

Merquetry

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

3.1.1 Persona 1

Tim graduated a few years ago and decided to start a business along with his brother. He put much work into it and now is the CEO of the company Viant Inc. He is a very busy man that occasionally holds meetings with the most important clients to acquire their business. Tim didn't graduate with a computer science degree and therefore doesn't have a wide range of ability when it comes to programming. He has very limited knowledge of SQL and often times have to ask developers to assist him in writing SQL scripts. Tim is a businessman and therefore seeks to always have efficient meetings displaying the best aspects and data of Viant. He prides himself in the ability to acquire the best and biggest clients and appreciates the assistance of his team in doing so.

3.1.2 Persona 2

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 3

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)

Tim is preparing for a presentation with a big client this afternoon. Tim usually presents to the potential client and assures them of Viant's ability and the accuracy of the data it holds. Lately he has found it very difficult to have a persuasive and efficient presentation because of the way he has to access data. Tim does not know much SQL and therefore must always bring a developer with him for presentations. During presentations, when the potential client has a special request for a demo they would like to see, Tim must pass this information to the developer. The developer must then write the scripts to show the desired information. Tim is tired of this system as he feels it is unprofessional to have the potential client waiting during this process and feels the whole process isn't efficient. In preparation for his afternoon meeting he asks his team at Viant if there are any better ways in which the company as a whole could improve the way it explores its data.

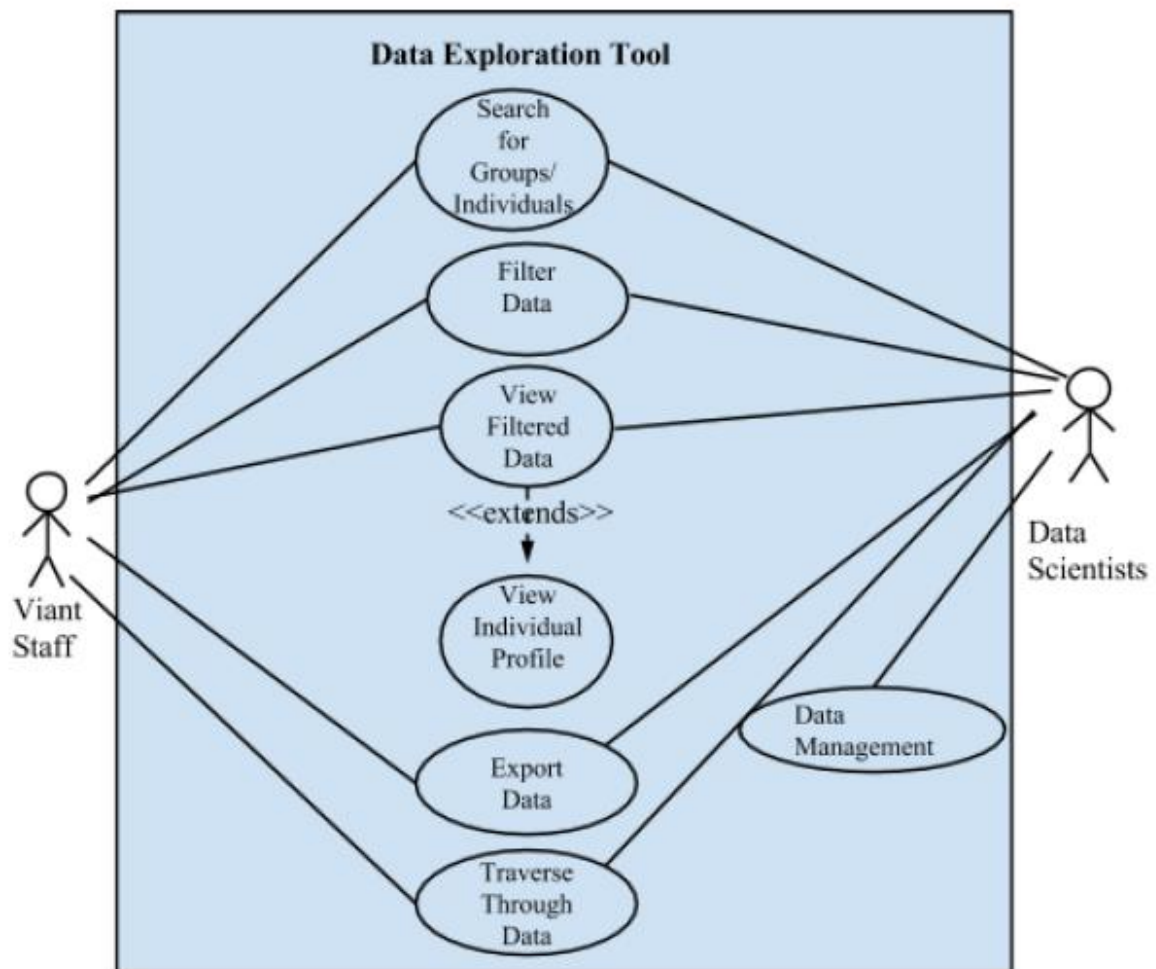
3.2.2 Scenario B (Persona 2)

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.

