
STAGE 1 PROJECT

for

COSC 3P94

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3P94 Real Estate App

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1. User Requirements

1. Buyers must quickly and intuitively be able to...
 - a. Find houses...
 - i. In a specified location
 - ii. Within their budget
 - iii. With their desired attributes
 1. # Bedrooms
 2. # Bathrooms
 3. Type of house (condominium, apartment, townhouse, detached)
 4. Size/square-footage
 - b. Express interest to seller of a house
 - i. Start a message thread, or link to seller's contact info
 - ii. Request a realtor
2. Sellers must quickly and intuitively be able to...
 - a. List their house...
 - i. Location, price, and attributes
 - ii. Upload pictures
 - iii. Must have proof of ownership
 - b. Receive notification of interest
 - i. Through email or a message thread
 - c. Be given an estimate for the value of their house on the website
 - i. See: PurpleBricks savings calculator
 - d. Be offered tips on increasing/decreasing the price based on amount of interest
 - i. If house generates a lot of interest in short period of time, consider increasing price
 - ii. If little interest is generated over a long period of time, consider decreasing price
3. Navigation must...
 - a. Minimize user input
 - i. Keypresses, mouse clicks
 - b. Be goal-oriented
 - c. Be organized
4. UX must...
 - a. Be functional
 - b. Be aesthetically pleasing
 - c. Be professional
 - d. Not be overwhelming

2. Website Analysis

This section analyzes the various features that real estate sites provide. Most features in these real estate websites are similar, but there are a few that set them apart. The three websites we will be focusing mainly on are Purplebricks, Zillow and Theredpin. Each of these websites offers unique features and perspectives which can make home buying in Canada and beyond quite a bit easier. In the website analysis, we will be talking about a various number of features such as Purplebricks savings calculator. Zillow's Zestimate feature and Theredpin's first access feature among others. This provides a unique perspective on how similar and different other realty websites can be from each other.

2.1 PurpleBricks

There are various services provided by Purplebricks that Buyers and Sellers alike can use. One of the main selling points provided by the website, is the PurpleBricks savings calculator. This Calculator allows the user to view the amount of money one could save selling the house based on the estimated value. So for example, if you were to sell a house for around \$500,000 you could save around \$28,350 using PurpleBricks instead of paying a commission to an unrelated realtor. This provides the user with some incentive when it comes to choosing their website instead of a competitor's website such as Zillow, Realtor.com or Zoocasa.com. One of the other features PurpleBricks offers that are very much similar to some other websites is the ability to choose the specifications when it comes to buying and selling specific properties. For example, Purplebricks offers various drop down menus and price sliders to adjust to the user's specific needs. We can specify a one bedroom; two bathroom condo and the website will show us various listings based on our geolocation. Purplebricks does not just lock us into our specific location as well, it has a map feature which allows us to change our specific location to better suit your needs. In exchange for a flat fee, Purplebricks also allows you to list the house which essentially helps make sure that the sellers of the house are serious about actually listing and selling their property. The website offers the services of their very own in house realtors that will take you through the process from evaluation to selling the home, which essentially provides piece of mind that a certified professional is still helping through the process. Purplebricks also offers a specific application called the "MyPurpleBricks Control Centre" that allows the seller to view and change various information about the house and the listing, and allows the user to monitor activity such as click's and interactions with the specific listings.

2.2 Zillow

Zillow offers a wide range of services to its customers. It is dedicated to providing their customers with buying, selling and renting; while also linking homeowners with real estate agents, mortgage professionals and property managers. A unique feature on Zillow is the Zestimate, it allows a customer to estimate the market value of a home. The feature works by using a proprietary formula calculated by the public and user-submitted data, this allows their customers to get detailed information on any of their listed properties. Zillow also offers many features that are similar to other real estate websites, such as buy rent and sell. To make the experience easier for the customer Zillow categorizes its properties into separate parts such as, for sale, potential listings, and for rent. It further divides potential listings to foreclosed, pre-foreclosure and Make me Move. The Make me Move feature is unique to Zillow and includes a list of properties that the homeowner enlists to scout the market and determine if there are any potential interests without formally listing the property for sale. Zillow also offers calculators to its customers, some include calculating mortgage, affordability, refinance, debt to income and veterans (VA) mortgage. For example, the affordability calculator allows customers to view how much of a house they can afford by calculating what they can comfortably spend on a new home. Another calculator that is available on Zillow is the debt to income calculator, this helps customers determine if they would qualify for a mortgage. Another feature on Zillow is the agent finder, it allows you to find real estate agents, property managers, home inspectors, and other professionals. It allows you to connect to local real estate agents who can help you meet your needs and give their expertise on various aspects of real estate.

2.3 Theredpin

Theredpin is a buying and selling website along with a brokerage feature that offers services in buying and selling properties throughout the GTA area. Theredpin provides a search bar that allows the user to input a specific address in the area that they would like to check out the listings for. Once the user inputs the address the website, it provides the user with a map and various graphics that correlate to where the specific location is on the map. The website also allows you to chat with a qualified agent real time to answer any questions that you may have, Theredpin also give you the opportunity to save an area for future viewing, allowing users to not have to write down or memorize the location of a specific listing. The website also offers a “Redpin” exclusive feature called “first access” in which home buyers can get exclusive access to developments before they are released to the public, essentially allowing the buyer to contact the owner and builders of the building to buy a specific property or unit before anyone else can get to it.

