**CS 492/493 Progress Template.**

Instructions: *Each team member should enter their activities performed for the capstone project in the last two weeks, as well as their expected activities for the next two weeks, along with anything holding them up on completing their activities. These should be discussed by the team and their advisor(s) during the weekly/biweekly meetings, and the advisor(s) should sign and date the sheet indicating a correct assessment of the team's progress. Students need to upload a signed and scanned version to blackboard. Progress reports uploaded to blackboard without a signature and score for progress will receive a 0 for progress.*

**Team/Project Name:** Biomechanical hand

**Team Member #1:** John Neis

**What I did since last progress report:**

Since the last progress report, I contributed to the design decisions made by the group as a whole, and I also contributed to the software requirements relevant to the mobile application. These requirements include functional and nonfunctional requirements.

I also helped to explain to the group potential data flow considerations between the mobile application and the hardware device. These considerations included:

1. whether or not the data flow from the mobile application to the hardware device should be a two-way or a one-way communication connection. The decision was to make this connection a two-way communication.
2. The next consideration was what kind of data should be communicated and from where.
   1. Regarding data that will be communicated from the mobile app to the hardware device: the mobile app will communicate command directives for the hardware device to follow, for example, sending a directive to activate an actuator and move it a certain amount which will in turn move one of the fingers. These directives will not be sent constantly, as the mobile application should only be a secondary aid for the hardware device. If no directives are being supplied, the hardware device should still be able to function as normally intended.
   2. Regarding data that will be communicated from the hardware device to the mobile app: the hardware device will report its state variables to the app for the purpose of displaying diagnostic and performance data visually to the user. These state variables may include current finger positions, current actuator voltage inputs, etc.

Lastly, I helped contribute to our decision process for which materials to order to start prototyping and building the hardware device, as well as taking a mold of our subjects hand to make a 3D model to work with.

**Anything holding me up on my last progress report's expected activities:**

There is nothing currently holding me up from accomplishing my expected activities from the last progress report.

**What I plan to do before the next progress report:**

Before the next progress report, all the members of our team have been tasked with familiarizing ourselves with a choice of 3D modeling software. Our immediate choices were Fusion 360, or Blender. We should all be familiar with this software so that we can all contribute to design and modeling decisions.

**Team Member #2:** Sam Dressler

**What I did since last progress report:**

Since the last report, I assisted in drafting the functional and non-functional requirements for the software subsystem portion of the project. This included defining what the requirements were, what part of the software they were related too (i.e. display, security, connection, etc), the success criteria, the dependencies too other subsystems or other requirements, and the verification method that would be used.

The verification methods for each requirement were elaborated on in a separate test plan. In the test plan, I gave a description of presumed steps and the expected behavior after each one. The test scenarios were designed to be system level tests where we could verify multiple requirements while using one test. This decision should eliminate some of the redundant steps that would occur when attempting to verify the actual result for each requirement. There were a few requirements that will need further discussion and discoveries to determine the correct test procedure.

Over the past two weeks I was not part of any further presentations in the EE 480 class due to personal obligations, however I was responsible for completing the related works summary that went into further detail on products that were similar to our project that were already available. This report was a valuable step for our team because we were able to see what had already been done and what is working well for other companies. We also found new areas that our team could capitalize on to differentiate our device.

**Anything holding me up on my last progress report's expected activities:**

As of now there is not anything currently holding up our groups progress. We are in the process of finalizing our groups material needs and will then need to wait for them to arrive.

**What I plan to do before the next progress report:**

For the next report, our group will begin discussing the best methods for prototyping the hand, as well as creating a 3D digital model that will be used to print the parts.

**Date: 11/8/20** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Team Progress (0 -- 3):** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*The* ***team advisor*** *needs to fill out a value 0 -- 3 and email the completed progress*

*report to Mr. Nordlie at john.nordlie@und.edu*

*0 -- no progress has been made by the team*

*1 -- insufficient progress has been made for the team to complete their capstone*

*2 -- sufficient progress has been made for the team to complete their capstone*

*3 -- excellent progress has been made by the team*

**Report Quality (0 -- 3):** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*This will be filled out by Mr. Nordlie after the report has been emailed.*

*0 -- missing or empty report*

*1 -- report briefly written with incomplete sentences, lacking descriptions of work*

*2 -- well written report with sufficient description of work performed since last*

*progress report*

*3 -- excellently written report with detailed description of each team members*

*progress*