3.2.3 Scenario C (Persona 3)

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

Qcmbr

Name Location Interests

Gender Age Go

Search Box Search

Showing Results for "25-30 year old females in Orange County, CA..."


Rachita Gehi	26	Irvine, CA	Single	Female
Amy Nguyen	28	Orange, CA	Married	Female
Tina Bui	25	Santa Ana CA	Single	Female
Jalene Hert	30	Irvine, CA	Divorced	Female
Jacklyn Khan	26	Santa Ana, CA	Single	Female
Ranita Rihi	26	Irvine, CA	Single	Female
Amy Temb	28	Orange, CA	Married	Female
Bayla Buip	25	Santa Ana CA	Single	Female
Reba Hart	30	Irvine, CA	Divorced	Female
Jamber Wito	26	Santa Ana, CA	Single	Female

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Qcmbr

25-30 yr old Females in Orange County ▶ Jalene Hert

New Search Search



Jalene Hert

Click on any blue link to see users with same attribute

Gender: [Female](#)
Age: [30](#)
Location: [Irvine, Ca](#)
Marital Status: [Divorced](#)
IP address: [234.567.89](#)
Platform: [Android](#)
Devices: [4](#)
Frequent buys: [Kraft Cheese](#), [Emergen-C](#), [Kleenex](#)
Interests: [Travels once/month](#)

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

5.2 Wire Frame #2

The wireframe depicts a web browser window titled "A Web Page". The address bar contains "http://". The page content includes a breadcrumb "Home > ...", a title "Viant Qcmbr" in blue, and a table with four columns: "Name", "Age", "Income", and "Advanced Options". The table has one empty row. A "+" sign is to the right of the table. Below the table is a "Search" button. The browser window has a grey header and footer.

Name	Age	Income	Advanced Options

Search

*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)

A Web Page

http://

[Home](#) > ...

