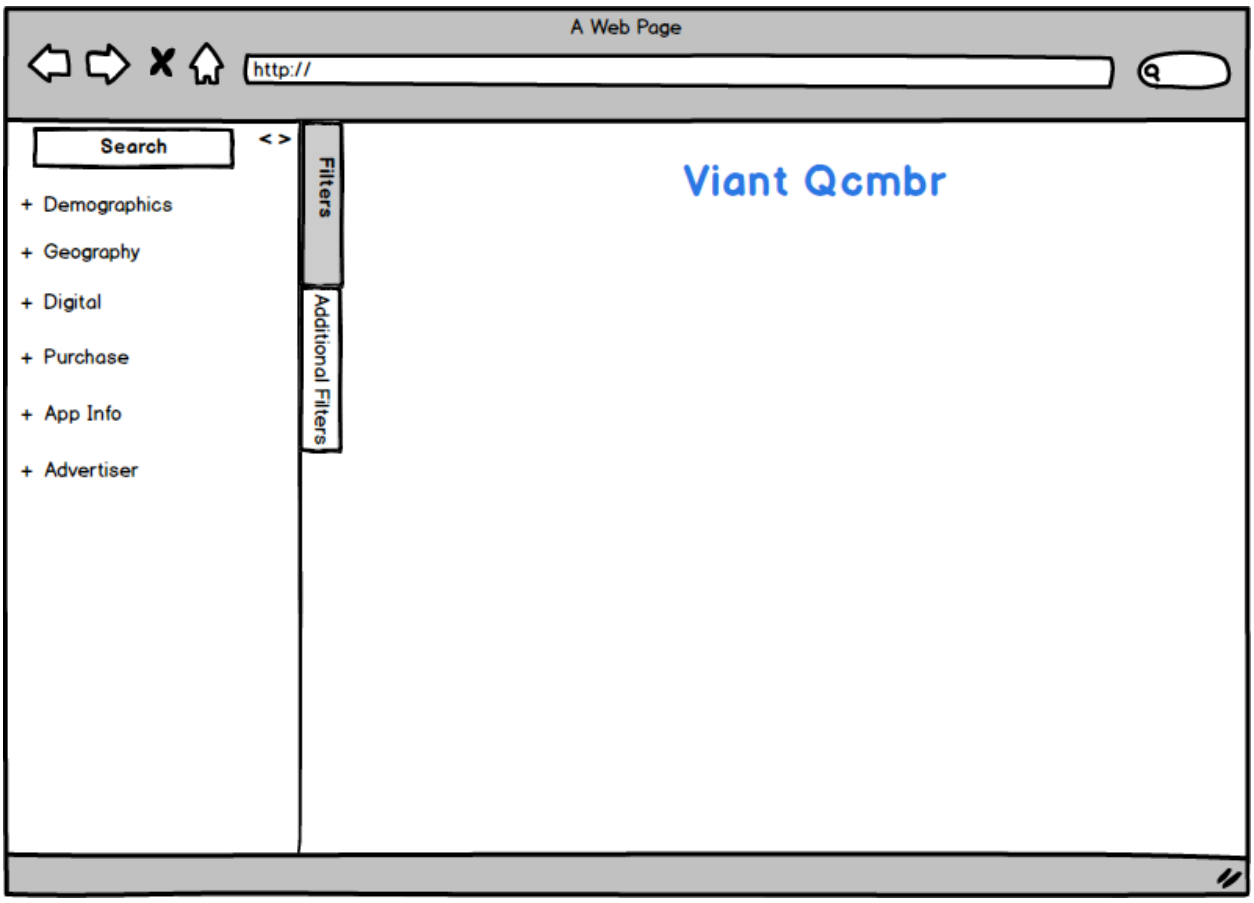
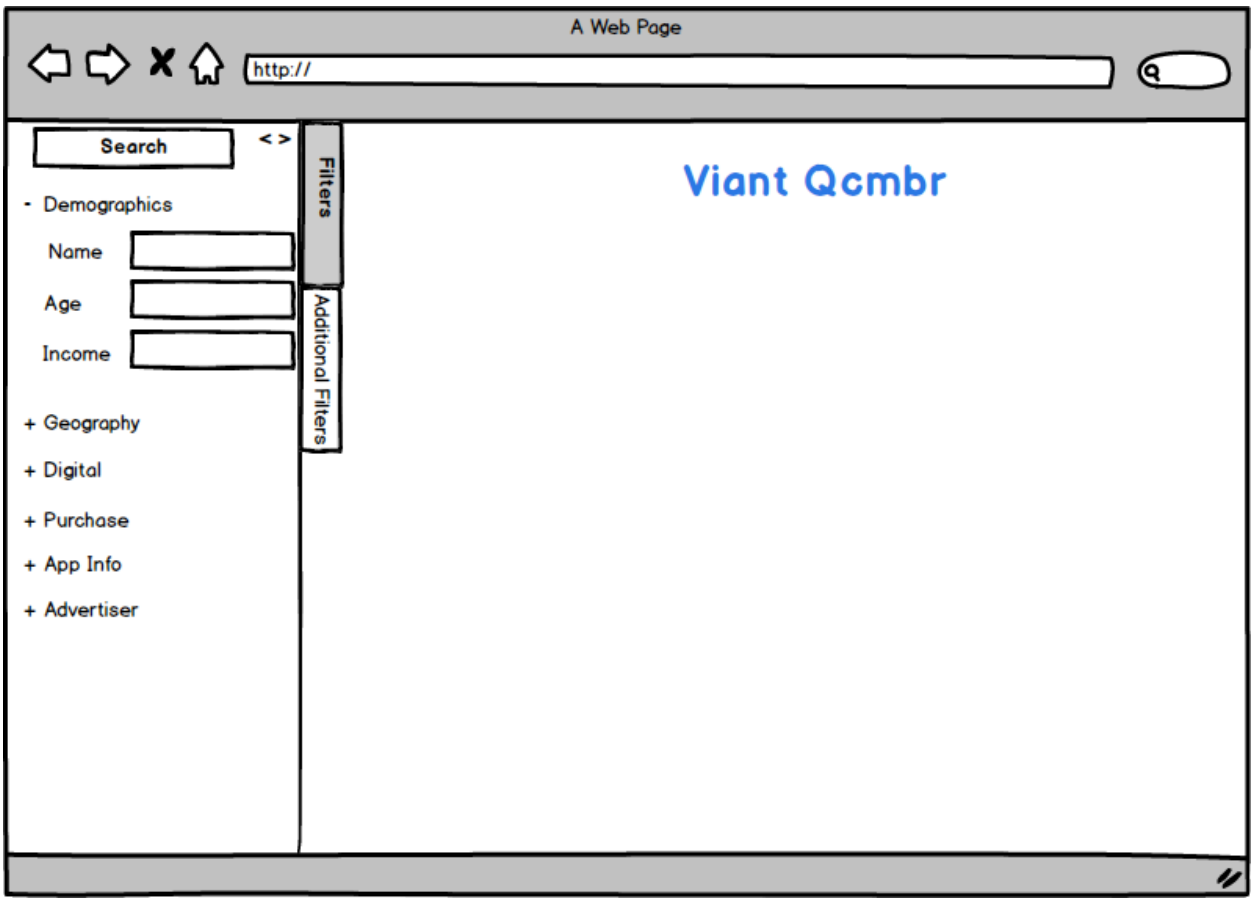
Age
Income
Advanced Options
20-40
Region
City
Postal Code
Country
Irvine
Search
Name
Age
Device Type
Gender
Rachel Goodall
37
Iphone
Female
Mark Rex
34
Android
Male
Steven Kay
37
Ipad
Male
Valarie Truman
25
Macbook
Female
Taylor Smith
22
Unkown
Female
Export Data


