Name: Steven Tran

ID: 1210776512

Class: Chen T-TH 4:20

**Barrett Mid-Term Submission**

**Idea**: Create a price tracker for amazon for certain products in order to discover the best times to purchase certain items, since prices usually fluctuate depending on the demand for different items.

**Plan:**

(SERVER)

**Framework**: Since it is necessary that the server be able to send updates to the user upon the discovery of a new price, a pure HTTP server is unviable, since the client only updates when a request is sent to the server. However, HTTP is quite nice for hosting HTML and requests for the rest of the website. Therefore, a solution is the use of web sockets, which will the server to send updates to all users connected at a certain point of time, allowing for real-time updates.

- Specifically, I will be working with the Node JS express server to create a web server and will be using the Socket.IO library for web socket integration. In addition, I will be using the Amazon Product Advertising API in order to find products and will use the Cheerio library in order to send simple API requests. The data from these requests stored will be stored in MongoDB, which will integrate with Passport, a simple JS library that allows for easy user authentication, since it automatically handles cookie handling. For actual deployment, I will use Heroku for cost efficiency and automatic HTTPS integration, since I do not foresee immense traffic.

(FRONT END)

For the actual front end, I will most likely, of course, use HTML that will be hosted through the server. Since a large portion of the UI will depend on the data visualization, I will use the Graph2D library in order to generate interactive graphs that can be seen by the user. For the rest of the page’s CSS, I will most likely use Bootstrap, which provides a sleek design that is rather easy to use. Finally, for easy HTML element management, as well as AJAX calls to the server, I will use, of course, JQuery for this purpose.

**Time Table (From current date)**

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| --- | --- |
| Week of 3/20 | Finish basic server heuristics |
| Week of 3/27 | Add authentication and database integration |
| Week of 4/3 | Start creating price tracker using Amazon API |
| Week of 4/11 | Start front end and integrating server with UI |
| Week of 4/18 | Tie everything together and beautify the user experience |
| Week of 4/25 | Deploy app to Heroku and ensure everything works |