Viant Qcmbr

Name	Age	Income	Advanced Options
	20-40		

Search

A Web Page

http://

[Home](#) > Age: 20-40 yrs

Viant Qcmbr

<

Name	Age	Income	Advanced Options
	20-40		

+

<

Name	Age	Income	Advanced Options

+

Search

A Web Page

http://

[Home](#) > Age: 20-40 yrs

Viant Qcmbr

<

Name	Age	Income	Advanced Options
	20-40		

+

<

Name	Age	Income	Advanced Options

+

Search

A Web Page

http://

[Home](#) > Age: 20-40 yrs

Viant Qcmbr

<	Name	Age	Income	Advanced Options	+
		20-40			

<	Geo	Device	Purchase	Advertiser	+

Search

A Web Page

http://

[Home](#) > Age: 20-40 yrs

Viant Qcmbr

<

Name	Age	Income	Advanced Options
	20-40		

+

<

Geo	Device	Purchase	Advertiser

+

Search

A Web Page

http://

[Home](#) > Age: 20-40 yrs

Viant Qcmbr

<

Name	Age	Income	Advanced Options
	20-40		

+

<

Region	City	Postal Code	Country

+

Search

A Web Page

http://

[Home](#) > Age: 20-40 yrs

Viant Qcmbr

<

Name	Age	Income	Advanced Options
	20-40		

+





<

Region	City	Postal Code	Country
	Irvine		


+

Search

A Web Page



http://



[Home](#) > [Age: 20-40 yrs](#) > City: Irvine

Viant Qcmbr

< Name Age Income Advanced Options +

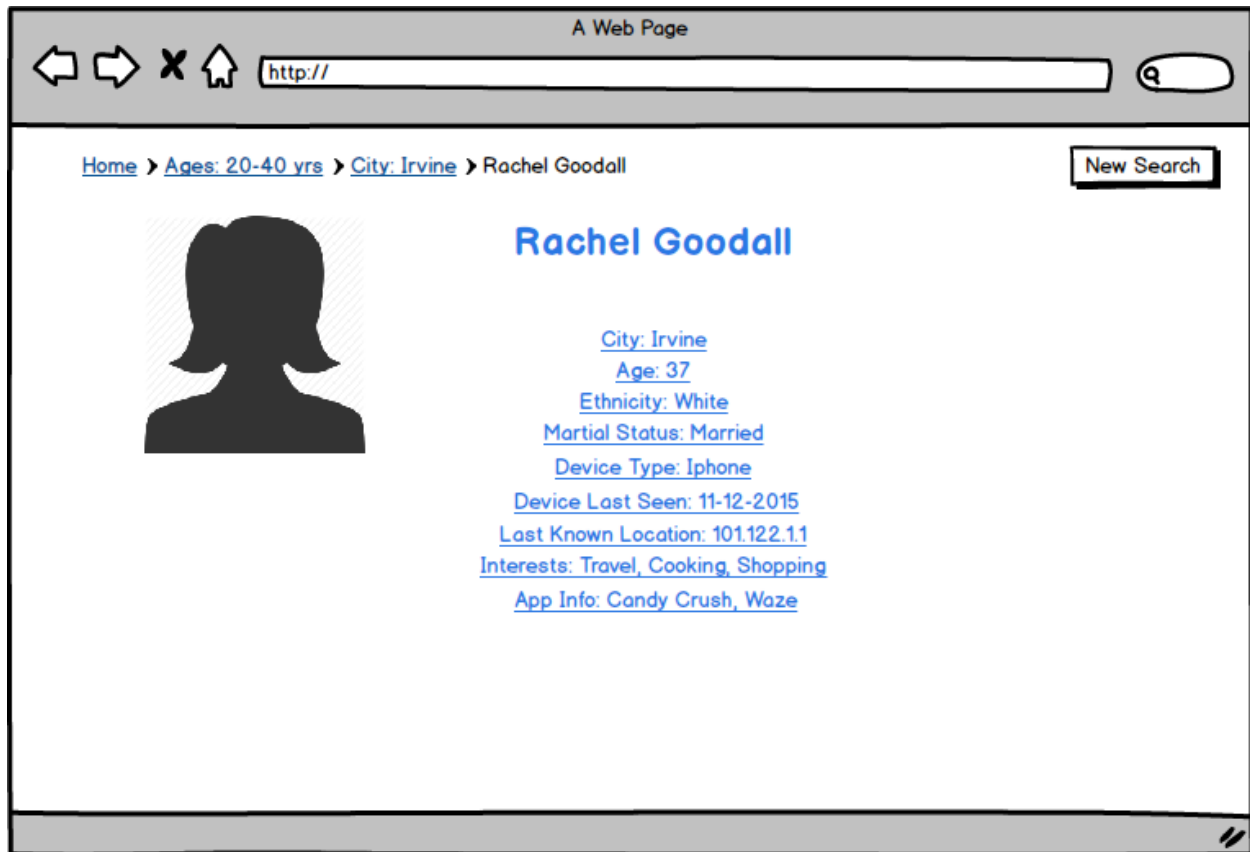
< Region City Postal Code Country +

Irvine

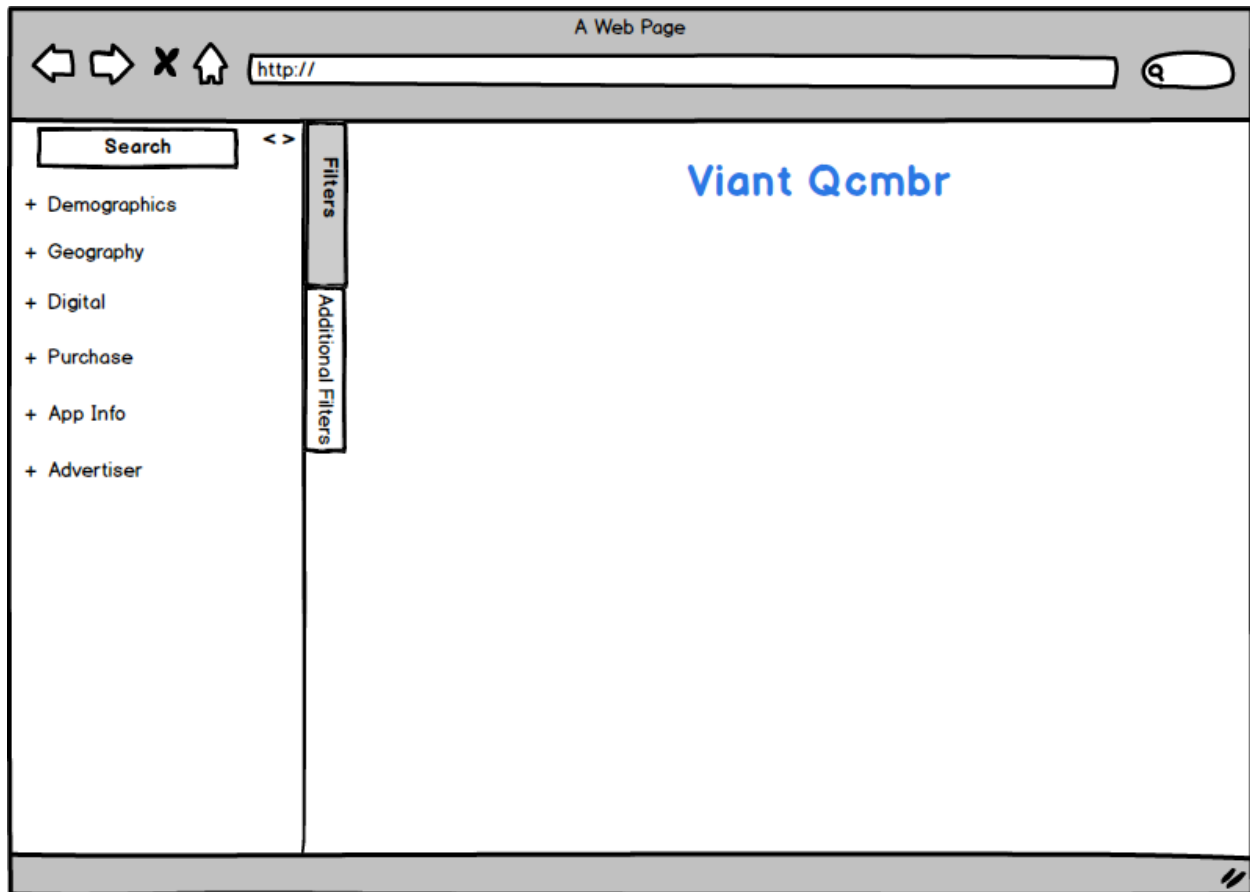
Search

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



5.3 Wire Frame #3



A Web Page

http://