A Web Page
http://
Home › Ages: 20-40 yrs › City: Irvine › Rachel Goodall
New Search
Rachel Goodall
City: Irvine
Age: 37
Ethnicity: White
Martial Status: Married
Device Type: Iphone
Device Last Seen: 11-12-2015
Last Known Location: 101.122.1.1
Interests: Travel, Cooking, Shopping
App Info: Candy Crush, Waze

5.3 Wire Frame #3

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+ Advertiser
Filters
Additional Filters
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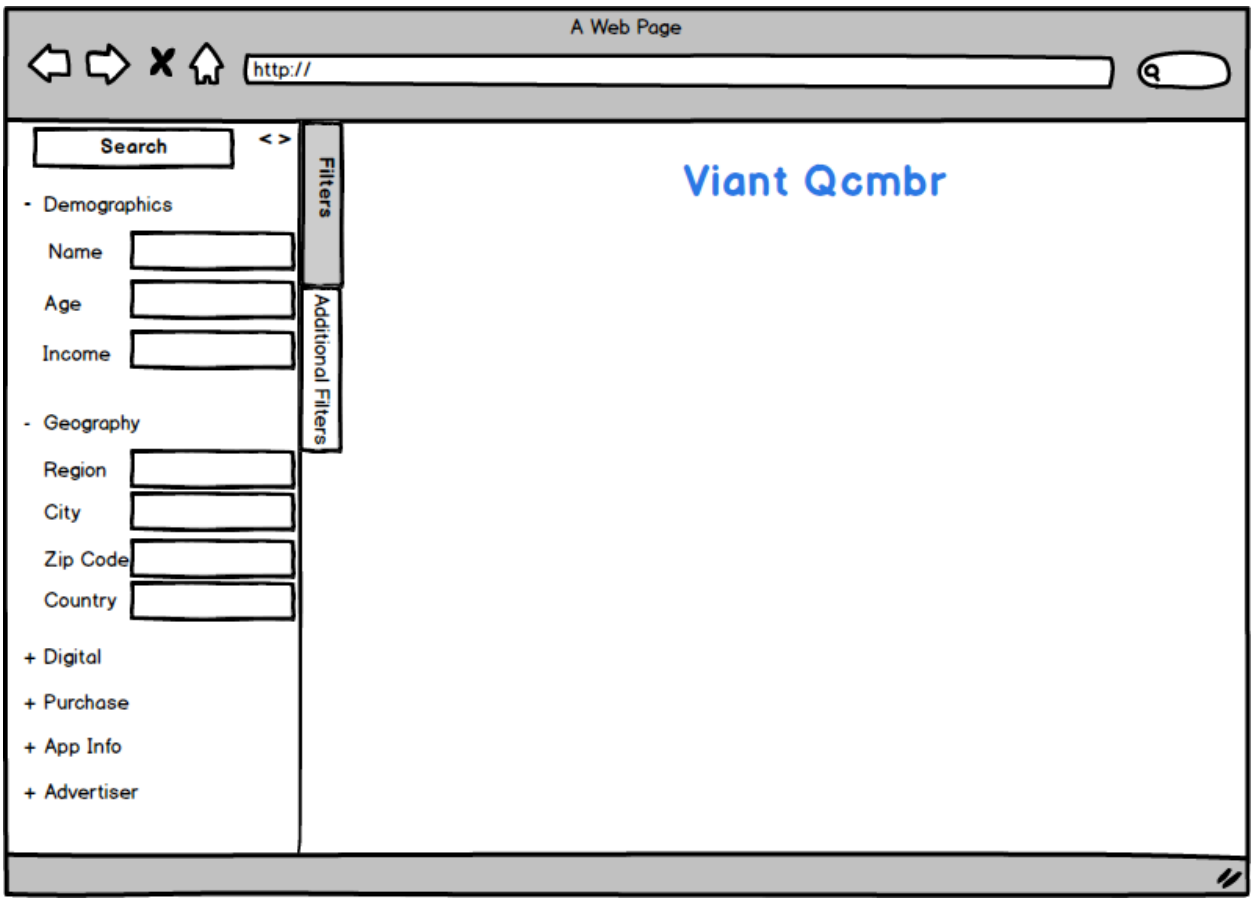