3. HTA Diagrams

3.1 PurpleBricks

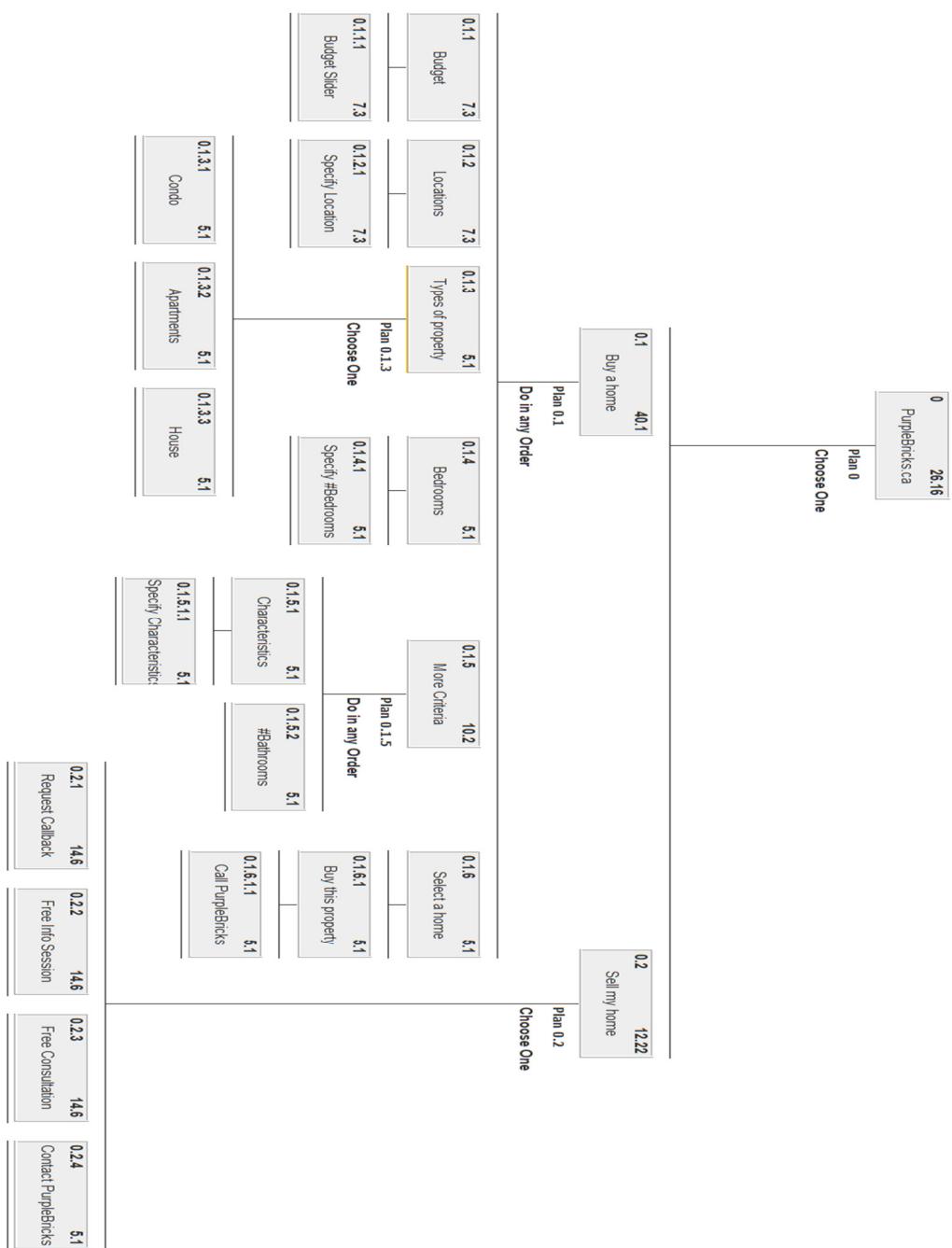


Figure 1

3.2 Zillow

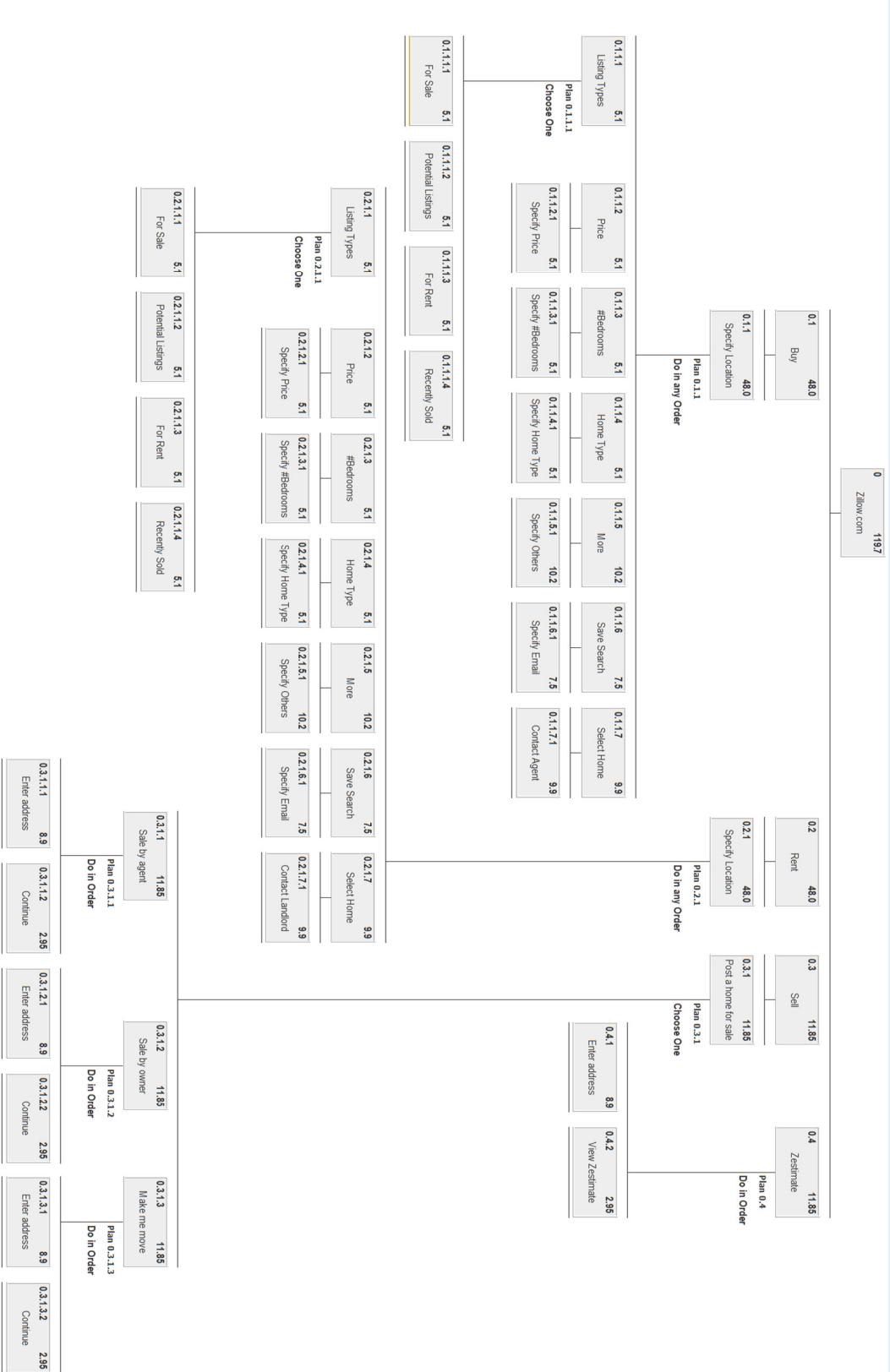


Figure 2

3.3 TheRedPin

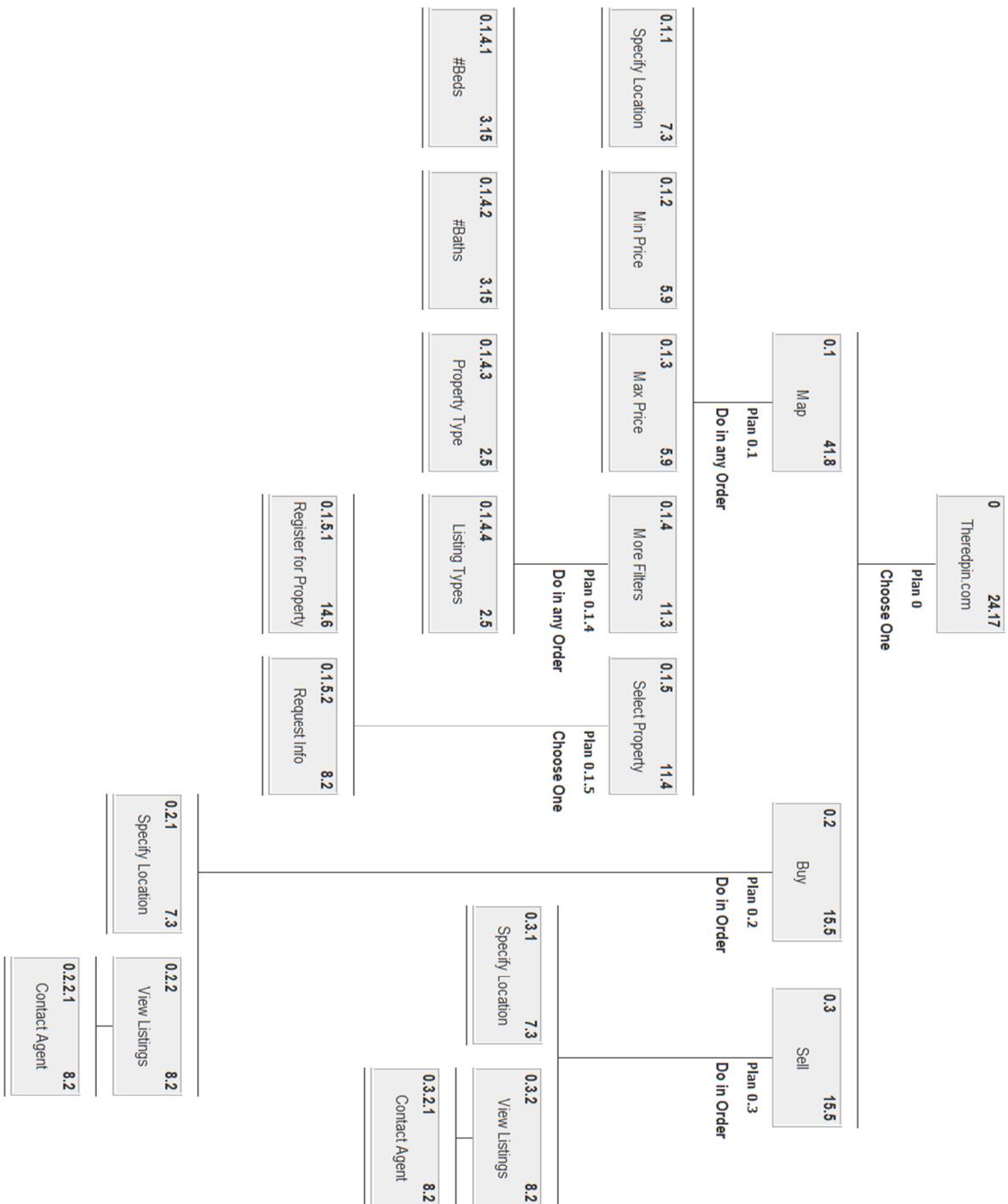


Figure 3

4. HTA/KLM Analysis

4.1 PurpleBricks

On PurpleBricks.ca, users are given an option to “Buy a home” or to “Sell [their] home”. Users that would like to buy a home may specify their budget using a slider widget for budget minimums and maximums, specify a location by entering a city name, or other filters such as types of property, number of bedrooms, number of bathrooms, or other characteristics. Once they enter their filters or criteria, they may select a home from the sidebar, which displays more in-depth information and pictures of the house. They’re then able to click “buy this property”, which directs them to call PurpleBricks to proceed. Represented in the top right of the visual HTA boxes are the KLM values. For example, the KLM Code for the slider widget is ‘MPBP MPBP’, which results in 7.3 seconds using the default values for M, P, and B tasks.

Users looking to sell their home are given information on the process and are presented with four options. They are able to request a callback, register for a free info session, proceed with a free consultation, or the opportunity to simply contact PurpleBricks.

4.2 Zillow

From the homepage, Zillow visitors are given the options to Buy, Rent, Sell, or Zestimate (the renting KLM process times are identical to the buying times with the same interface). Users looking to buy or rent are first asked to specify their location (by typing in a city or address into an auto-suggesting text field) before being given filters such as listing types, price, number of bedrooms, home type, and others. Once they enter their specific filters, they’re able to save the search, which requires that they input their email to repeat the search in the future. Selecting a home after inputting the filters provides the user a link to contact an agent to proceed. On the Zillow website, the KLM Code to specify a price for the filter is ‘MPB MPB’, which results in 5.1 seconds using the default values for M, P, and B tasks.

Users looking to sell their home must specify if they are selling by agent, selling by owner, or planning on utilizing a “Make me move” service. Regardless of their selection, they’re asked to enter an email address before confirming.

Lastly, users are given an option to “Zestimate”. This only requires that an email address is to be entered before clicking the “View Zestimate” button.

4.3 TheRedPin

Users of TheRedPin.com are able to select the Map, Buy, or Sell options. From the map, users can specify location, minimum price, maximum price, number of bedrooms, number of bathrooms, property type, and listing types before selecting a property that they’re interested in. Once selected, users can register for the property or request more information on the property. To specify location, the users input an (approximate) KLM

Code of MPHB KKKKKKK MPHB (assuming a 7-character city is inputted). This code adds up to 7.3 seconds when using the default time values for each code.

Users that click on “Buy” must simply specify the location, view the listings, and contact the agent of a property that they’re interested in. This process is identical for users who are looking to sell their property, despite the potential confusion that “view listings” could create for the sellers.

5. Website Critical Analysis

5.1 Zillow

The main issue with Zillow is there are quite a bit of features provided that look far to similar. This was the main issue with the Buy, Sell and Rent portion of the site, where it took more exploring to try to figure out how to use the features of each then it should have. Firstly with the Buy feature, users start by inputting a specific location or address and are then met with a map and a list of available houses within the area, how many days a specific property was listed, and other specific information that we come to expect with a property. From every aspect Zillow does this well, it provides interactive features indicating where the house is on the map, information about the house, along with the ability to contact the real estate agent to request a viewing or more information. But the problem occurs as soon as one navigates to the sell portion of the website, which looks extremely familiar. The process works exactly the same as well, with the user entering a geolocation and then being led to the same interface, to a Novice or an Intermediate user, they may assume a mistake has been made and go back to the buy page and repeat the process over again. The only way to access Zillow’s selling features is to click the tab on the top left of the screen to view the different features the site offers. There are multiple problems with this aspect of design, for one it makes the user feel at that they have made a mistake and may try to use the Sell feature multiple times, or some users may not be as patient and may try to leave the website entirely and just seek a real estate agent, defeating the purpose of the website entirely. Even trying to access this tab to view more information about trying to sell your home is difficult on the mobile version of the website. This breaks some of the biggest rules of User-Centered design, especially one of the most important rules of not leaving the user guessing. Another issue that is prevalent with Zillow that we have touched on slightly is how difficult it is to find information about some of Zillow’s features. One such example was the Zestimate feature, where to find out more information about the feature a user must click the tab at the bottom of the website, however for Novice users they would have generally been forced to Google it as it would have been easier and more familiar. The website also had this problem when it came to trying to post your house for sale on the website as well, as it became extremely difficult to try to figure how to post in either for sale by owner or by agent without just trying to search the web for the specific link to go about doing that. This process can also

be done by following the sell tab, but trying to do this as a Novice user or a user on the Mobile site would have been very difficult. So looking at the site as whole, it feels as though if Zillow was a little bit more transparent when it comes to some essential aspects of the interface and also invested some effort in changing the UI to suit different aspects of Real Estate(i.e Buy,Sell,rent,etc..) it would definitely provide a better overall user experience. These lessons are something that must definitely be kept in mind for the interface that our team will be designing.