Search < >

- Demographics

Name

Age

Income

+ Geography

+ Digital

+ Purchase

+ App Info

+ Advertiser

Filters

Additional Filters

Viant Qcmbr

A Web Page

← → × ↗ http://

Search < >

- Demographics

Name

Age

Income

- Geography

Region

City

Zip Code

Country

+ Digital

+ Purchase

+ App Info

+ Advertiser

Filters

Additional Filters

Viant Qcmbr

//

A Web Page

http://

Search < >

- Demographics

Name

Age

Income

- Geography

Region

City

Zip Code

Country

+ Digital

+ Purchase

+ App Info

+ Advertiser

Filters

Additional Filters

Viant Qcmbr

A Web Page

←

→

✕

🏠

http://

Q

Search

< >

- Age

20-40

- Region

California

- City

Irvine

- Country

US

Filters

Additional Filters

Viant Qcmb

Results

Name	Age	Device Type	Gender
<u>Rachel Goodall</u>	<u>37</u>	<u>Iphone</u>	<u>Female</u>
<u>Mark Rex</u>	<u>34</u>	<u>Android</u>	<u>Male</u>
<u>Steven Kay</u>	<u>37</u>	<u>Ipad</u>	<u>Male</u>
<u>Valarie Truman</u>	<u>25</u>	<u>Macbook</u>	<u>Female</u>
<u>Taylor Smith</u>	<u>22</u>	<u>Unkown</u>	<u>Female</u>

Export Data

A Web Page

←

→

✕

🏠

http://

🔍

Search < >

- Age

20-40

- Region

California

- City

Irvine

- Country


US

- Name

Rachel Goodall

Filters

Additional Filters



Viant Qcmb

Rachel Goodall

[City: Irvine](#)

[Age: 37](#)

[Ethnicity: White](#)

[Marital Status: Married](#)

[Device Type: Iphone](#)

