Jeosffrey Cevallos

Engineering Notebook

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| Date | What Happened? |
| 10/2/2022 | Created the engineering notebook I will be logging work in.  Worked on the SRS document, finished about a third of the way. |
| 10/5/2022 | Completed the SRS document for the deliverable of the first sprint.  Currently working on the SDS document for the same deliverable of the first sprint. |
| 10/7/2022 | Completed the SRS and SDS documents for the deliverables of the first sprint.  Currently asking colleague to review over documents before turning in the documents. |
| 10/13/2022 | Today was a day of more pre-planning/working out requirements. The team today has decided to take the approach that we will continue to work and define our own product and hopefully we will have enough of a game plan to present to our product owner to see if they approve of the direction we are taking with the project.  We have also decided to work on the website in more of a direction of a web application versus being an app. While it may not exactly align with the vision of our customer, we hope to eventually push out a proof of concept that may eventually be integrated in a mobile environment. |
| 10/18/2022 | Another day of planning and documentation. After discussing what features of the website, we wanted, we came across the unanimous decision that the current framework that we have been working with wouldn’t suffice to the needs of the project.  Alternatively, we have investigated Django for its integration with Python and with a couple members of the group have a familiarity with SQLite, which is the database framework. |
| 10/25/2022 | Sprint-1 demo due today. It went well as we explained the situation that we were in over the last couple of weeks, but many members of the group still feel the stress of no requirements in the project. |
| 10/27/2022 | Another day of working on the SRS and SDS document. Really defining these documents is going to help us out in the coding phase of the project, especially with our lack of requirements. Unfortunately, it feels that we are a couple of weeks into our Software Project without any code being written. Many members of the team feel stagnated on their motivation since the project is becoming more stressful than initially perceived. |
| 11/1/2022 | Again, more work on the SDS and SRS documents. They are really becoming well fleshed out documents (in my opinion) and I feel that they are going to make the process of coding out the web application go much smoother.  By having the entire group work and contribute ideas to the SRS and SDS, we have more brains fleshing out requirements, documentation, charts, and solutions being written, and it has honestly been such a relief for someone who was the only person working on the SRS and SDS. |
| 11/3/2022 | SDS and SRS are due next week. The team is continuing to work on it, and as we approach a deadline, the documents continue to become more and more insightful into our thought processes and confidence in the project. |
| 11/8/2022 | With the SDS and SRS due today, final adjustments were made, and the documents were turned in.  A Django project was also started today. We had some trouble with initial startup, mainly due to operating systems or just funky pip installs with Python. Kyle seems to be the closest thing to an expert we have in Django, and he has been incredibly helpful in setting up the project and pushing to Git. |
| 11/10/2022 | A little more troubleshooting getting Django to start. Juliana and Jesse seemed to have a bit of struggle launching up the projects, but with some help from Jeremy and I, both now have the project and can start work.  Carly and Kyle spent a lot of time on their TC and FO login pages respectively. The project is looking to make a lot of development over the next couple of weeks. |
| 11/15/2022 | Much more work has been done on the website. Login and authentications seem to work now, in no small part thanks to Carly and Kyle.  I have helped develop with the task bar, as well as starting the TC settings screen. I imagine this first little part of coding to be a bit of a steep learning curve because of my unfamiliarity with working in front-end and not really doing many projects in HTML and CSS. |
| 11/17/2022 | Today was an off day for me since I had a project due for another class on Wednesday. My team was fine with me taking off today, but I fear that the pace they are going at will leave me in the dirt. |
| 11/22/2022 | Light work is done today on the website as people prepare for Thanksgiving.  I worked on the settings page a little bit more. |
| 11/29/2022 | Final SDS and SRS due soon, and we recently received feedback on the previous versions. It is looking like a large portion of the points taken off our grade was due to grammatical error or bad formatting. |
| 12/1/2022 | More work on the SDS and SRS. A meeting with Garfield is scheduled to review the design direction the team is taking on the project. It is now more important than ever to have a good SDS and SRS. The team is making good progress on updating and fixing the previous documents. This upcoming Tuesday will be the meeting with Garfield and much of the team is nervous about whether he’ll hate the project.  Personally, I’m going into this weekend with full confidence he’ll approve of our design philosophy. |