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+ Advertiser
Filters
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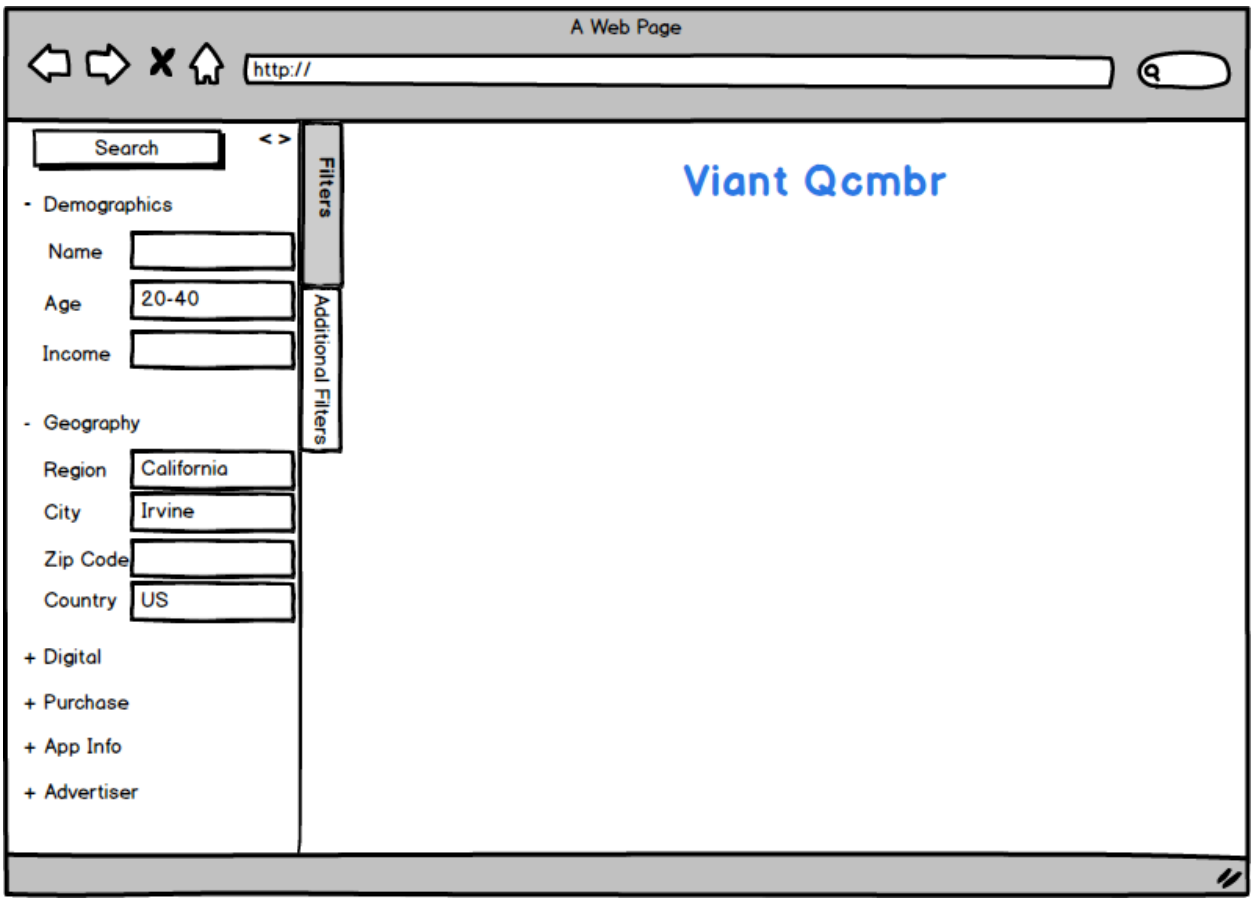
A Web Page
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Search
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- Demographics
Name
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20-40
Income
- Geography
Region
California
City