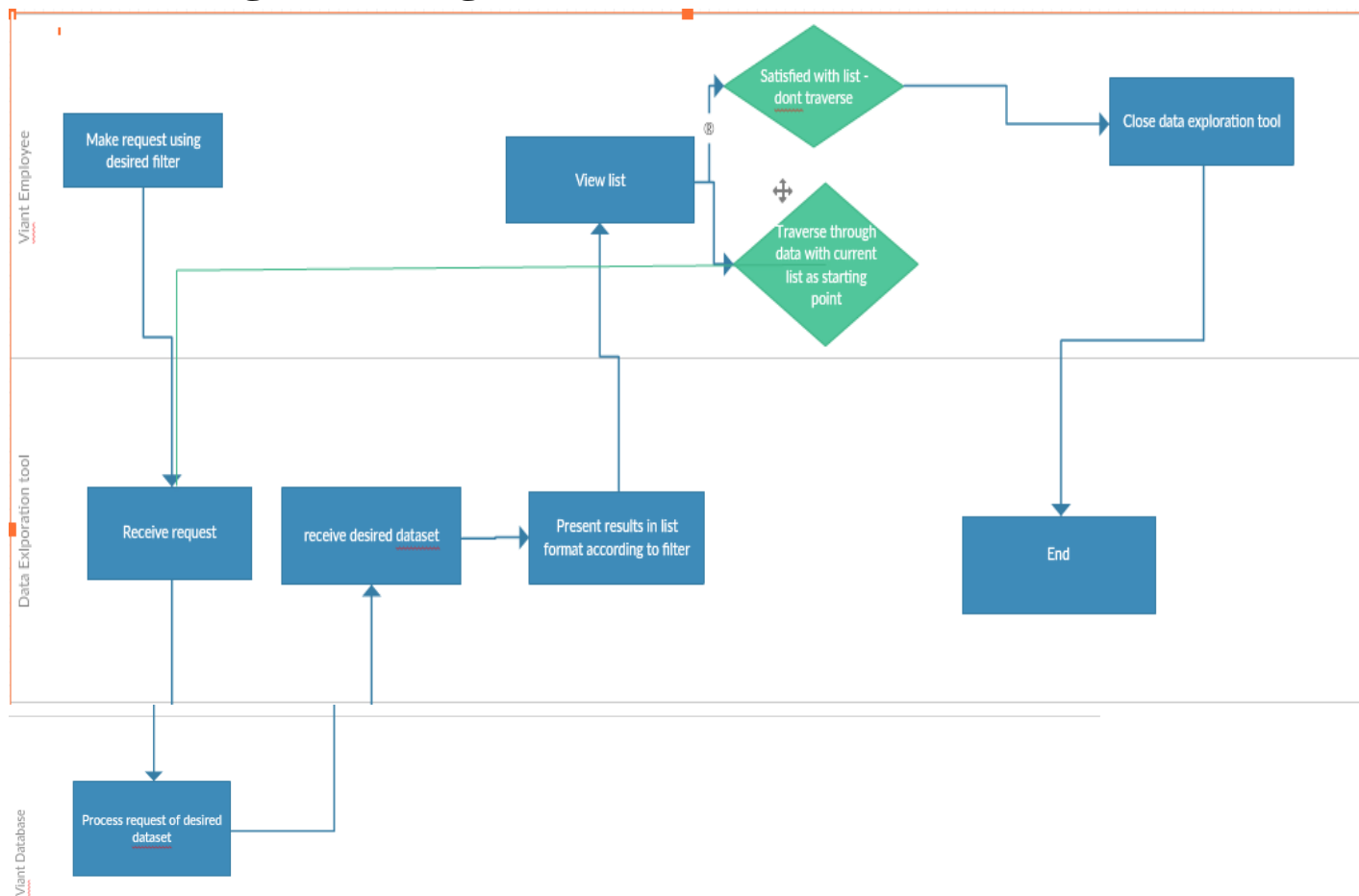
[Device Last Seen: 11-12-2015](#)

[Last Known Location: 101.122.1.1](#)

[Interests: Travel, Cooking, Shopping](#)

[App Info: Candy Crush, Waze](#)