| 12/6/2022 | Garfield had a very positive reaction to our SDS and SRS and said he liked the direction that the group is taking the project. He mentioned that in a first glance of our documents, he saw a lot of grammatical and syntax errors, but he said that was nothing out of the ordinary with all the senior projects Garfield has worked with in the past.  Much of the team is excited that he has approved our SDS and SRS direction, and we are eagerly awaiting the markups he said he will be sending us. The group is hoping to receive those documents next week, in the hopes that we can work on the project during the winter break between Fall and Spring semester. |
| 12/8/2022 | Today would be the final day for sprint 3, so we had a presentation that, unfortunately, our product owner could not attend. I presented the introduction and overview slides for our Project. |
| 1/12/2023 | Today is the first day of senior design of the Spring semester, our scrum meeting was a short overview of the direction we want to take this next Sprint. It is also the first day where Jesse is going to be taking over as Scrum master and I’ll be switching over to subsystem design and programming. |
| 1/17/2023 | We have a meeting with the PO coming up soon, so everyone was advised to prepare for the meeting with design docs and not to work too much on the coding. |
| 1/19/2023 | Our PO provided a lot of useful information that helps with simplifying the project and providing a lot of directions of where we want to take the project. Unfortunately, this does mean that we have to redesign a lot of the subsystems and redefine what missions and classes are, but since we’ve got more clear guidelines we should get this done fairly quickly. |
| 1/24/2023 | New designs bring new roles to everyone on the team. I was reassigned from subsystem designs to the power subsystem design.  I’ll need to make a pre-processing calculator for setup of the sim, a charging calculator when the sim is utilizing its solar panels, and a power distribution system. I think I’m going to tackle each of those issues in that order, since that’s what I think it’ll be better to leave the more complicated sim stuff until later when other roles are more developed. |
| 1/26/2023 | Did a lot of research for realistic numbers for the power of the sim. There is a helpful NASA article about the power requirements of the ISS, including things like a percentage of power consumed while charging, maximum power draw of the ISS, and the capabilities of the ISS solar panels. |
| 1/31/2023 | Continued research to find more reasonable numbers for low-orbit satellites. |
| 2/2/2023 | Started work on the power requirements pre-processing calculator. Based on the research I’ve done, I can make a calculator that only takes max power draw of the subsystem as an argument. Started working on the calculator math on paper, then I’ll transfer it to code. |
| 2/7/2023 | Soon our first sprint will end, and we have to make our demo for this sprint. Spent today working on the presentation with the rest of the group. |
| 2/9/2023 | Watched demos from other groups and kept working on our demo. Because Jesse couldn’t be in class today, we were given some extra time to work on the presentation, but it is mostly done already. |
| 2/14/2023 | Presented our demo today, reception went well, and I got some feedback from Akbas regarding how complex I really should make the power subsystem for the sake of this project. |
| 2/16/2023 | Pre-processing calculator is finished and started work on the charging math. Jeremy apparently had a problem in his physics class involving solar panels, so he already had the math prepared for solar panel charging. His was only in two dimensions but by implementing a spherical coordinate system, we can use the polar and azimuth angles to easily turn the equation he gave me into a three dimensional expression. |
| 2/21/2023 | Started programming on the charging calculator. The charging is almost complete, but I had set up some test cases I wanted to work through first. |
| 2/23/2023 | Thankfully I did the test cases because I was able to find a lot of bugs in my code, but after a bit of revision the charging is finished. The power distribution system is going to be much more complicated than the past two calculators, so I need to re-draw my original plans for how it is going to work. Jesse asked if I can get it done before the weekend, but I may be pretty busy with work on Thursdays and Fridays, so it’s a definite maybe. |
| 2/28/2023 | Work on the EPS power distribution code has started. I’m working closely with Summer and Jeremy on how subsystems will report to the EPS to ask for power. |
| 3/2/2023 | Continued work for the EPS power distribution. EPS is almost done, just a little bit of bug testing needs to be done before I verify the EPS is finished. Added a way for the EPS to calculate what time zone it is in before calculating power generated in the event that the time zone it is in is not covered by the sun. |
| 3/7/2023 | End of sprint 2 for this final semester, presentation and feedback went well, but now we are having an issue with reference planes in the ACS regarding roll, pitch, and yaw in relation to the earth and the angle of incident between the simcraft and the sun. |