

Section 1

Eric Cherin continued to research the process needed to develop components for the website and web service, primarily focusing on Google Web Designer. Vincent Gasbarro identified realistic constraints and professional and ethical responsibilities that the group would need to uphold. Robert Pinto discussed objective attributes and constructed the objective tree.

	Vincent Gasbarro	Eric Cherin	Robert Pinto
Percentage of Effort	33%	33%	34%

Section 2

This section will serve to communicate the new useful information that was found during further research into the technical aspects behind building the web service. The group has gained a deeper understanding of Google Web Designer and how it will be implemented in our project, along with many of its characteristics and intrinsic benefits. The group has also determined how it will interface other applications inside of the Google Web Designer. This progress has been compiled and documented in the following paragraphs of section 2.

Although the Google Web Designer automates tedious design of CSS and HTML, it is still necessary to format it to the structure and syntax of the language itself. The HTML is divided into the Head and the Body. The head contains meta, style, and link tags, while the body contains the actual document or the text that you intend to display on the webpage. The CSS formatting is actually just the code in the style tag [1].

Google Web Designer has the ability to set up a basic web page using HTML5. Within the program the group will have the ability to create HTML, CSS, XML, and JavaScript files. The group can use the designer to add and space simple elements such as images, video, and text. From there more advanced features can be added such as components, animations, 3d tools, and events.

The group can add a premade function that uses JavaScript such as Skype or PayPal. Also, it is possible to add a script in the heading to import a premade JavaScript into the HTML file. Next certain functions of the script can be accessed in order to display and create events on the webpage. For example, the group can generate a Skype call button with an array of Skype Names. To implement custom designed JavaScript it is necessary to use the tag, `<script>` in HTML. This allows for the implementation of match making algorithms and encryption for login credentials [2][3].

PHP script can be added by placing the tag, `<p>`, in the body of the HTML document. From there, SQL in PHP can be used to communicate with the database. The database can then access query data contained in a relational database. This means it is necessary to define characteristics in columns and add instances using rows. There are many commands to modify and access data in the database. However, PHP will not do anything, as it simply returns data. In order to process the data and create dynamic code, XML is used to transport data into a JavaScript function.

The overall process to create a web page starts with Google Web Designer. First the group will use Google Web Designer to arrange the layout, graphics, and interactivity of the website as desired. This process will output an HTML5 document with necessary files.

JavaScript can be placed in the body of the HTML document to add various services such as Skype and PayPal. The PHP script will use SQL and will be placed in the HTML body in order to communicate with the server. Finally, XML can be used in order to convey the results of the PHP script to JavaScript [4] [5] [6].

Section 3

Realistic Constraints

A huge benefit of designing a web service is that the only true constraint is the developer's knowledge of the tools necessary for development. Economically, there are no massive costs associated with an introductory web service. While a domain name does cost money, at a \$15 price point, even a college student can afford that. There also exist free hosting services to provide the first stepping stone for the web service. If the web service is successful, money should still not be an issue as with a large user base, revenue can be generated through pricing packages, advertisements, and/or partnerships with other companies and brands. Environmentally, a web service should have absolutely no controllable constraints. The group as developers do not physically own any aspect of the service as it is being hosted through third party services. In theory, the electricity necessary for said third party service to host the web service is an environmental constraint, but it would be so small that it is a non-factor. Like environmental constraints, there would be no tangible health constraints as the product is fully digital and thus could only be harmful by user overuse. The primary safety constraint would be for the developers to provide a secure method of protecting user's private information. This constraint would fall completely on the developer being knowledgeable about security and following the correct procedures for designing a secure system. Again, because a web service is digital, there are no manufacturability constraints. Manufacturability refers to the actual physical construction of a product on a large scale. The group would be using programming languages and computers to design a product, thus no industrial machines would be involved. The only concerns for the group would be the aptitude for learning languages and time management.