6. Swimming Lane Diagrams

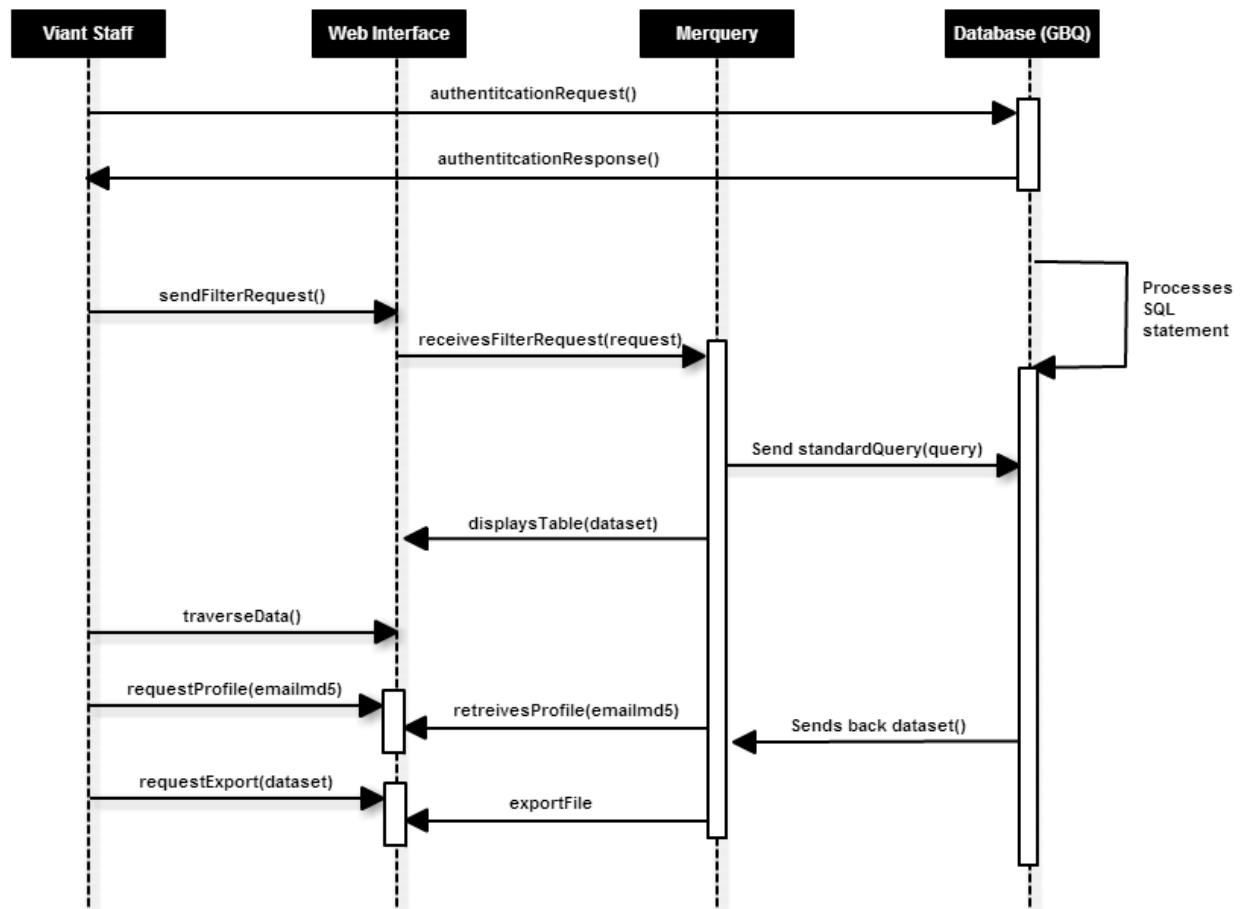


Row 1: Viant employees: Make request using desired filter, View list, Satisfied with list- dont traverse, traverse through data with current list as starting point, close data exploration tool