5.2 PurpleBricks

Purplebricks deals with buying a home in a very similar fashion as Zillow, once you indicate the specific location that you would like to browse and the exact specifications of the houses you would like to look at, it either pulls up a map or a list. Once it reaches this point, this is where the issues start to arise for Novice and Intermediate users. The map itself is not very informative or easy to use, once a user pulls up the map they can click on the sprite which will divide into a series of smaller sprites until you can finally see specific locations. This may frustrate the user, as forcing the user to see the total number of houses in the area in a series of small sprites and then forcing them to continue clicking to get to the individual houses might get a little repetitive and annoying, especially for users looking for houses in multiple areas. Trying to look at and understand this map when looking at it through a mobile version of the website may also be an issue, as it can be very hard to click on these sprites and get viable information out of them. The website essentially forces the users to use the list feature instead of the map, we believe it would be quite a bit more useful if they implemented it like Zillow where the map and the lists are integrated together so that it is easier to see and interact with. Using the list feature when trying to look at houses saves a lot of time and effort because there are far fewer clicks and guess work involved, so a user can click on the house they wish to view and if they like it provide contact information. Selling a house on PurpleBricks can also be a bit of a pain, with Zillow the issue was trying to find the specific page to have your house listed, with PurpleBricks selling a house requires few extra steps. When using Purplebricks, it is required to contact a specialist, set up a consultation and pay a fee, this does provide added protection for the buyer to make sure that the seller is legitimate, but it can also drive off the sellers as it requires a considerable amount of effort just to get the house listed. In conjunction with this, the information provided can be vague and leaves the user guessing and trying to experiment a lot of the time, essentially forcing the user to call Purplebricks, So instead of just having a quick and simple way of listing the house to sell or rent on the website, a middleman is unnecessarily placed in between. When implementing our interface, learning from this, it is imperative to provide the user with simple information and feedback so that the user has to do the least amount of guesswork as possible. Building a successful interface means trying to limit the amount of work the user has to do outside of the environment and building a complete ecosystem that

provides the user with all the necessary information to complete a task without overwhelming them with unnecessary features.

5.3 TheRedPin

TheRedPin is a real estate site that allows its customers to buy or sell their homes. When one first approaches the website, it introduces the customers with a map where a location can be inputted to view houses/condos in that area. Once a location is set it then directs the users to filters, where specific attributes of the property can be listed, such as beds, bath, property type, listing type and many more. This allows the user to be more specific in their search and narrow the options down to the houses/condos of their choice. TheRedPin then allows you to click on the desired house then relocates the user to the house listing page. Here it reviews the specific attributes of the house/condo. The user then can “Register for this Building” which asks for the user’s info and allows them to register. This process of buying a house is similar to other websites like Zillow and PurpleBricks, the website introduces the user to a map where they can narrow their search. However, most of the specific features on TheRedPin are hidden and users must navigate an extra step unlike its competitor websites which have the buy and sell options on a taskbar on the homepage. Another area of concern is the location of the core tabs such as buy and sell, these are located on a drop down menu on the top right. This forces the user to navigate the website to find the buy and sell feature while other sites display them on the homepage without a drop down menu. The sell feature on TheRedPin allows the users to compare their houses with others in their city or surrounding, once the user is ready to proceed they are given information on how to continue. However, the site does not allow you to register if the user wants to sell a property, this option is only given to buyers, those who are interested in selling are just given a number to call. This doesn't allow the user to be further notified or proceed with selling their house if they were unable to get through with calling the number provided. The site offers the ability to join the RedPinOne program which allows users to save on the house they purchase. TheRedPin brags about their low commissions and the value the site can offers to their customers by only charging the customer with a 2.5% commission rather than the typical 5% rate.

6 Survey Analysis

To do some Market Research, the team decided to send out a survey to get a sense of what consumers are using to fit their Real Estate needs. To fit this necessity the team developed a survey consisting of 10 questions, that were specifically targeted to help identify some of the aspects of website design that required more attention. In this portion of the document we will be looking at and critically analyzing the various information that we extracted from the survey. (Note we will not be looking at every single question, just the questions worth noting.)

6.1 Question 2

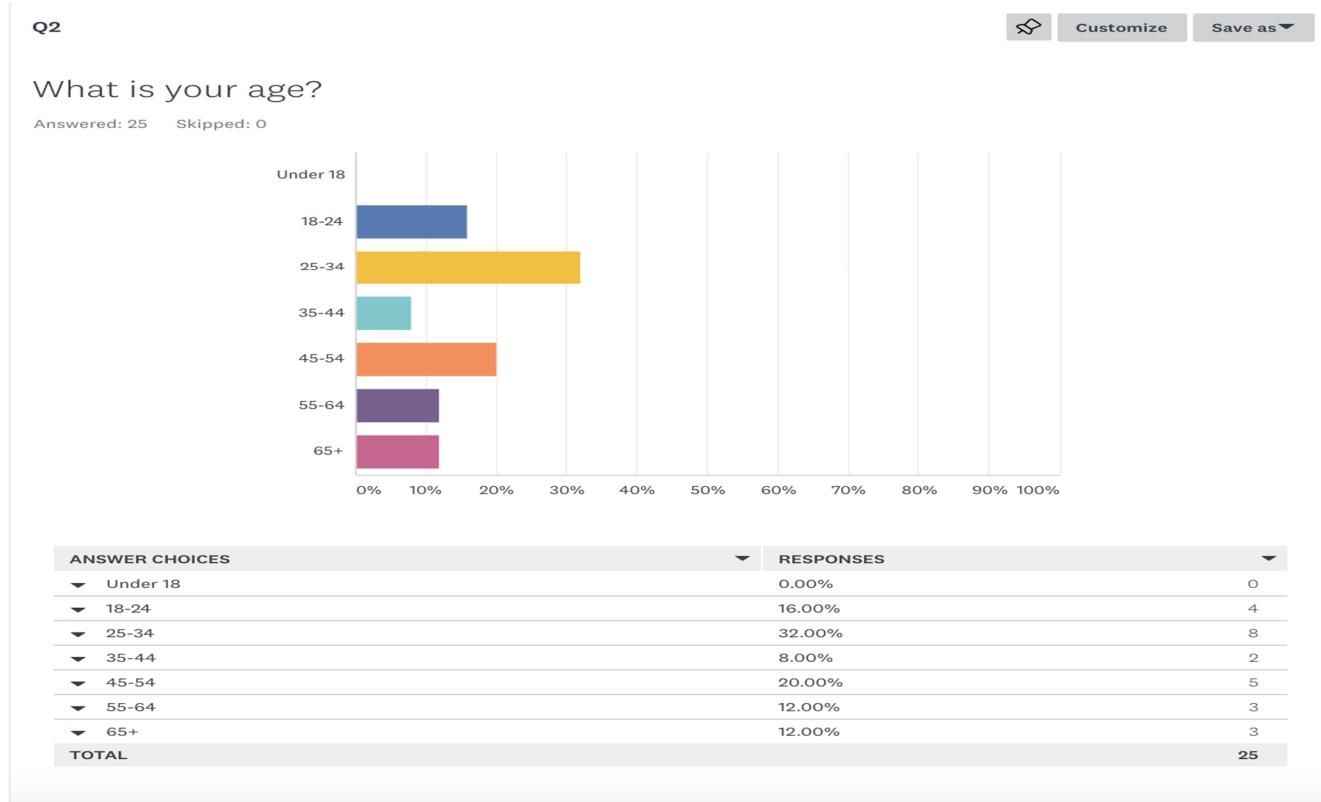


Figure 3

One of the questions that the respondents were asked about was the age of the participants of the survey. The reason for this was to get an idea of the general age of the users that partake in not only investing and buying Real Estate, but also browsing through various Real Estate websites. The results that were gathered were somewhat expected,

with the two largest demographics that were represented being the 25-34 year old population and the 45-54 year old population. This makes sense as this is the age range of most of the working population, and they would realistically have the money to invest in the Real Estate market. The 18-24 market also showed up a little more than expected as well, which can be surprising at first but is expected when one comes to realize that a lot of students graduate around this age and are getting around to looking for their first home.

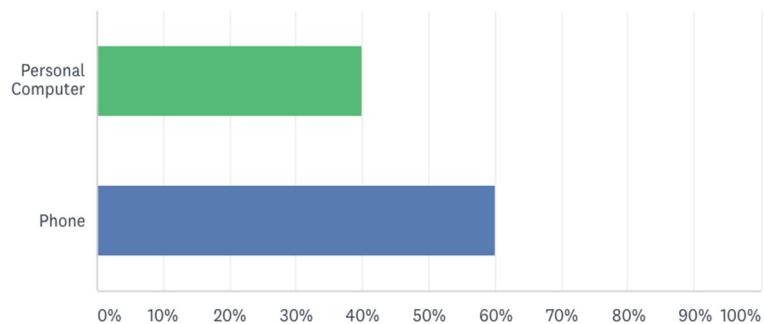
6.2 Question 3

Q3

🔗 Customize Save as ▾

What do you use more often?

Answered: 25 Skipped: 0



ANSWER CHOICES	RESPONSES
▼ Personal Computer	40.00%
▼ Phone	60.00%
TOTAL	25

Figure 4

The results of this portion of the survey came as a slight surprise. As we know, phones are becoming more and more involved in our daily lives and the younger generation are using it more as tool to develop their business, their work and their social life. When looking at the previous results, we see that the middle aged group was the dominant demographic involved in the Real Estate business, so it was expected that since Cell phone usage is more dominant in the younger demographic, we would see more regular PC users rather than Cell phone users especially when it comes to the respondents completing this survey. The reason for this question was to help determine what was needed to optimize the various aspects of UI when developing the software. This was something that was overlooked when it came to other big websites such as Zillow, whose

entire UI on mobile platforms was completely clustered together, which can be extremely frustrating to the user which can lead to abandoning the platform all together.

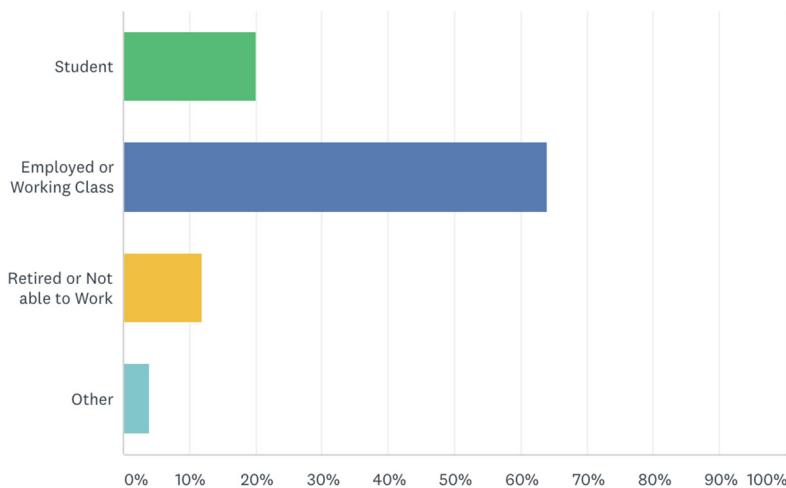
6.3 Question 4

Q4

Customize
Save as ▾

What is your current status?

Answered: 25 Skipped: 0



ANSWER CHOICES	RESPONSES
▼ Student	20.00%
▼ Employed or Working Class	64.00%
▼ Retired or Not able to Work	12.00%
▼ Other	4.00%
TOTAL	25

Figure 5

This question was formulated to get a sense of the financial situation of the users that completed the survey. The results essentially came out as expected, with majority of the users that browse the Real Estate websites being employed or in the working class by an exceptionally large margin, with the student population coming in at a distant second. The main idea of developing this question and some of the prior questions was just to get a sense of the type of people that the software will be catering to when it comes to designing the interface. These preliminary questions give a good sense of how to develop both the Primary and Secondary Personas and later on grouping these various users

together, giving a complete picture of the wants and needs of the respondents that the software must take into account.