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Zip Code
Country
US
+ Digital
+ Purchase
+ App Info
+ Advertiser
Filters
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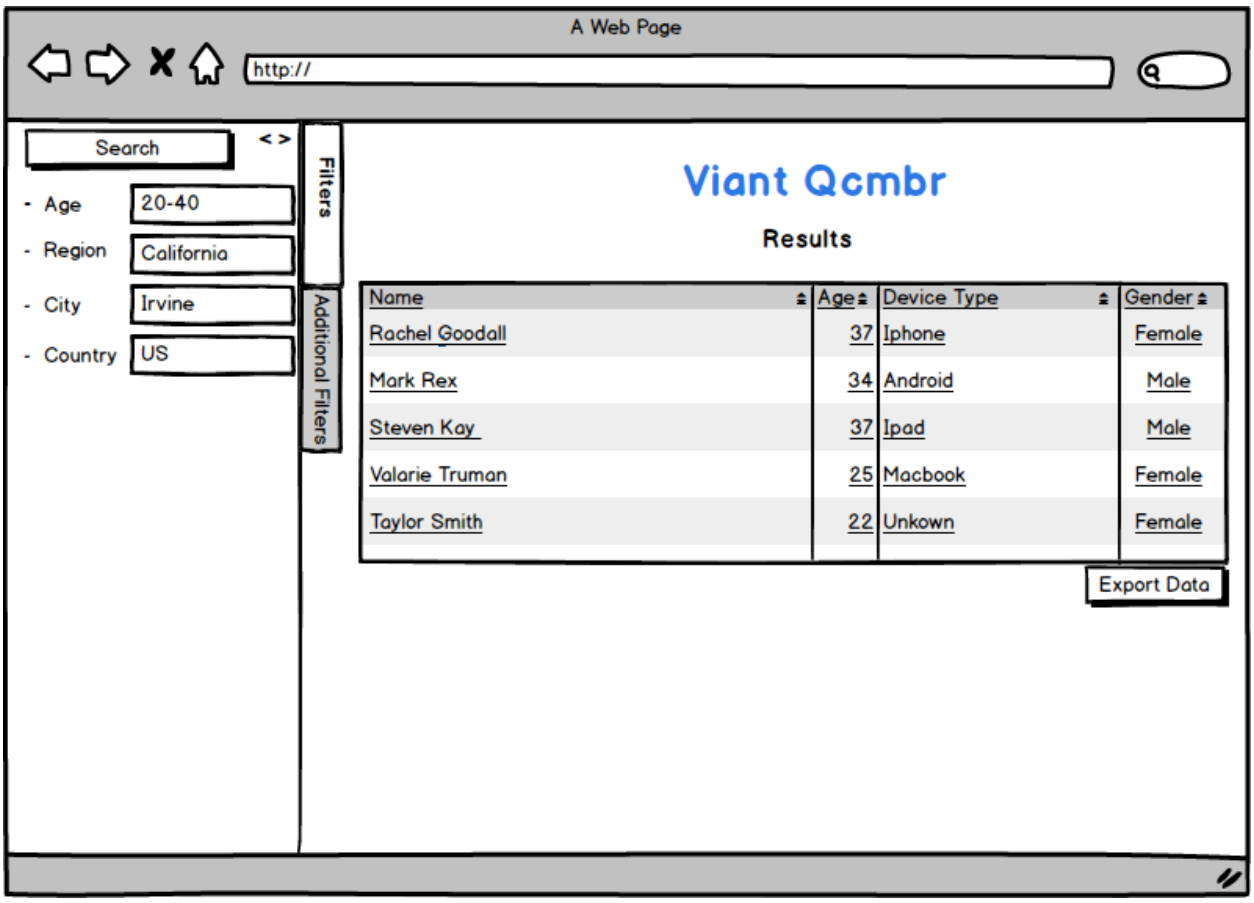
Viant Qcmbr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20-40
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Irvine
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US
Filters
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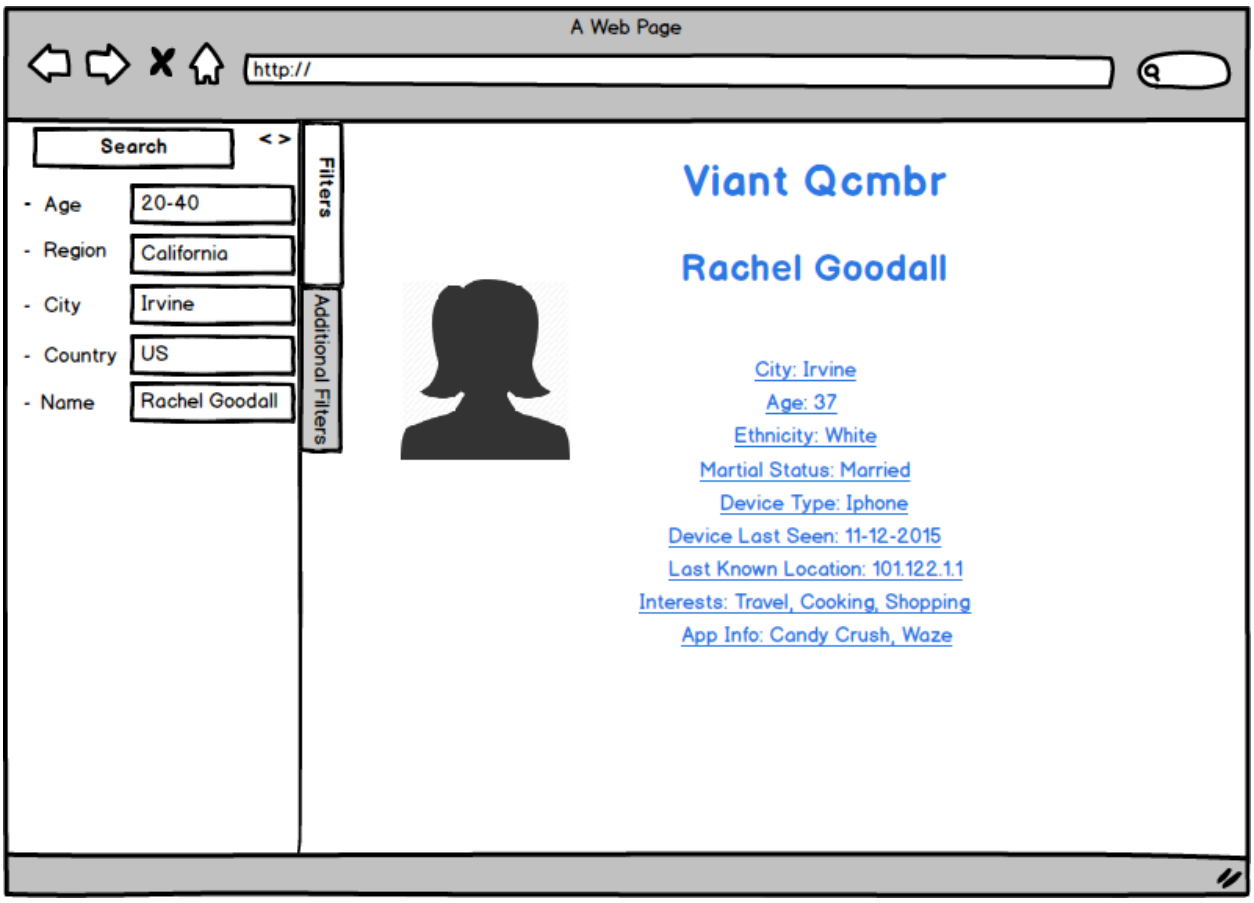