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

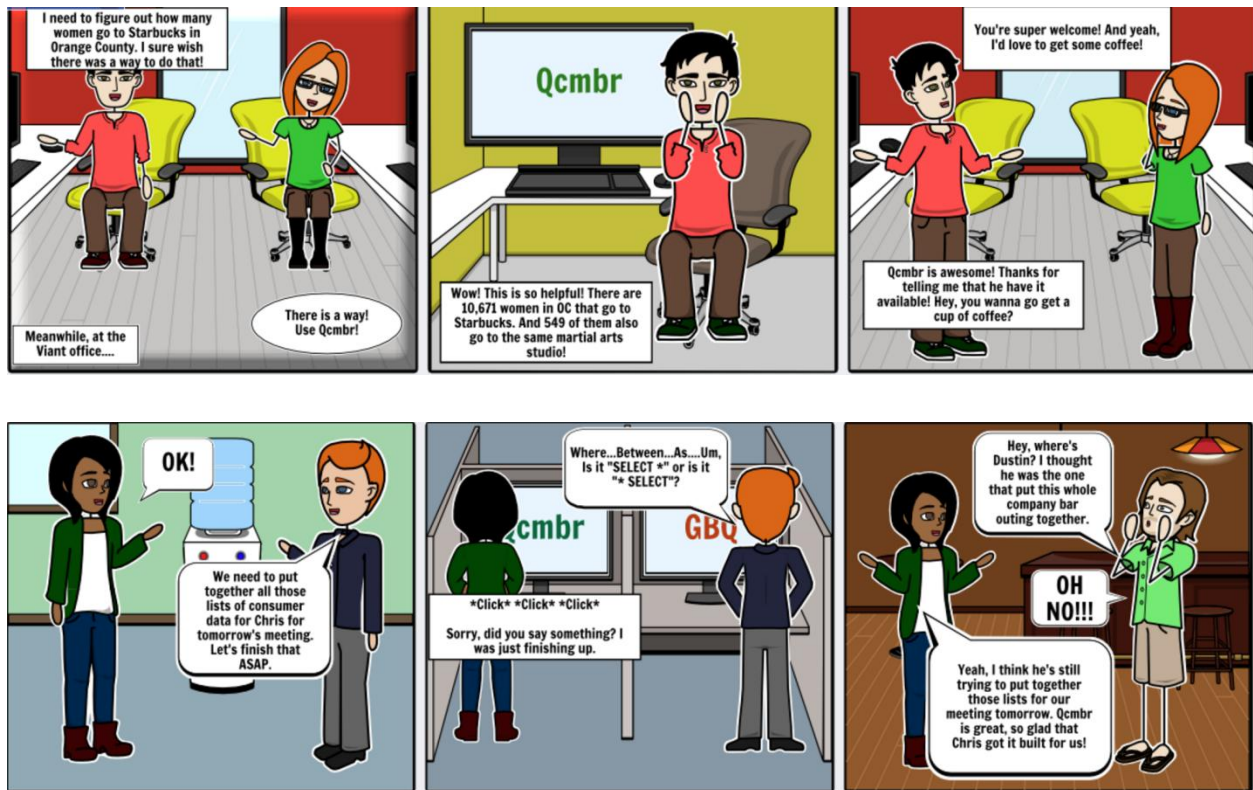
7. Sequence Diagram



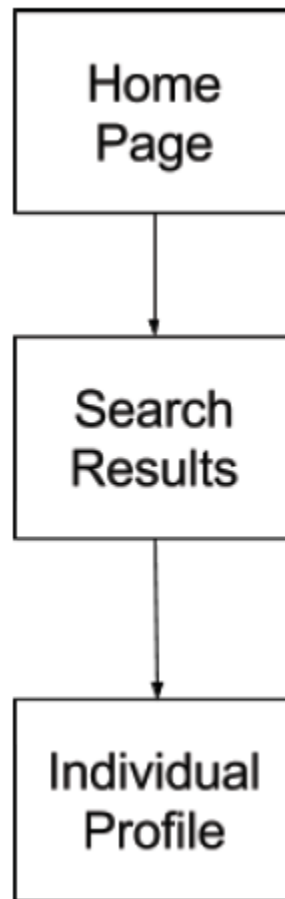
8. Comparative Analysis of Interfaces

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

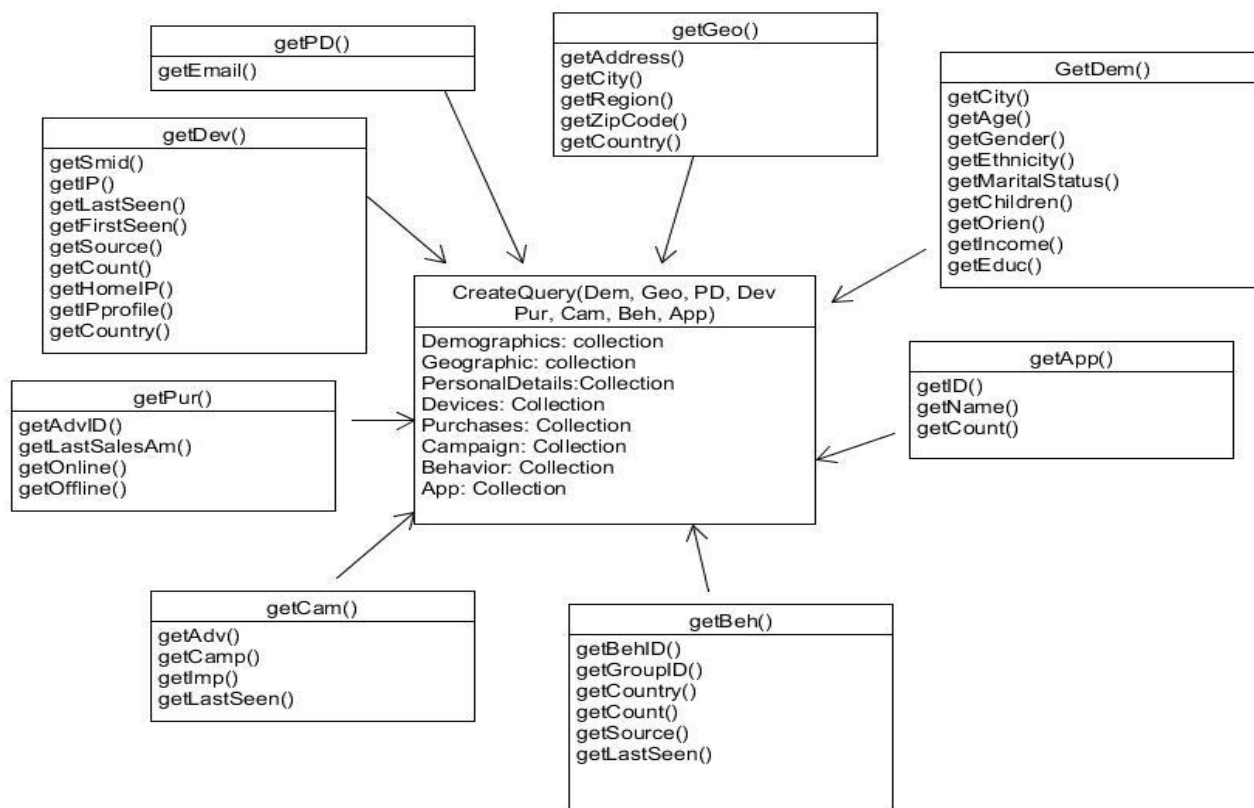
- 11.2.1 All relevant data will be presented to user
- 11.2.2 Tool will be able to connect relevant data points
- 11.2.3 This will be intended to be used as a web tool
- 11.2.4 Ability to traverse through data
- 11.2.5 User profiles will present most relevant data
- 11.2.6 Users can be searched by different 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