6.4 Question 6



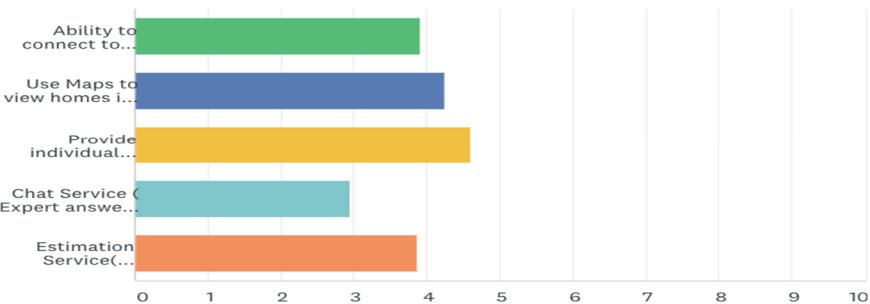
Figure 6

The respondents were asked this question to get a sense of the familiarity that our users already have when it comes to using Real Estate websites. This question was developed to allow us to gauge the level of experience our target demographic has when it comes to sites of this nature, whether it be no experience at all or having an expertise in this subject matter. By having this knowledge when it comes to building our own interface, we will have a sense of what is needed to make sure that the features or widgets that are implemented are going to be what's best for the user, while also helping make sure whatever is implemented will not leave the Novice users guessing. Since the Novice users are the most important group for the future interface, it is imperative that we make sure that when the build phase of the site or mobile app is started, the app is targeted around that type of user. So it is of the utmost importance that the team makes sure to not introduce anything that may be out of their comfort level.

6.5 Question 7

What would you look for in a Real Estate website (Rate in order of importance 1-Not important 5- Very Important)

Answered: 25 Skipped: 0



	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
Ability to connect to others (i.e buyers/Sellers, Agents)	4.00% 1	4.00% 1	24.00% 6	32.00% 8	36.00% 9	25	3.92
Use Maps to view homes in relation to other features	4.00% 1	12.00% 3	0.00% 0	24.00% 6	60.00% 15	25	4.24
Provide individual information about the houses(i.e # Beds, Baths, Year built etc)	0.00% 0	4.00% 1	8.00% 2	12.00% 3	76.00% 19	25	4.60
Chat Service (Expert answers throughout the day)	24.00% 6	8.00% 2	32.00% 8	20.00% 5	16.00% 4	25	2.96
Estimation Service(Provide computerized estimate of your house based on various factors)	8.00% 2	4.00% 1	24.00% 6	20.00% 5	44.00% 11	25	3.88

Figure 7

This was by far the most important question in the entire survey. We wanted to get a sense of some of the features that are presented in other websites (i.e Purplebricks, Zillow, Redpin, Zoocasa etc) that users like or did not like. We decided to present the users with various features that were available across all of our selected websites and have them rank those features based on the order of importance to them. Some of the results that were collected were the fact that a lot of users found that the Map feature was extremely important when it comes to looking for a house online, with over 60% of the users indicating it as very important. This was in conjunction with providing specific information about the home and the ability to connect with the various sellers/buyers and the agents. This question provides us with a good jumping off point about some of the features that users may like when it comes to their Real Estate experience. Developing a question like this takes out a lot of the guesswork when developing software and helps us prevent issues such as Featureware by differentiating what buyers want and what they do not want and basing the design based on these statistics.

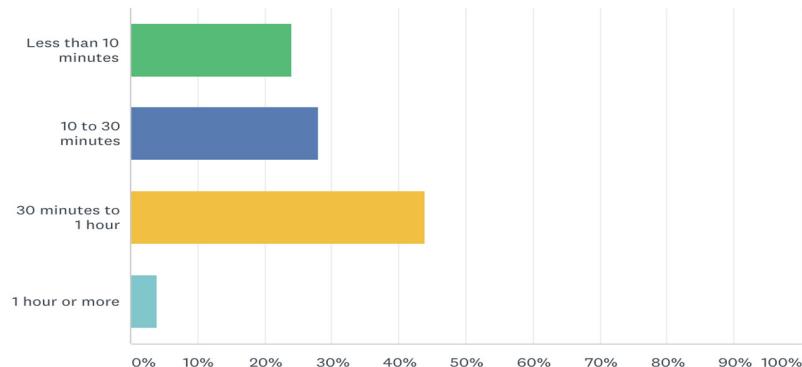
6.6 Question 8

Q8

Customize
Save as ▾

How much time are you willing to spend on a Real Estate website?

Answered: 25 Skipped: 0



ANSWER CHOICES	RESPONSES
▼ Less than 10 minutes	24.00% 6
▼ 10 to 30 minutes	28.00% 7
▼ 30 minutes to 1 hour	44.00% 11
▼ 1 hour or more	4.00% 1
TOTAL	25

Figure 8

Many real estate websites leave the user guessing and looking around throughout the website and beyond to find what they want. The same issue was present when it came to websites such Zillow, where far too often we would either have to look around or tinker with the website or just end up using Google to get to what we were looking for. Whether it be trying to find information on different features or just simply trying to list our property. By finding out the relative amount of time users were willing to spend on these types of websites we will be able to optimize our own interface to make sure that the users can get done what they need to get done in the optimal amount of time, which in this case is around 30 minutes to an hour. This question will be an important one during the development phase as we will have to try to formulate an appealing and productive layout that accomplishes this task all while getting the job done quickly and efficiently.

6.7 Survey Conclusions

The survey has provided invaluable information on the type of users the interface will be catering to. Through this survey and the answers of the respondents, it was determined that the system must cater to a demographic that cares about how efficient the system is at getting the job done. Our users care about a balance between complexity and simplicity all while getting their task done in a short time frame. Using the provided information there is clearly a need to develop a markup that offers users the services they need in an easy to find and easy to use manner, all while trying to avoid the mistakes some of our competitors have made. This information has been instrumental in helping develop primary persona's for which UI will be designed for. The primary profile that our survey has come up with is a 25-34 year old Male/Female, who primarily uses their phone as a means of business and communication, is a novice when it comes to using various types of Real Estate websites and who cares about a balance between feature rich software and simplicity. Using this information, we were able to determine some of the features that were present across all the website's that the respondents indicated as a must have (i.e Maps, ability to connect to various individuals that are part of the process, Individual information about the property etc..). This survey provides valuable information that can be used as a starting point in relation to the interface mockup that the team will be designing in the near future.

7. Primary Persona Characteristics

The survey indicated that most users want a feature based website that allows them to alter their search based on their specifications. These users tend to be more meticulous, particular and are very specific when searching for a property. These users are also circumventing the typical real estate process of hiring a real estate agent, this type of behavior is evident in those who are more crafty and like to do things themselves. When creating a primary persona these are the attributes that best exemplify the survey results.

The personas were split into five categories, those that displayed characteristics that fit the primary persona were placed in the middle, those that displayed superior expertise (constantly use or have used real estate software before) on the far right, and finally those who displayed minimal expertise on the far left. This grouping of personas helped with distinguishing the primary personas from the secondary personas.



Figure 9

Rupert Dotson, Samia Burt, Saskia Reese and Tamera Daughtry were chosen as primary personas. These personas exemplified the survey results, each showed one of the desired characteristics, meticulous, very particular and crafty. Each individual was designed with the goal of an average real estate customer and centered around the responses of the survey. For example, Saskia Reese, her goal is to sell her deceased father's home and split the earnings amongst her family. She is very meticulous and enjoys her things to be very orderly. This correlates with the survey results as most user would like to be provided specific information about the houses (i.e. number of beds, number of bathrooms, etc.). She also represents those who prefer a balance between features and simplicity as she is somewhat technologically intelligent and creating a complex interface would not be beneficial for the users. The overall design of the product must center around the primary personas as these individuals best represent the average real estate user.

The secondary personas were those individuals who represented the extremes in the survey, those who showed expertise in the real estate product and those who displayed minimal expertise in the product. These groups are placed under secondary personas because they show characteristics that will not best represent the average user, however, are still potential users of the product. For example, Chay Mata, owned a property management company and wants to get rid of all his company assets by selling all properties. He is technologically intelligent, very resourceful and creative, he also spends most of his time on his computer. All these characteristics represent and individual who is an experienced user when dealing with real estate products. Another example is Debra Wallace, she is looking to purchase a property near her grandchildren. She likes simplicity and usually needs help when using technology. These characteristics do not coincide with the average user derived from the survey and therefore placed as a secondary persona.

8. Interface Presentation

This interface will be represented as a mobile application, the reason for this is, it is extremely easy to integrate a lot of the features our respondents indicated as high importance(i.e. Map feature, contacting various individuals etc..). This software very much could have also been developed as a web based application, but as our users were very much reliant on their phones in their daily lives it made much more sense to build a piece of software that was centered around this aspect of their lives. By developing it as a mobile application, things such as contacting buyers and sellers (pressing a button to contact the Agent or Home owner) and using widgets such a google maps(to scope out other features relative to the area or directions to the specific home) which may need extra steps if done on a website rather than a mobile application are avoided. All these features can be easily integrated on a single application and will help users get

their work done quickly and intuitively and help minimize any of the extra guess work that may become present.

9. Interface Mockups

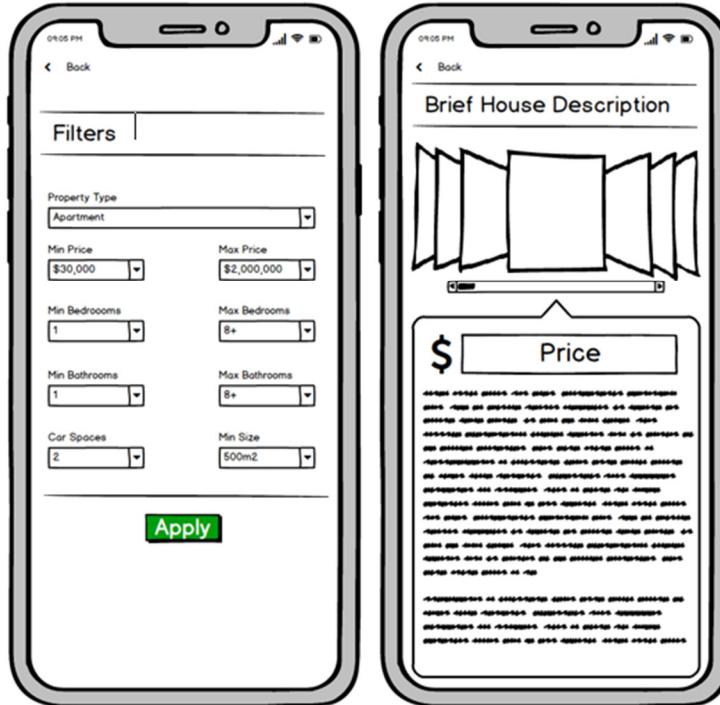


These mock-ups represent the List View. This will be the app's "homepage" by default, depending on whether the user last exited the app when browsing on the 'Buy' tab or the 'Rent' tab. This view features a navigation pane at the top for 'Buy', 'Rent', and 'Sell', and a button beside the pane to switch to the Map View (pictured below). Below the navigation pane is a Location search (with a current location button beside it) in order to select the region to search for homes. The view's main content is displayed in a scrolling list of houses, with each card featuring a primary picture of the house, a house description, and the cost of the house (either the full cost or the price per month, depending on the 'Buy' or 'Rent' tab). Lastly, a persistent 'Filter' button is anchored to the bottom of the screen to provide access to the Filter View.