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- Age
20-40
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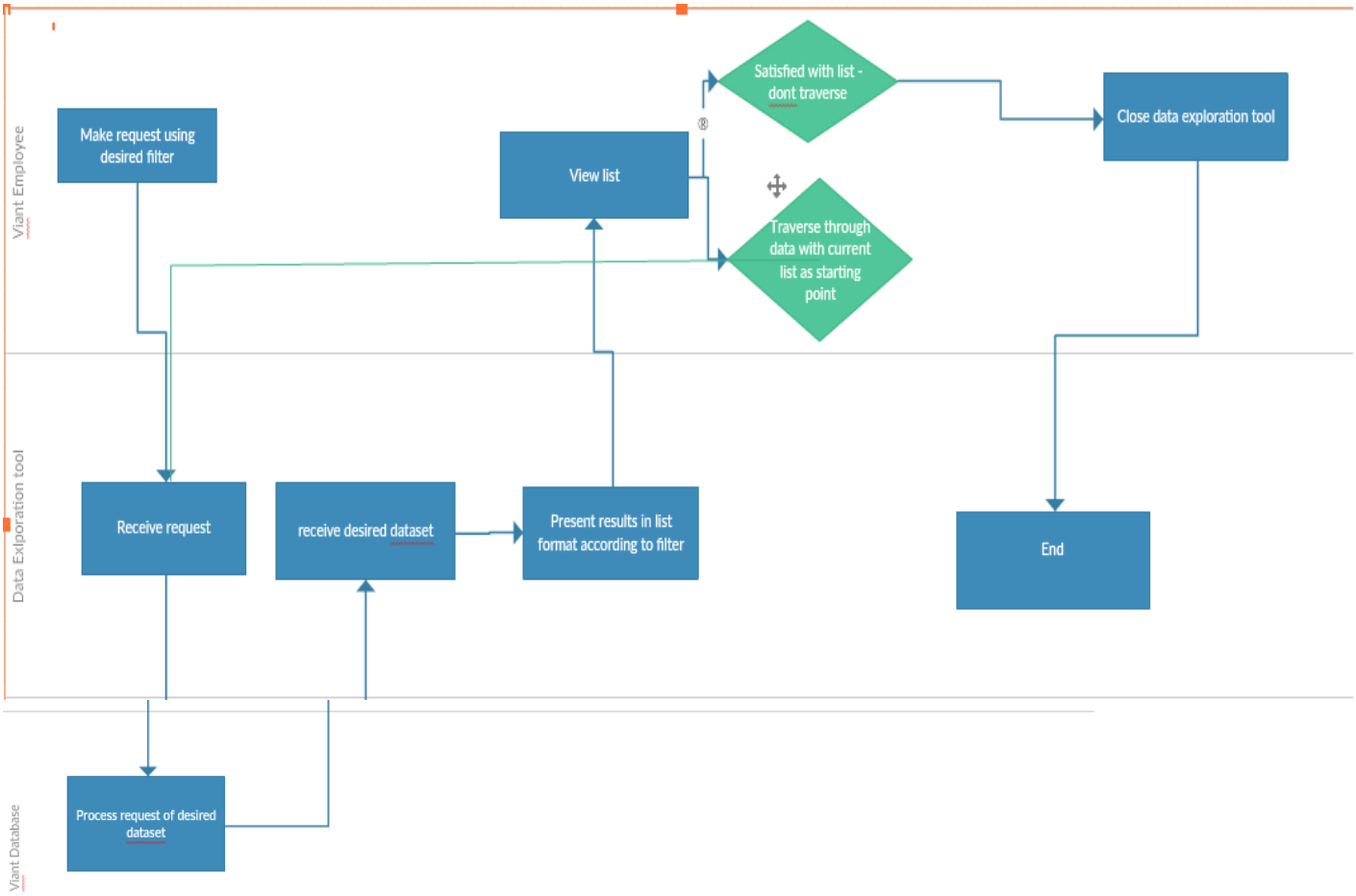
Irvine
- Country
US
- Name
Rachel Goodall
Filters
Additional Filters
Viant Qcmbr
Rachel Goodall
City: Irvine
Age: 37
Ethnicity: White
Martial Status: Married
Device Type: Iphone
Device Last Seen: 11-12-2015
Last Known Location: 101.122.1.1
Interests: Travel, Cooking, Shopping
App Info: Candy Crush, Waze