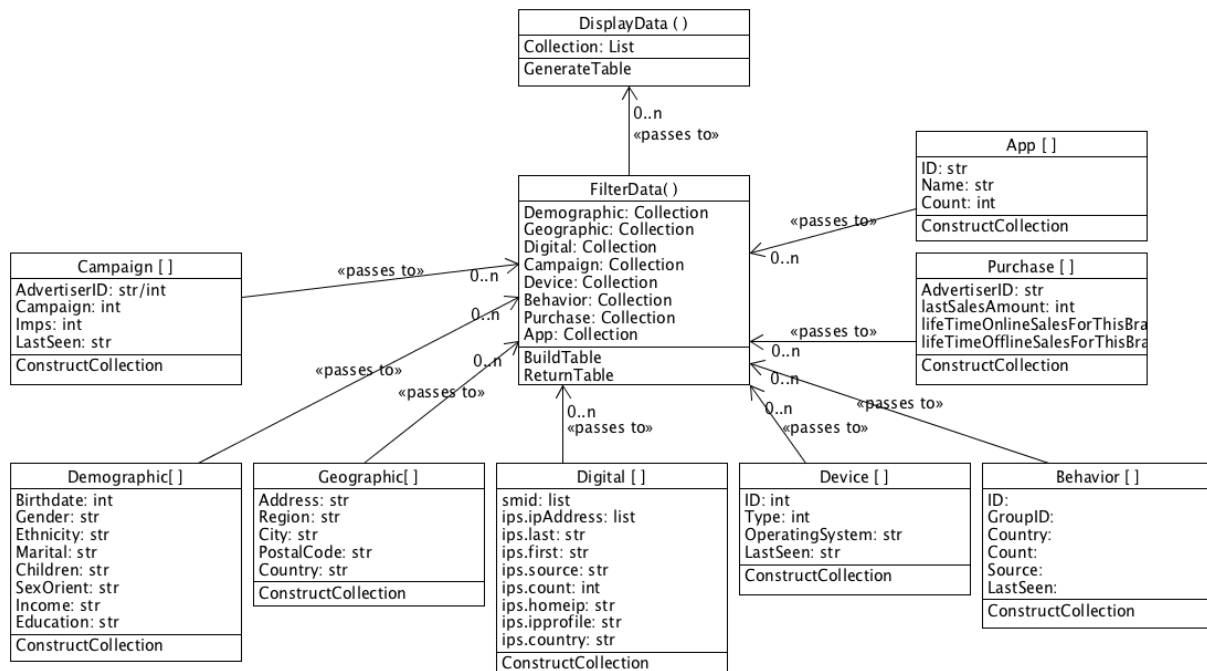
- 11.3.1 User will reach information quickly and efficiently
- 11.3.2 Links between data will be used to enhance user experience
- 11.3.3 Fields available will make user’s job more efficient
- 11.3.4 Product will improve day-to-day tasks of company
- 11.3.5 Data presented will aid in acquisition of customers

12. Class Diagrams

12.1 Class Diagram 1



12.2 Class Diagram 2



12.3 Three Tier Diagram

