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CS 488 Project Guidelines
Due Saturday, 24 September through the Task 1 link
You and your partner need to define the basis of a project according to these criteria. Be brief, but provide enough detail so I can make sense of what you're proposing. Monday we'll present the options, and Wednesday we will build teams around the most viable options. I may ask for clarification before Monday.
You have first priority to be on the team of most likely four (but no fewer than three) to do the project, but you are not obligated to stick with it. If you see another option you like better, switching is fine.

1. Present the problem statement. For example, an average homeowner designing a new house wants to play with options for installing solar panels.

A savvy buyer wants to track price fluctuations of a certain online product over time, and be notified if the price dips below a certain threshold. The buyer can track multiple products concurrently from different web stores.

2. Explain who the intended user is. It can be you or a fictitious entity you will represent. For example, the user is a homeowner building a new house.

A savvy buyer who is comfortable using novice command line commands.

3. Describe why the user has this problem. For example, there are are decisions to make and many options, which are difficult to manage for the average user.

When buying a product, it's slightly cumbersome and labor intensive to compare prices across sites, but really hard to track price changes over time. This product facilitates this process.

4. Describe how a solution would benefit the user. For example, maximizing the solar generation while minimizing the cost saves the homeowner money. Stay within the scope of the problem; e.g., do not consider climate change because the connection is too indirect.

This allows the user to track price changes for products over time, and perhaps "snipe" low priced products.

5. Describe the general flow for addressing the problem. The existing (or imagined) flow does not have to involve a computation solution. For example, the user defines the property and house layout and expected energy needs, then the system proposes

solutions that best satisfy the criteria. This used to be done on paper by expensive expert contractors.

The user has a program they can open on their personal computer that allows them to control a device running on their local network. The program allows them to add website sources in simple web format for the device to start continuously tracking the prices, and the user should be able to get notified in some way when a price drop has been detected.

6. What is the general nature of the solution? For example, app, standalone program, website, plug-in.

An implementation of a program able to continuously run on a simple computer unit without further interference from the user.

7. List the general software components you envision playing a role. For example, web server, database, game engine.

Continuously running software written in any language that can fulfill the desired result, and a program to be able to access and control the involved device to designate products to be tracked.

8. List the general hardware components you envision playing a role. For example, drone, VR headset, tablet. You are responsible for your own hardware, so be Reasonable.

A small computer solution such as a cheap server or raspberry pi unit, so that the software is able to run on a continuous basis.

9. Describe similar solutions, if any, and justify (or make up a justification) for why they are inadequate. For example, SolarBlaster 9000 does something similar, but its cost and complexity are prohibitive.

There are existing browser extensions such as Honey for notifying users about ways to save money when shopping online, however it is limited and doesn't fulfill the role desired here. Honey is only working when the user is actively shopping using the browser it is installed on, and only works on one website/browser at a time. The goal here is to simultaneously be checking multiple sources while the user is not active and send a notification to the user in the case of a sale.

Do not get detailed with software engineering aspects. Requirements and specifications, for example, come later in the process, unless they are directly relevant to the proposal and have a justification. For example, an Android app because you have an Android device and want to become an app developer.