6. Swimming Lane Diagrams

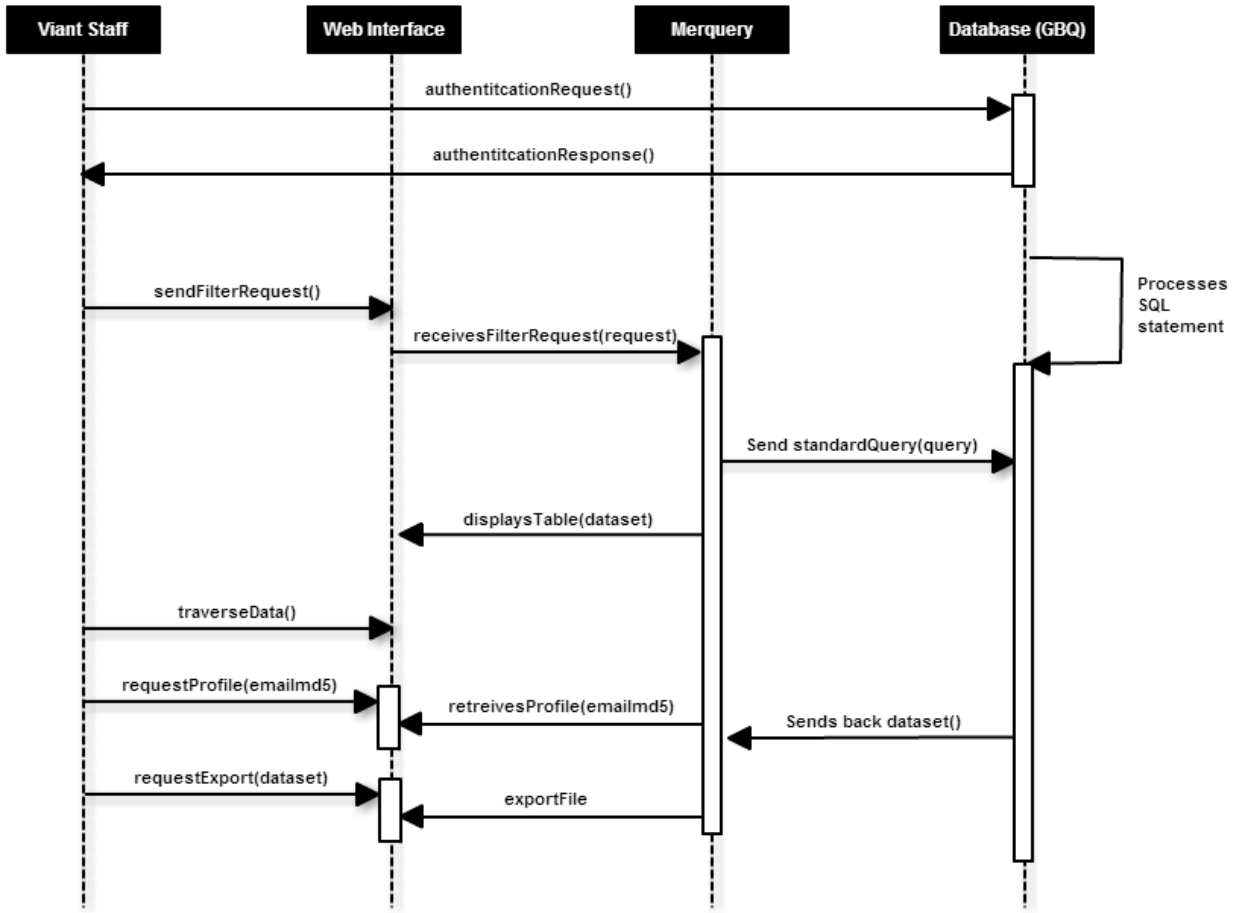


Row 1: Viant employees: Make request using desired filter,View list, Satisfied with list- dont traverse, traverse through data with current list as starting point, close data exploration tool

Row 2: Data Exploration tool: Receive request, receive receive desired dataset, present results in list according to filter, End