Sustainability is an interesting constraint. A product's success would be rated by the amount of user adoption and continued use. However, unlike physical products, a web service can be upgraded or changed at any point to suit user requests. This flexibility allows the group as developers to cater to users at any point in the development or launch process. Thus sustainability as a constraint isn't a major issue as the group can modify the product if needed to attract and retain more users.

Professional and Ethical Responsibilities

To discuss professional and ethical responsibilities, the IEEE Code of Ethics will be used as a reference point [RR]. First and foremost, the group is responsible for the safety of the users as discussed above. The group must design for the security of private information and immediately inform users if their information has been compromised or policies change. User information cannot be used maliciously against users in any form. Also, the group cannot discriminate against users beyond established constraints. For example, race or gender should never be a factor, but as the service is tailored towards high school and college students, age might need to become a factor to prevent any falsified information or "trolling" from other parties. The group should not fabricate any estimates regarding usage data, especially for the user of obtaining investments. It also shouldn't accept bribes or other unlawful payments for services or for

disclosing private information. The group should be open to criticism and adapt accordingly. Finally, the group should support each other and colleagues in the pursuit of technical knowledge and professional development.

Section 4

Objective Attributes List

Functional	DIRECTLY IMPORTANT
Accessible (easy to use)	Functional
Clean and interactive webpage	Accessible
<i>Modes for communication between connected students</i>	<i>Constraint on Accessible</i>
Large Mentor Base	DIRECTLY IMPORTANT
Effective search engine and matching service	Functional
Easy to distribute	Marketable
Appeals to high school students, high schools, and parents	Marketable
Quality customer service	Appeals to high school students, high schools, and parents
Easy to join	Accessible
<i>Access to features via web</i>	<i>Constraint on easy to distribute</i>
Perceived to benefit high school students	Appeals to high school students, high schools, and parents
Easy to join	Appeals to high school students, high schools, and parents
Appeals to college students	Large mentor base
<i>Incentivized</i>	<i>Constraint on Appeals to college students</i>
Marketable	DIRECTLY IMPORTANT

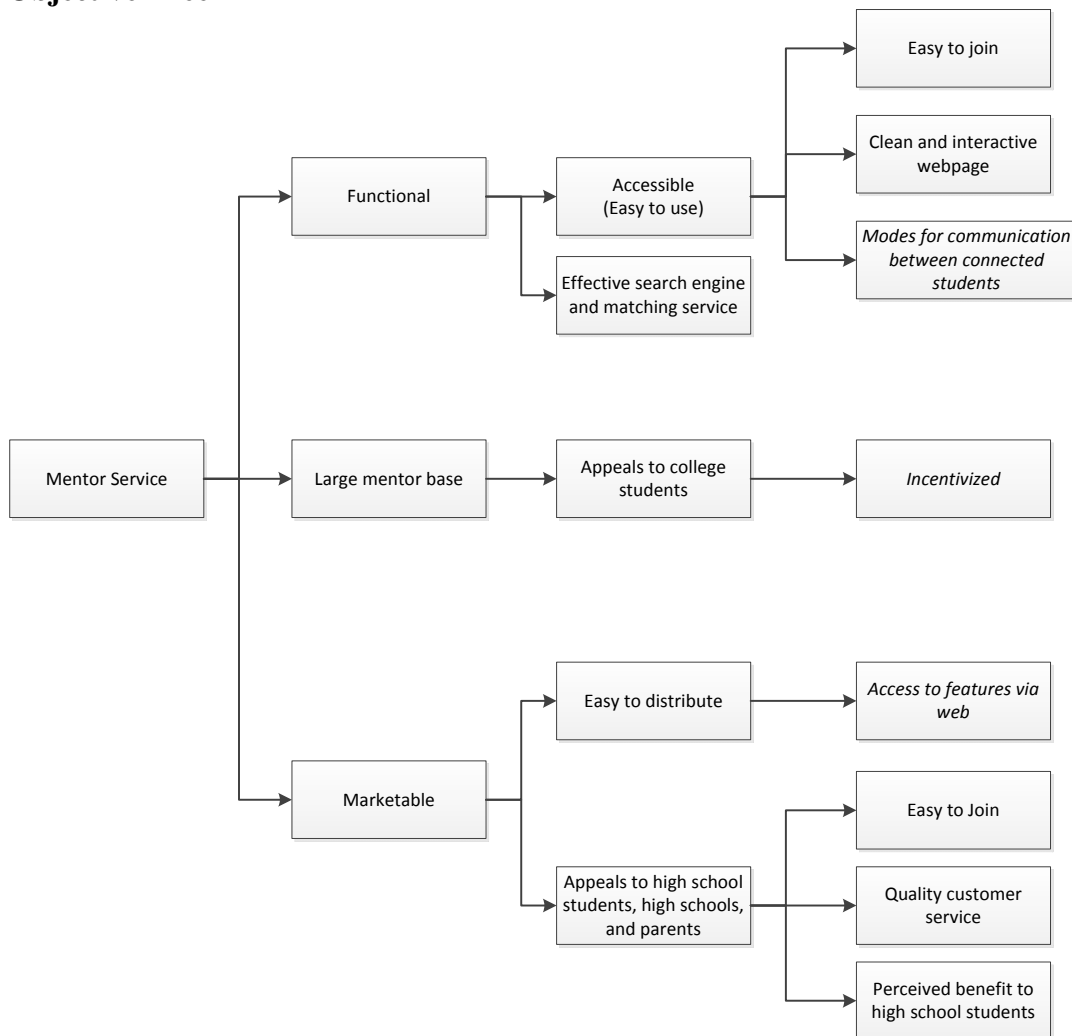
The list above contains all of the objective attributes that the group has considered at this time. As you can see, the group found three of the objective attributes to be directly important to the mentor service. These can be seen as absolutely necessary for the success of the service, and all of the other attributes will build into these. They state that the service must be functional, marketable, and that it must have a large mentor base.