The mock-ups on the left represent the Map View (accessible from the Map button beside the navigation pane on the List View). This view provides more of a visual representation of the nearby houses available for sale or rent. The navigation pane remains the same, as does the location search (and 'current location' button). Markers are placed onto the map representing homes for sale or rent. When clicked, the marker shifts in appearance to indicate it has been selected, and a brief house detail pane is populated at the bottom of the screen. Users are still able to activate search filters via the "Filter" button anchored to the bottom of the screen, which will screen the markers to houses that fit the specified criteria. The detail pane also provides users with the option to call the agent or landlord, unlike the List View counterpart.

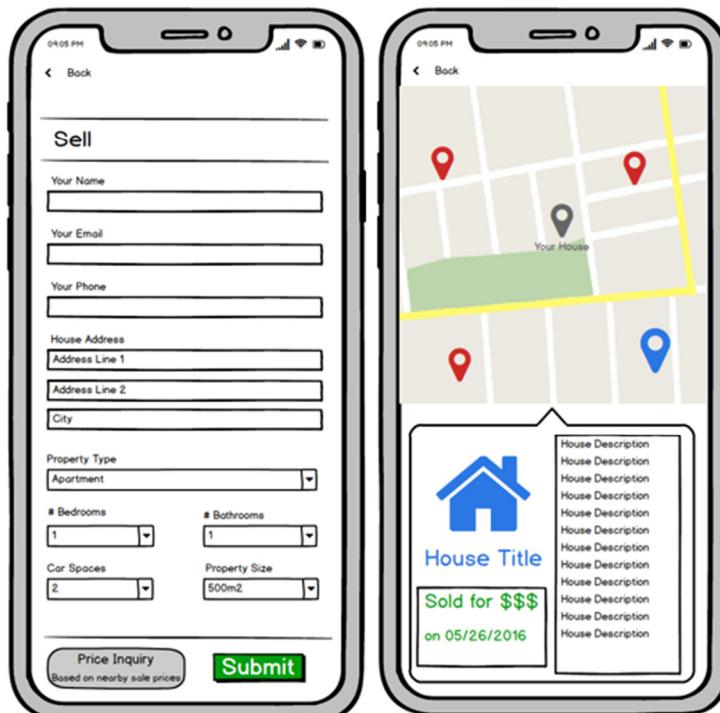
Figure 10



The Filters View (far left) appears when clicking the anchored “Filters” button on the List View or Map View. Some filters that we thought would be beneficial include Property Type, Min/Max Price, Min/Max # of Bedrooms, Min/Max # of Bathrooms, Car Spaces, and Min Lot Size. Once the user selects their desired filters, they’re guided towards the “Apply” button to return them to the previous page with an updated search.

The Detail View (immediate left) appears when clicking on a house (either to buy or rent). Users are able to scroll through a carousel of pictures (which can be clicked to be viewed full-screen) and are displayed alongside an asking price/renting cost and a description of the house provided by the seller, agent, or landlord.

Both views feature a “Back” button to return to the previous View at the top left.



The Sell View (far left) appears when clicking the “Sell” tab in the navigation pane. Users are provided with a form to fill in their contact information in addition to some information about the house they’d like to sell (such as address, property type, property size, etc.). At the bottom of the form, users are provided with an option to explore a Price Inquiry before submitting.

The Price Inquiry View (immediate left) appears when clicking on the Price Inquiry button shown previously. This brings up a view similar to the Map View, but populated with nearby houses that were recently sold. This gives users more information about how much their house could be worth, as it presents them with data such as the final sale price and sale date, while also providing them with pictures and descriptions of the houses displayed (if available).

Both Views also feature a “Back” button.

Figure 11

10. Conclusion

Presented in this document is the completed research, along with the examination of three different Real Estate websites to get a general sense of the advantages and disadvantages each website provided. This all culminated into a survey in which 25 different users were asked to give opinions not only on various Real Estate software they might have used, but also give a sense of their habits as to how they interact with technology. Using all the information gathered from the survey and prior research we were able to create a mockup of a mobile application that best represented the needs of our users.

The intent of the mock up and really this stage of the project as a whole was to take information that was provided through various means and create a software that was devoid of any shortcomings. The various tasks should be simple enough to the user, should be straightforward and obvious to use and every action they are presented with should provide a clear understanding of what they are doing and what they may need to do to get things accomplished. This is where the Mobile Application would shine, as users are more dependent on their phones for everyday use and view time as an important asset, a lot of features on a mobile platform can significantly cut down the times to perform the same tasks as would be performed on a website. Overall, we feel as though what we have created is the best representation of what Real Estate software should look like, and we will delve into it more during Phase 2 of this project when we create a physical mockup of the design.

11. Appendix

11.1 Persona Brainstorm Rough Work

People who have used Real estate software:

- previous homeowners
- employed
- adults older than 25
- Crafty because going around typical real estate process
- meticulous, like being very detailed
- Particular, likes to be specific when indicating what they want
- use more of their phone than computer

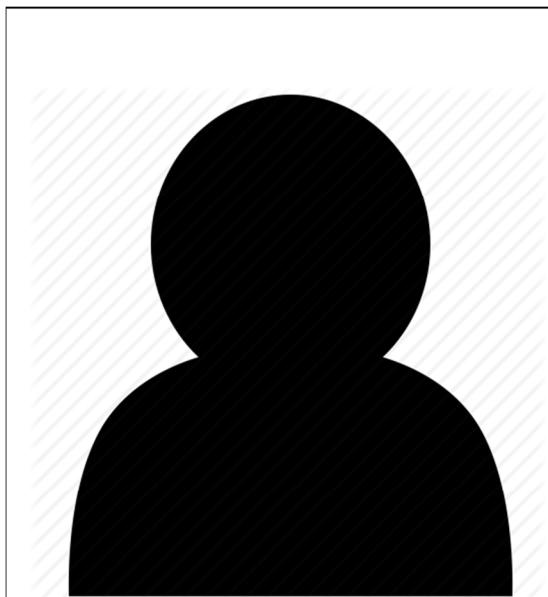
11.2 Personas

Name:

Nicole Ralph

Bio:

Works in a Human
Resources department at a large
company
Has been working for 8 years
and just paid off her student debt
Has been renting a house for



Personal Goals:

To settle in one place with her
family

Personal Info:

Age: 30

Sex: Female

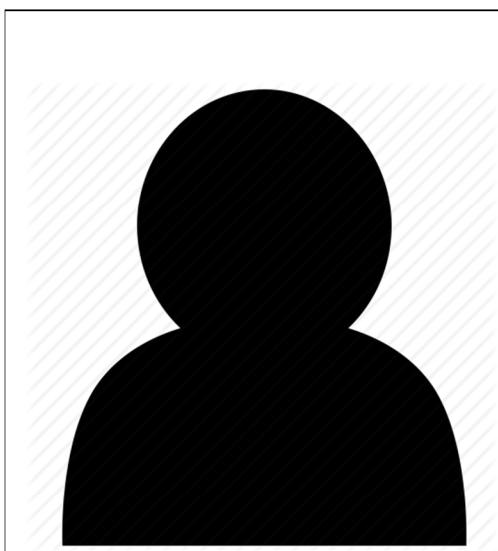
Education: Bachelor of Arts

Marital Status: Married

Immediate Goals:

To buy a
house/condo

Habits, Behavior, Interests:



Name:

Troy Herman

Bio:

Goes to University in
Toronto
Currently studying Computer
Science, taking Business courses
that teach future investments
Lives at the University's

Personal Goals:

To finish his degree in
Computer Science
To possibly invest in real
estate in the future

Personal Info:

Age: 21

Sex: Male

Education: 3rd Year
University (Bsc)

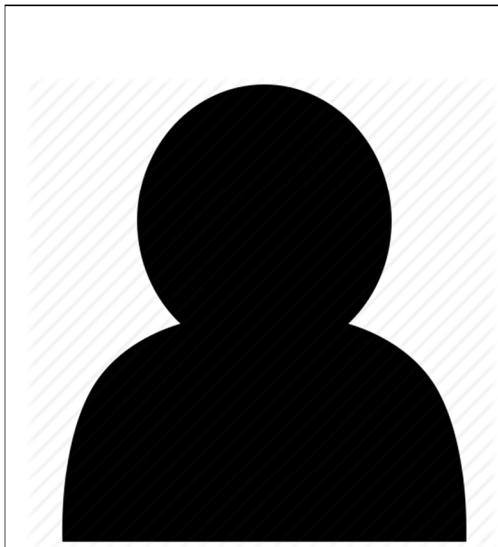
Marital Status: Single

Immediate Goals:

Understand how the
real estate market works

Habits, Behavior, Interests:

A very meticulous person
Homo Logicus
Spends many hours in front of a computer
screen



Name:

Debra Wallace

Bio:

Retired from her job as a
Secretary 2 years ago
Lives in a house in Grimsby
with her husband of 30 years

Personal Info:

Age: 60

Sex: Female

Education: Highschool
Diploma

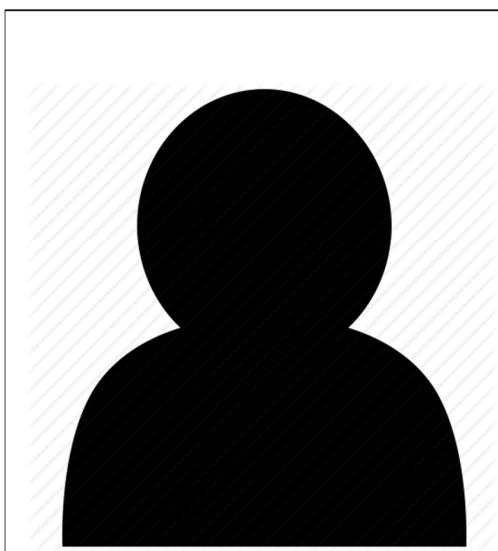
Marital Status: Married

Immediate Goals:

Find a property to buy
in Hamilton
Sell the current house
they are living in

Habits, Behavior, Interests:

Enjoys spending time with her
grandchildren
Likes simplicity
Usually needs help when using
technology



Name:

Dolly Parker

Bio:

Works as an Executive at a large Accounting firm
Enjoys investing in new projects that have great return
Lives in an apartment located in downtown Toronto

Personal Goals:

Find a new project to invest in
Learn the real estate market to understand the best locations to invest

Personal Info:

Age: 44

Sex: Female

Education: University (MBA)

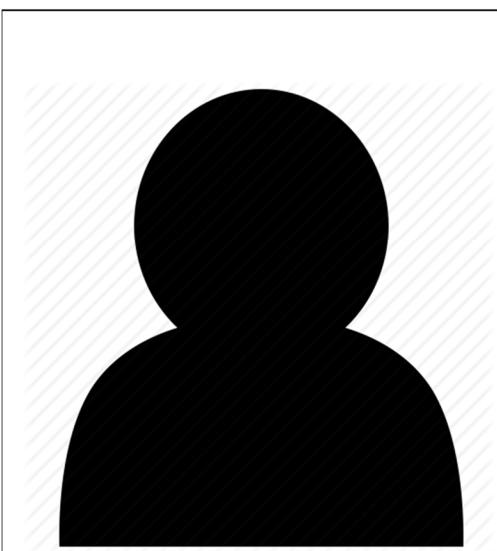
Marital Status: Divorced

Immediate Goals:

