COP 4934 Initial Project Proposal/Requirements Document

Divide and Conquer

Create one document that has a total page count limited to 15 pages and contains the following content:

1. Project descriptive title, group members, and identification of sponsor (if any) or other significant contributors.

2. Project narrative description with a statement of motivation for the project (including at least one paragraph minimum per team member that describes their personal interest/motivation in this project), a discussion of the **goals** and **objectives**, and a discussion of the function of the project. Be sure to state any design criteria and constraints. Also you MUST include a separately labeled section or subsection with the title "Broader Impacts" that describes in a minimum of 1 paragraph, the broader implications or impact of your project on society both local and global. How might your project impact underrepresented groups (within science and technology (STEM) or society as a whole), the disabled, non-profit organizations, the environment, diversity, increased participation in STEM fields or the workforce, public engagement in STEM areas, improved national security, enhanced infrastructure, or improved education are all examples. These sections are usually qualitative and avoid using "numbers", but contain a conceptual discussion specific to the project. Use descriptions such as "lightweight, portable, programmable, low cost, flexible, high resolution, scalable, low power, accurate, mobile, peer-to-peer, autonomic" etc.

3. A list of specifications and **requirements** for the project as a whole *as agreed to by both your team members and your project sponsor*. Use as many quantitative measures and metrics as possible. Think about what metrics you will use to verify and evaluate your project. Answer the questions: how many, how often, how high, how long, how complex, what values, what events occur, etc. This section has "numbers". It is this section that describes in detail what it means for your project to "work".

4. One or more project block diagrams and/or figures in as much detail as possible (see below). Include a project high-level diagram that illustrates each component and their connections if appropriate. Sometimes a drawing will communicate more information about a specific implementation than just words. This is why patents use drawings as well as text as part of the legal description.

5. Project budget and financing. Remember to think about potential software licensing costs, charges from cloud-based services (e.g. AWS), code repositories, or website graphic design costs.

6. Project milestones for both semesters as best as can be determined now.

Your initial project identification documentation should contain a detailed project block diagram. This may consist of either a single complete block diagram or a series of nested diagrams, each level containing additional detail. Construct separate block diagrams for project software and project hardware, if applicable. Software diagrams should clearly indicate where the software is running (PDA, client, server, cloud), how the various pieces communicate, and what information they are communicating. The information provided for each block in the diagram should include:

1. The name of the Group member administratively responsible for the block.

2. Block name, which should be descriptive of its function.

3. Block status:
    a. To be acquired – meaning the block will be purchased or donated
    b. Acquired – block has been donated or purchased
    c. Research – block design approach is being investigated
    d. Design – block is currently being designed
    e. Prototype – block is currently being prototyped
    f. Completed – block design is a finished prototype

4. Name each input and output associated with each block

5. Diagram Legend. The legend should expand all acronyms and describe all named entities in the block diagram by giving brief definitions.

Include any additional information that would increase the understanding of the block diagram. The use of identifier grouping and color may be helpful. Example: Draw all of member 1's blocks with red rectangles; draw all of member 2's blocks with blue rectangles, etc.