Row 3: Database: Process request of desired data set

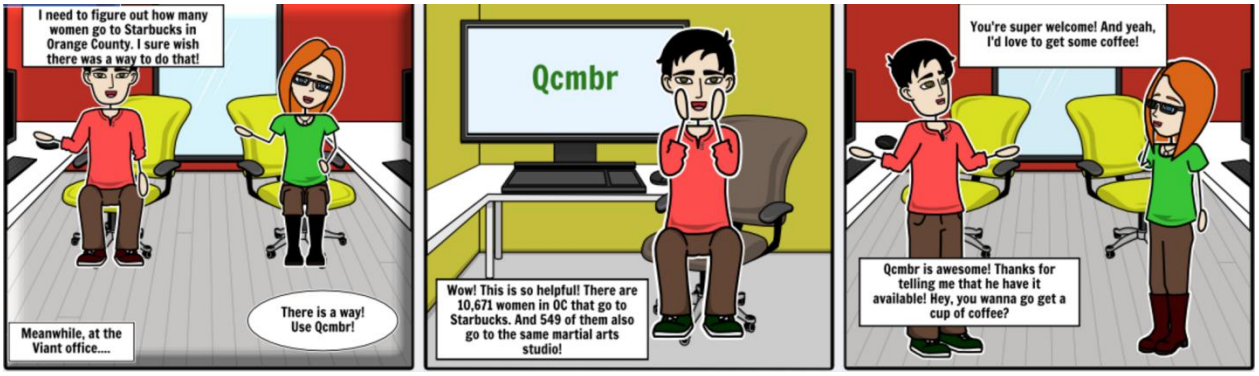
7. Sequence Diagram

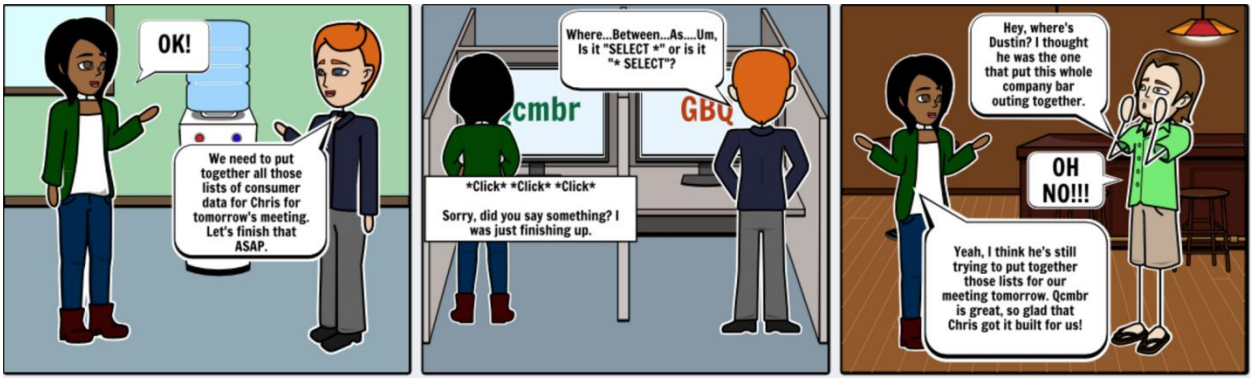


8. Comparative Analysis of Interfaces

Component	MerQuery	Experian PeopleFinder	WhitePages
Multiple starting search criteria	✓		
Single page results	✓	✓	✓
User Demographics	✓	✓	✓
User Profile Cards	✓		
Updated database	✓	✓	✓
Linking results	✓		
Consumer Information	✓	✓	
Changing filters	✓	✓	✓
Geolocations	✓		✓

9. Storyboards





10. Generalized Transition Network

11. Usability, Functionality, and Satisfaction Goals

11.1 Usability Goals

- 11.1.1 Interface should be easy-to-use, no instructions needed
- 11.1.2 Position of elements is intuitive
- 11.1.3 Traversing is made easy through links
- 11.1.4 Links are direct to the intended place
- 11.1.5 Searches return appropriate and desired results
- 11.1.6 Interface provides correct filters