Purchase a property and list it for rent

Habits, Behavior, Interests:

Very business driven, always looks for profitability
Very time oriented, always on her phone
Enjoys shopping and taking vacations



Name:

Karabo

Bio:

Stay at home mom
Currently living in a house
located in Brampton

Personal Goals:

Learning how to cook gourmet
meals
Wants to get bigger Kitchen
with better appliances

Personal Info:

Age: 28

Sex: Female

Education: Highschool
Diploma

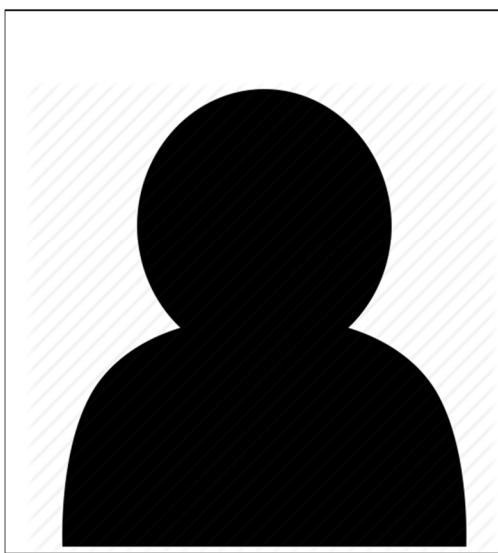
Marital Status: Married

Immediate Goals:

Looking for a house
with a big Kitchen

Habits, Behavior, Interests:

Loves cooking
Enjoys making lists of what to do
Not very technologically intelligent
Spends little time on Computer or Phone



Name:

Rupert Dotson

Bio:

Works as a Teacher
Currently living in a house
located in Milton

Personal Info:

Age: 34

Sex: Male

Education: University (BA)

Marital Status: Married

Personal Goals:

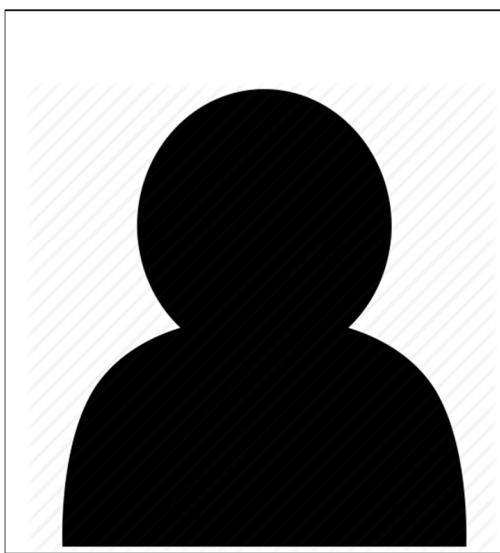
Wants to build his basement to
possibly increase the value of his
home

Immediate Goals:

Look at the prices that
are listed for houses in
his area

Habits, Behavior, Interests:

Enjoys Teaching
Always on his phone checking for emails
Some what technologically intelligent



Name:

Peyton Crouch

Bio:

Attends University in Ottawa
Currently renting a house
near his University

Personal Goals:

Finishing his degree
Help his parents search for a
home

Personal Info:

Age: 20

Sex: Male

Education: 3rd Year
University (BSc)

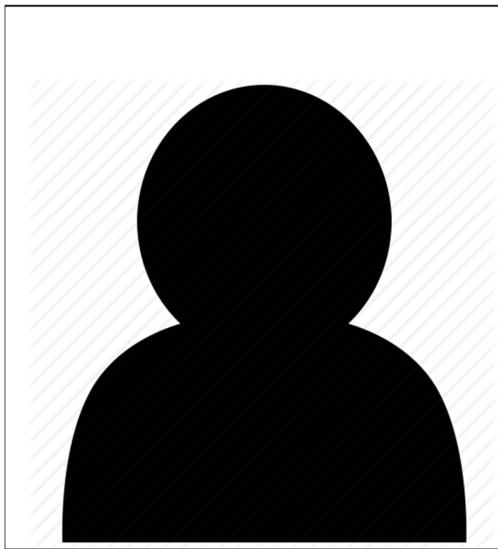
Marital Status: Single

Immediate Goals:

Recommending
different houses to his
parents

Habits, Behavior, Interests:

Loves his Family
Enjoys playing soccer and basketball
Always on his phone texting his friends
and family
Very technologically intelligent



Name:

Dewey Wang

Bio:

Works at a nuclear plant
Currently living in a house
located in Bowmanville

Personal Info:

Age: 42

Sex: Male

Education: University-
Masters in Chemistry

Marital Status: Married

Personal Goals:

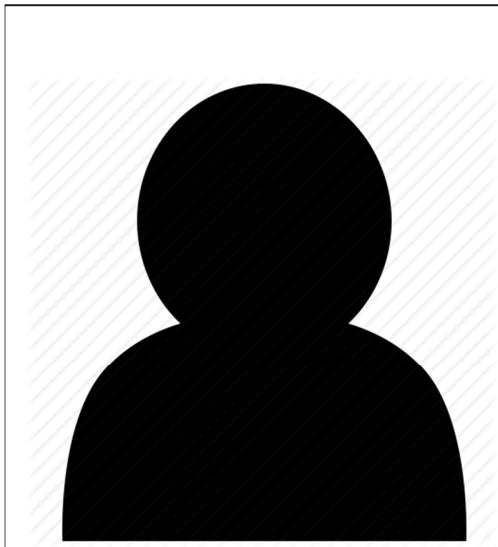
To grow his investment
portfolio
Look for new properties to
invest in

Immediate Goals:

Looking for
house/condo to buy and
place on

Habits, Behavior, Interests:

Enjoys reading
Constantly boasts about his investment
portfolio
Slightly technologically intelligent
Spends little time on Computer or Phone



Name:

Samia Burt

Bio:

Stay at home mom
Currently living in a house
located in Oakville
Takes care of her family of 8

Personal Goals:

Wants a place that
accommodate her whole family
Wants to make a nursery room
for her newest born

Personal Info:

Age: 34

Sex: Female

Education: Highschool
Diploma

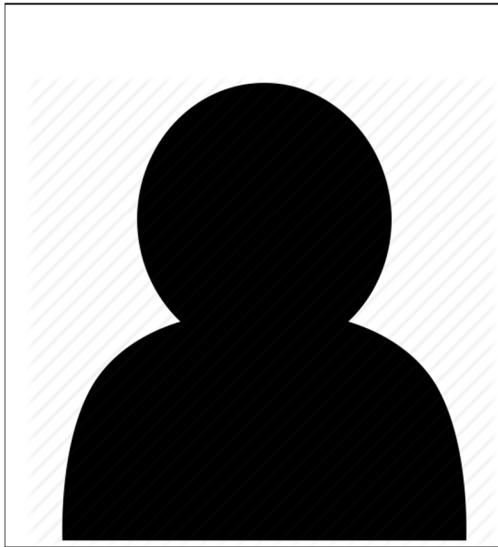
Marital Status: Married

Immediate Goals:

Looking for a house
which is greater than
2800 square feet

Habits, Behavior, Interests:

Extremely family oriented
Focuses on the specifics so she can get the
best for her family
Spends most her time on her phone
talking and texting her family members



Name:

Yousif Abdi

Bio:

Works as a contractor
Currently living in a house
located in Barrie
Enjoys flipping homes

Personal Info:

Age: 30

Sex: Male

Education: Highschool
Diploma

Marital Status: Married

Personal Goals:

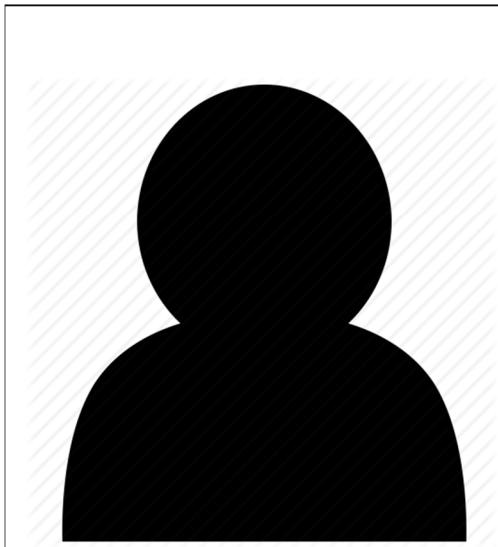
Find new properties to fix and
sell for a profit
Wants to hone his construction
skills

Immediate Goals:

Looking for a home
with low value home so
he can flip it

Habits, Behavior, Interests:

Loves construction
Enjoys working with his hands
Not very technologically intelligent
Spends most of his time on his phone



Name:

Eric Cannon

Bio:

Retired for the past 4 years
Currently living in a house
located in Newmarket
Enjoys spending time with
his grandchildren

Personal Goals:

Spend more time with
grandchildren
Wants to downsize his current
home looking to buy a house

Personal Info:

Age: 60

Sex: Male

Education: College

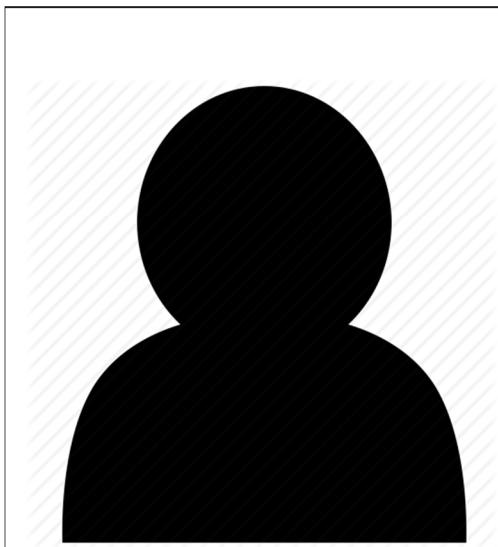
Marital Status: Married

Immediate Goals:

Looking to buy a
home smaller than his
current
Want to stay close to
...

