Computer Systems Mentorship

Senior research project pre-proposal:

If you have a strong idea of what you want to do for your senior research project, complete **Box A**.

Otherwise, complete **Box B**.

| A 1: Describe the basic mechanics of your senior research project idea:  Our senior research project is to create a web portal for the Woodson Science Olympiad intranet. The Woodson Science Olympiad club has around 50 members, and we attend various competitions throughout the year, so there is a lot of data we have to store and send out to students. By making a central intranet for our members and enabling them to access the data they need, we will be able to distribute information effectively to everyone.  The primary features of the intranet will be:   1. Storing which events each team member is assigned to 2. Tournament information:    1. Dates, general schedules, and locations    2. Individuals’ event time slots    3. Links to competition portal and website    4. Training session dates and times 3. Storing photos and videos recorded from competitions 4. Storing team and event rankings for competitions 5. Storing tests PDFs for student use   For users, the primary features of the web interface will be:   1. Seeing their schedule for the day    1. Tournaments: events, time slots, event rooms    2. School: even / odd day, returns    3. Training sessions: events and time slots 2. Tracking their progress:    1. Marking which tests they have completed    2. Viewing how many tests their team has completed overall 3. Viewing their own rankings and average performance rankings   A 2: how many team members would you prefer (1, 2 or 3)?  We will be working in a group of 2 – myself and Dylan Nguyen (1590891).  A 3: what tools do you need (specific SDK, IDE, source code)?  We will need a hosting service (e.g. Hostinger or Heroku) and web development libraries such as Node.js, Bootstrap and React.  A 4: what kind of data structures do you expect to use or create?  We expect to use JSON/SQL for storing information on our servers, the bcrypt hashing algorithm to encrypt data, stacks and queues for displaying tests, and probably more. |
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| B 1: describe the interests that you have that might translate over into a large scale program  (AI, computer learning, genetic algorithms, platform gaming, strategy gaming,  3-D multiplayer gaming, physics, chemistry, biology, helping the community, etc.)  B 2: do you prefer to work alone or with others?  B 3: among your interests, take a while to research what kinds of programs are out there , and  report on any conclusions as to what you might want to do for your senior project. |