11.2 Functionality Goals

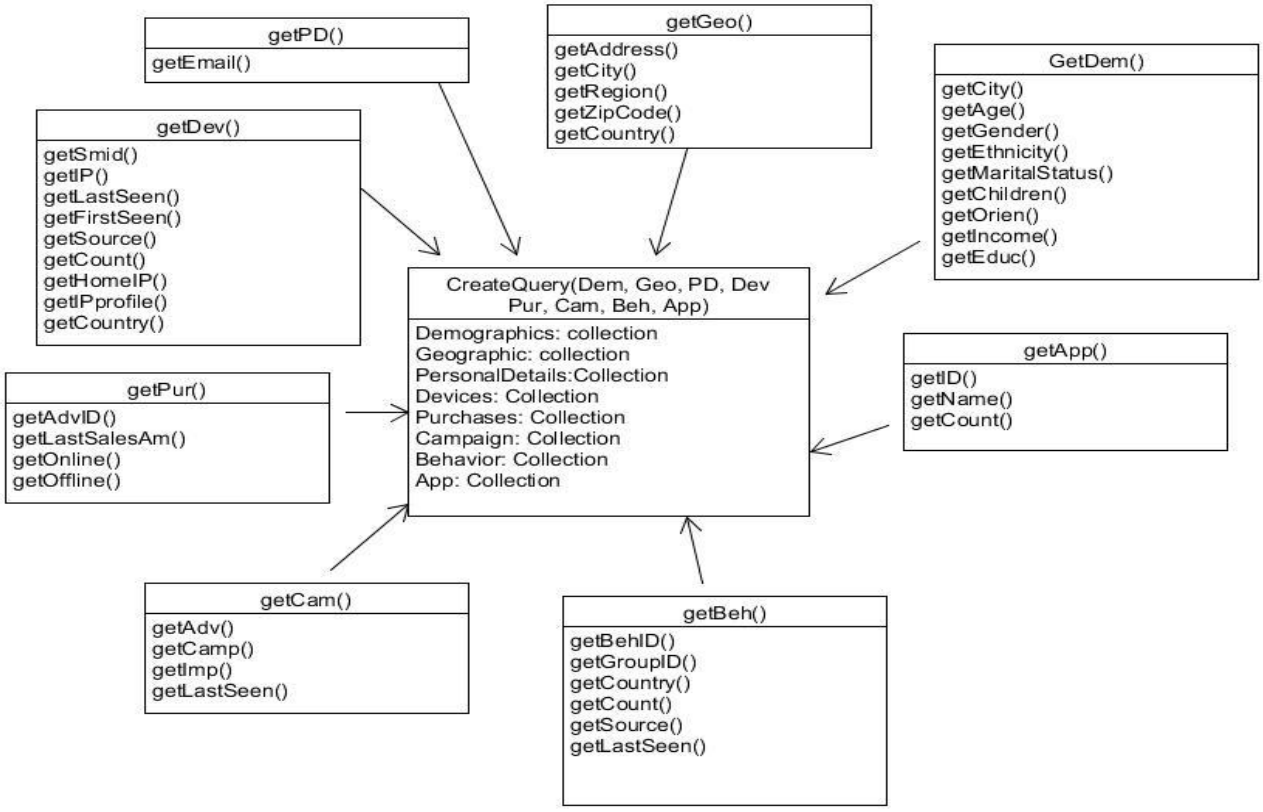
- 11.2.1 All relevant data will be presented to user
- 11.2.2 Tool will be able to connect relevant data points
- 11.2.3 This will be intended to be used as a web tool
- 11.2.4 Ability to traverse through data
- 11.2.5 User profiles will present most relevant data
- 11.2.6 Users can be searched by different fields in the data
- 11.2.7 Users can view profile, device, and household cards
- 11.2.8 Once a filter is applied, a list of desired data will be returned
- 11.2.9 Data presented will be “up-to-date”

11.3 Satisfaction Goals

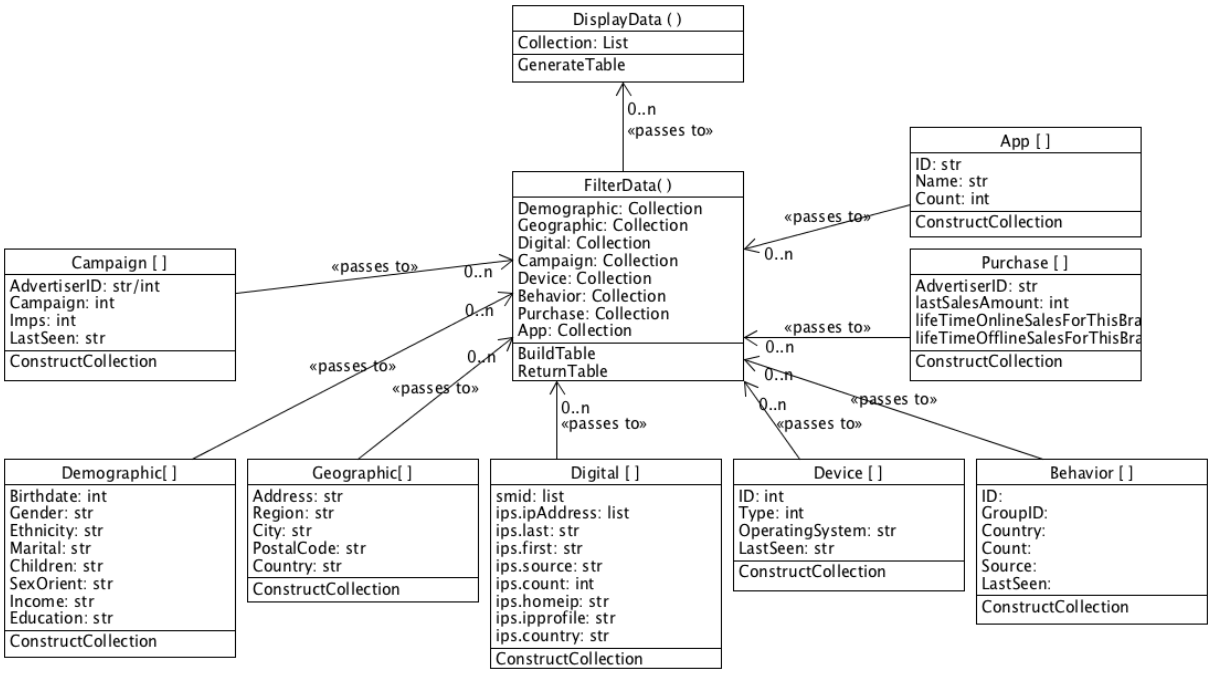
- 11.3.1 User will reach information quickly and efficiently
- 11.3.2 Links between data will be used to enhance user experience
- 11.3.3 Fields available will make user’s job more efficient
- 11.3.4 Product will improve day-to-day tasks of company
- 11.3.5 Data presented will aid in acquisition of customers

12. Class Diagrams

12.1 Class Diagram 1



12.2 Class Diagram 2



12.3 Three Tier Diagram