Habits, Behavior, Interests:

Enjoys spending time with his
grandchildren
Not very technologically intelligent
Spends little time on his phone

**Personal Info:**

Age: 40

Sex: Male

Education: University (BA)

Marital Status: Divorced

Name:

Chay Mata

Bio:

Owns a Property Management Company
Currently living in a house located in Windsor
Wants to liquidate his company

Personal Goals:

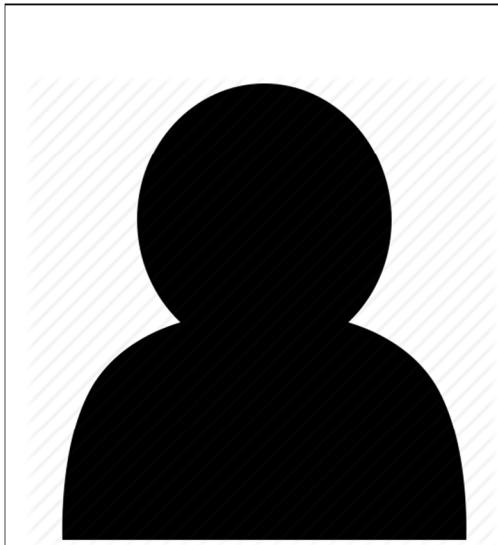
Wants to get rid of all his company assets
Start a new company in software development

Immediate Goals:

Sell all the properties in his company

Habits, Behavior, Interests:

Enjoys creating new business ideas
Technologically intelligent
Spends most of his time on his Computer
Taking courses on software development
Very resourceful and creative

**Personal Info:**

Age: 35

Sex: Female

Education: Highschool
Diploma

Marital Status: Married

Name:

Saskia Reese

Bio:

Works as a bus driver
Currently living in a house
located in Welland
Father recently passed away,
and in his will gave her the
family house

Personal Goals:

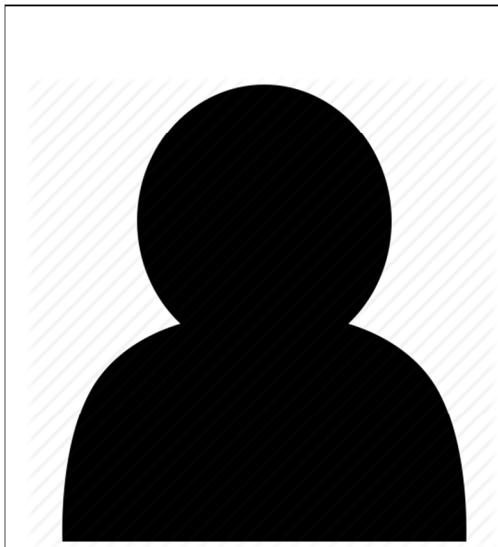
Deciding whether to keep the
house and rent it out or sell the
property

Immediate Goals:

Sell the house and
distribute the earnings
between her family
Search for the best
value for the house

Habits, Behavior, Interests:

Enjoys spending time with her Kids
Very meticulous, likes everything to be
orderly
Somewhat technologically intelligent
Spends most of her time on her
phone

**Personal Info:**

Age: 20

Sex: Female

Education: Highschool
Diploma

Marital Status: Single

Name:

Tatiana Figueroa

Bio:

Works as a cashier
Currently living with her
parents in Barrie
Enjoys spending time with
her friends

Personal Goals:

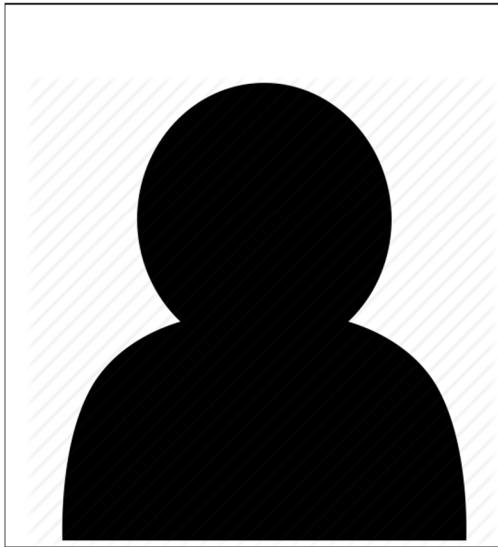
Wants to move out of her
parents home
Always have massive parties
at her place

Immediate Goals:

Looking for a low cost
studio apartment
Must be downtown
where all the parties
happen

Habits, Behavior, Interests:

Enjoys spending time with her friends
Dislikes how strict her parents are
Some what technologically intelligent
Spends most of her time on her phone
texting and calling her friends



Name:

Tamera

Bio:

Works as a dental hygienist
Currently living in a house
located in Mississauga
Recently divorced her
husband of 5 years, was able to
keep one of the family's houses

Personal Goals:

Renovate current house
Sell the house
Buy a house closer to her
work

Personal Info:

Age: 33

Sex: Female

Education: College

Marital Status: Divorced

Immediate Goals:

Looking for a home
that is closer to barrie
downtown

Habits, Behavior, Interests:

Enjoys her profession
Spends spends her time mostly on her
laptop shopping
Likes specific filters to organise her
shopping list

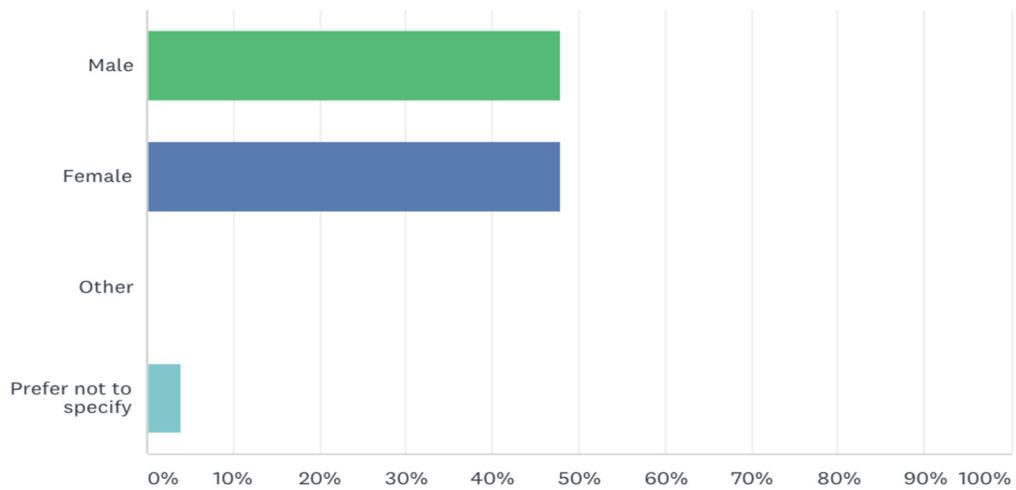
11.3 Survey Results

Q1

[Customize](#)
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What is your Gender?

Answered: 25 Skipped: 0



ANSWER CHOICES	RESPONSES
▼ Male	48.00%
▼ Female	48.00%
▼ Other	0.00%
▼ Prefer not to specify	4.00%
TOTAL	25

Q2

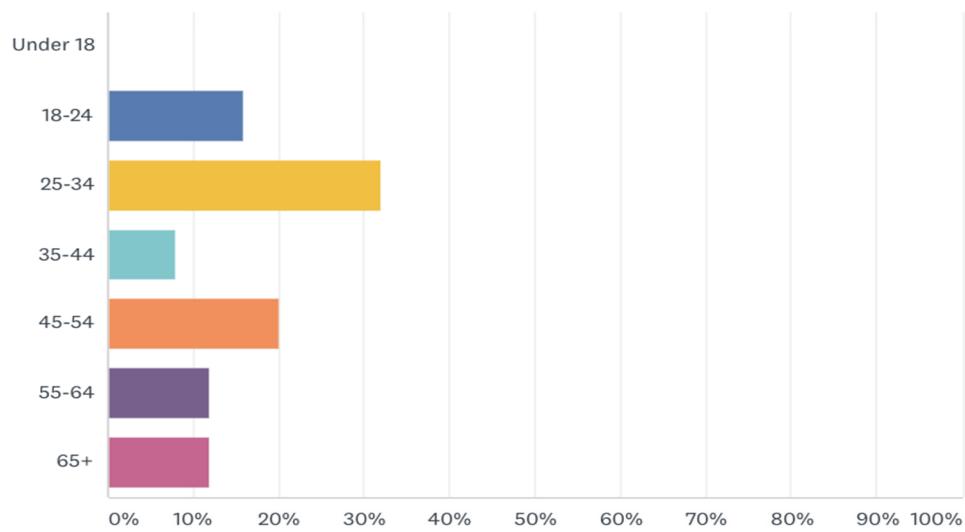


Customize

Save as ▾

What is your age?

Answered: 25 Skipped: 0



ANSWER CHOICES	RESPONSES
▼ Under 18	0.00%
▼ 18-24	16.00%
▼ 25-34	32.00%
▼ 35-44	8.00%
▼ 45-54	20.00%
▼ 55-64	12.00%
▼ 65+	12.00%
TOTAL	25

Q3

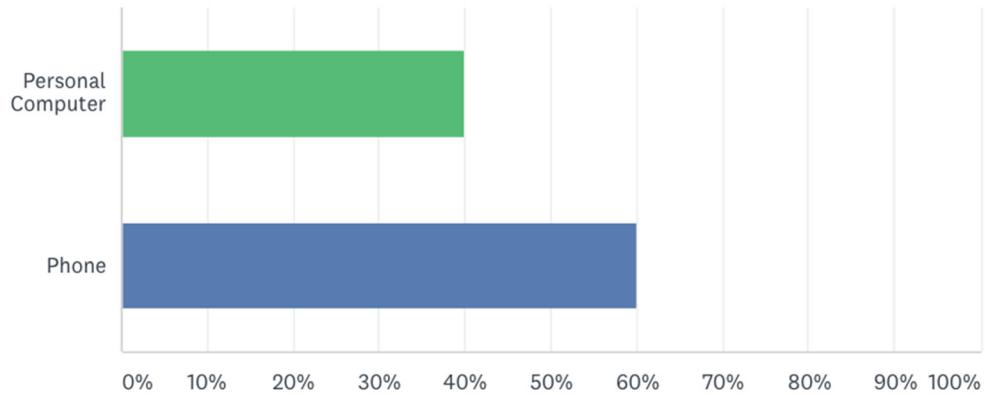


Customize

Save as ▾

What do you use more often?

Answered: 25 Skipped: 0



ANSWER CHOICES	▼	RESPONSES	▼
▼ Personal Computer		40.00%	10
▼ Phone		60.00%	15
TOTAL		25	

Q4

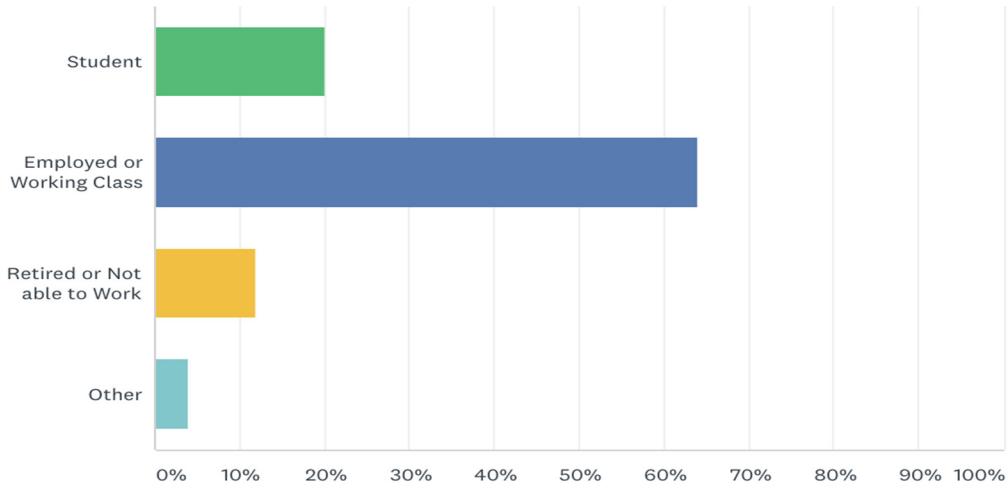


Customize

Save as▼

What is your current status?