For the service to be functional, it must be accessible (easy to use) and have an effective searching method and matching service. These are the two basic attributes that the group decided would result in a functional mentor service and therefore would be a good point to branch off more from. The group believed that an effective matching service was a basic attribute and did not require any more attributes to be built into it. For the service to be accessible though, the group felt that a few attributes were necessary. It would have to be easy to join, have a clean and interactive webpage, and have modes for communication between connected students. These attributes are all directed towards making this service easy to use. The group also decided that the modes for communication attribute was a constraint on accessible because it is a necessity and can only be met or not met; there is no in between.

The second directly important attribute was a large mentor base. The group decided on this because the service can absolutely not function without it. To gain a large mentor base, the service must appeal to college students, which will mainly be done through incentives. Therefore, this service will have to be incentivized, making that attribute a constraint on appealing to college students.

The final directly important attribute was marketability, which was further divided into two attributes. To be marketable, the service would have to be both desirable and easy to distribute. Being a web service, there should really be no concern with it being easy to distribute, but to display that, the group made accessing features via the internet a constraint. For the service to be desirable, it has to appeal to all of the potential stakeholders on the user's side. Those would be high school students, high schools themselves, and these students' parents because each of these groups has a personal interest in the success of the participants. To appeal to these groups, the service must once again be easy to join, it must have a perceived benefit for the users, and it should have quality customer service and technical support.

Objective Tree



Above is the objective tree for the project's objective attributes list. Reading the tree downwards will reveal how a goal is defined, and reading it upwards will show why a subgoal is important.

References

[1] <http://www.w3schools.com/>

[2] <http://developer.skype.com/skype-uris/skype-uri-tutorial-webpages>

[3] <https://developer.paypal.com/docs/integration/web/>

[4] <http://docs.mongodb.org/manual/tutorial/>

[5] <https://dev.mysql.com/doc/refman/5.0/en/tutorial.html>

[6] <https://support.google.com/webdesigner/#topic=3249465>

[] IEEE Code of Ethics. <http://www.ieee.org/about/corporate/governance/p7-8.html>