Answered: 25 Skipped: 0



ANSWER CHOICES	RESPONSES
Student	20.00%
Employed or Working Class	64.00%
Retired or Not able to Work	12.00%
Other	4.00%
TOTAL	25

Q5

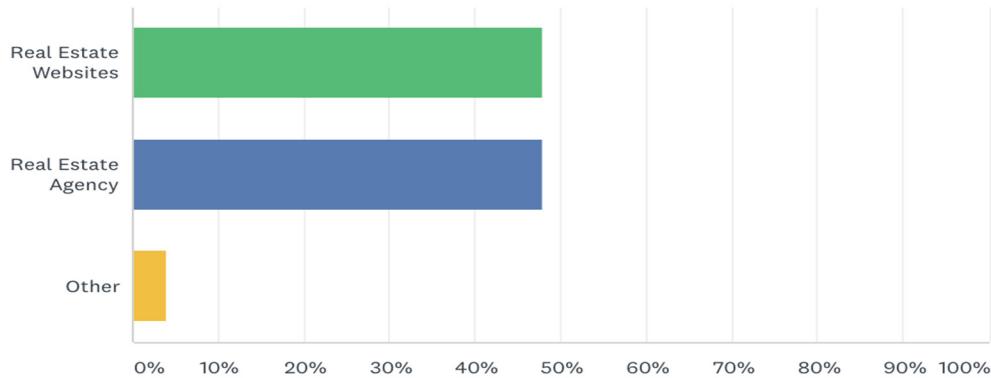


Customize

Save as▼

If you were to Buy/Sell a home, which option would you prefer?

Answered: 25 Skipped: 0



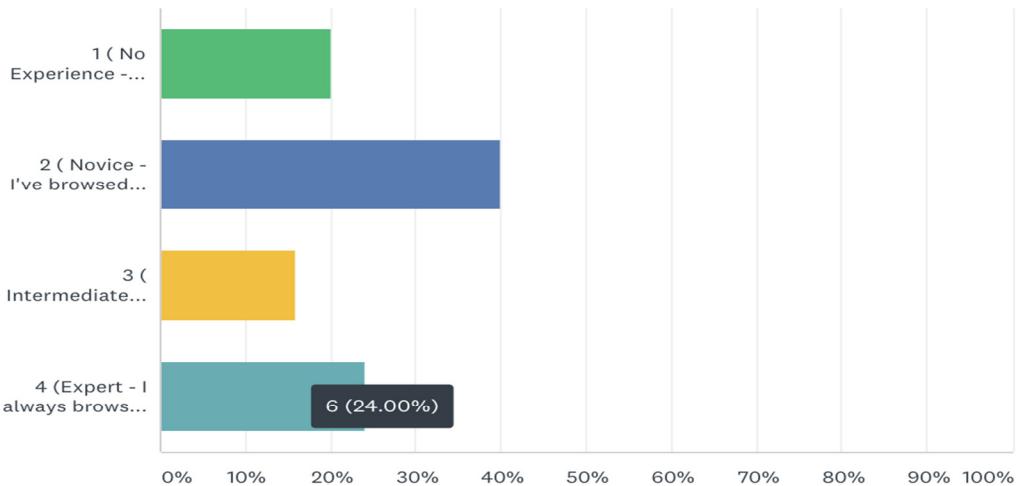
ANSWER CHOICES	RESPONSES
Real Estate Websites	48.00%
Real Estate Agency	48.00%
Other	4.00%
TOTAL	25

Q6

Customize
Save as ▾

How would you describe your experience or skill level with real estate software? (1 being No Experience, 4 being Expert)

Answered: 25 Skipped: 0



ANSWER CHOICES	RESPONSES
▼ 1 (No Experience - Never touched a Real Estate website)	20.00% 5
▼ 2 (Novice - I've browsed through on occasion)	40.00% 10
▼ 3 (Intermediate - I've attempted to Buy or Sell a house at least once)	16.00% 4
▼ 4 (Expert - I always browse through or list my home on a Real Estate website)	24.00% 6
TOTAL	25

Q7

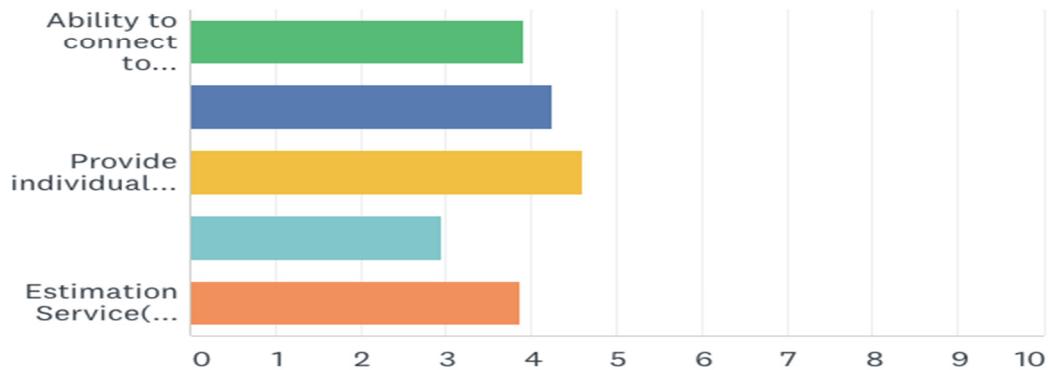


Customize

Save as ▾

What would you look for in a Real Estate website (Rate in order of importance 1-Not important 5- Very Important)

Answered: 25 Skipped: 0



	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
Ability to connect to others (i.e buyers/Sellers, Agents)	4.00% 1	4.00% 1	24.00% 6	32.00% 8	36.00% 9	25	3.92
Use Maps to view homes in relation to other features	4.00% 1	12.00% 3	0.00% 0	24.00% 6	60.00% 15	25	4.24
Provide individual information about the houses(i.e # Beds, Baths, Year built etc)	0.00% 0	4.00% 1	8.00% 2	12.00% 3	76.00% 19	25	4.60
Chat Service (Expert answers throughout the day)	24.00% 6	8.00% 2	32.00% 8	20.00% 5	16.00% 4	25	2.96
Estimation Service(Provide computerized estimate of your house based on various factors)	8.00% 2	4.00% 1	24.00% 6	20.00% 5	44.00% 11	25	3.88

Q8

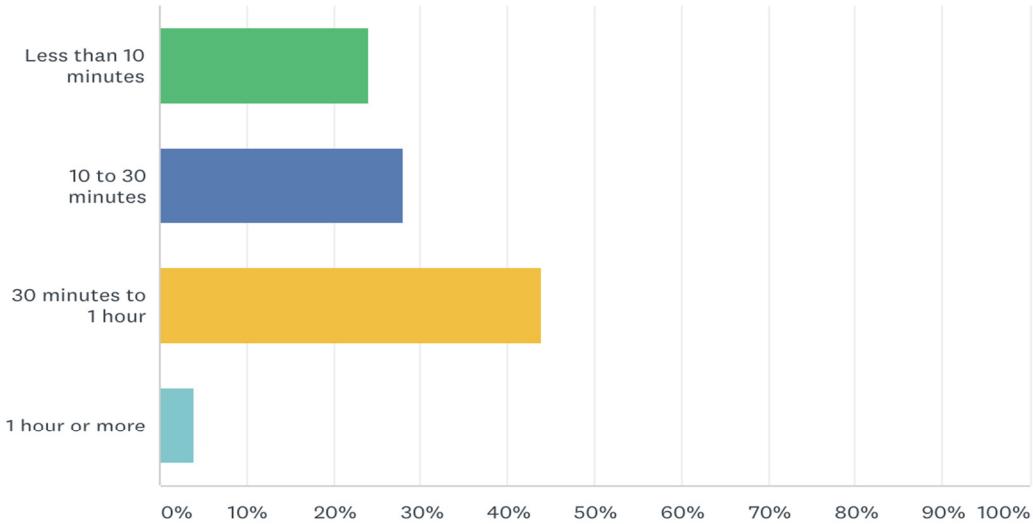


Customize

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How much time are you willing to spend on a Real Estate website?

Answered: 25 Skipped: 0



ANSWER CHOICES

- ▼ Less than 10 minutes
- ▼ 10 to 30 minutes
- ▼ 30 minutes to 1 hour
- ▼ 1 hour or more

TOTAL

RESPONSES

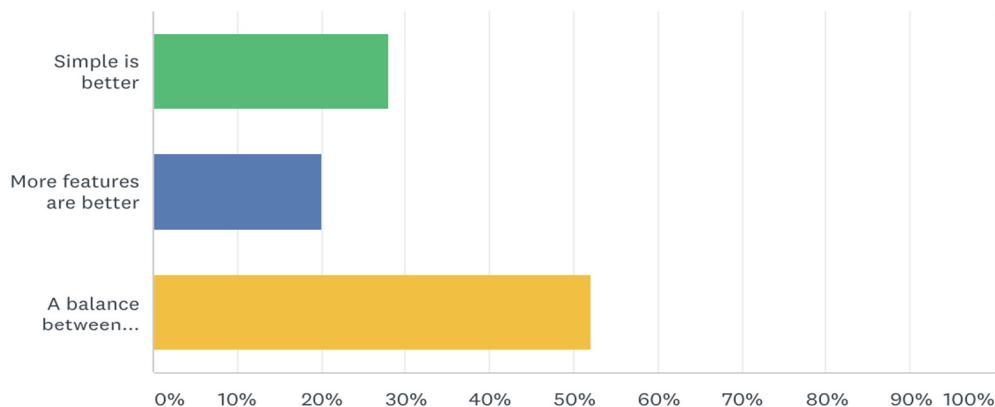
24.00%	6
28.00%	7
44.00%	11
4.00%	1
TOTAL	25

Q9

🔗
Customize
Save as ▾

Would you rather use Real Estate Websites that incorporate many features, or one that is simple and only includes what is absolutely needed to get the job done?

Answered: 25 Skipped: 0



ANSWER CHOICES	RESPONSES
▼ Simple is better	28.00%
▼ More features are better	20.00%
▼ A balance between features and simplicity is better	52.00%
TOTAL	25

Q10

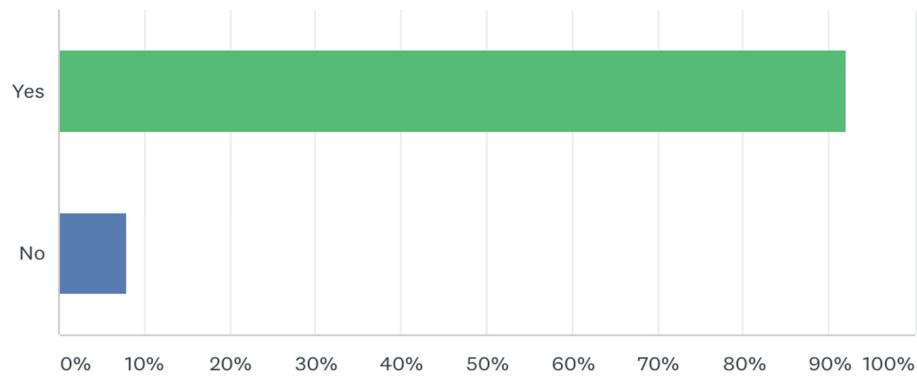


Customize

Save as ▾

Would you consider using a Real Estate Websites in the Future?

Answered: 25 Skipped: 0



ANSWER CHOICES	▼	RESPONSES	▼
▼ Yes		92.00%	23
▼ No		8.00%	2
TOTAL			25