Assignment 3 – Self Assessment Essay – Morgan Best

I wouldn’t be a computer science major today if it weren’t for my parents forcing me to take a programming class in high school. A lot of my high school memories blend together, but I will never forget walking into my Intro to Programming classroom and getting a surprised look from a classroom full of boys. It was the first time in my life where I had walked into a room and felt so, so different. Most of the boys in the class had previously taken some type of programming class, and being that they were 16, they didn’t really have any interest in helping me catch up… so I fell behind pretty quickly. However, I was fortunate to have one of the best possible teachers for the class, a woman who I still consider a friend and mentor to this day. Every day after school I would come in to her classroom and she would work with me to help me understand the programming concepts that the others already knew. By the end of the semester, I loved programming. I ended up taking three more programming classes at my high school, which definitely helped me get ahead for when I pursued a degree in computer science. I am so grateful to my parents for forcing me to take that class, and to my teacher who pushed me to become a better student than I knew was possible… but so many kids don’t get this opportunity. Not only do grade schools and high schools not have the funding to have programming classes (especially in low-income areas), but even in my case, where they did have programming classes available, a lot of women and other minorities drop out pretty quick because it’s too intimidating to try to learn and catch up with the rest of the class. There have been several initiatives to help solve this problem, as the demand for tech jobs increase… the biggest one being Code.org. Code.org began celebrating Computer Science Education week, where teachers from all over the country are encouraged to spend just one hour out of their teaching day to do an “Hour of Code.” The idea, is that, if you can get a kid to program for just one hour, they will realize how easy it is to teach themselves, and will feel more motivated to pursue it even if there may not be programming opportunities at their school. I am extremely passionate about Code.org’s mission, especially since I didn’t have these kinds of opportunities available to me growing up. So, you can imagine my excitement when my best friend came up to me and said she was looking for a group of people to create an Hour of Code activity for a senior design project.

Each class I have taken towards my degree has helped prepare me for this project in some way, but two come to mind that really helped me prepare for this project appropriately. In Database Design (CS 4092) we learned about reverse engineering, and also database management. But the class that probably helped me the most was Software Engineering. My professor (he was a graduate student I believe) was really awesome and broke us into small teams where we took on different development approaches. We learned how to make many different types of diagrams, and also how to tie those in in our proposals. Overall that class was the first time I had tackled a project from start to finish, and learned the best approaches for what we were doing. This also was probably one of the best experiences for me to learn how to deal with team members, and what kinds of team members I work best with. Before this class, projects didn’t last an entire semester so there was wiggle room with who you worked with, but this is very rarely how teams work in the real world. My UI class that I took this semester (CS ) was especially important for me since almost all of my background has been in cloud computing, and more backend development. I learned how to make the UI easily understandable, and familiarized myself with React, which is what we will be using for this project.

While this may not be a co-op, I think my most valuable work experience during my college career was my experience as an after-school programming instructor with Junior Tech Academy (Tessa also was an instructor here) where we taught kids from ages 5-14 about different programming concepts. Teaching adults and teaching children are very different things, so familiarizing myself with this age range really prepared me to understand what a student in grade school or middle school might need from an Hour of Code Activity to stay engaged. When it comes to my actual co-op experience, I learned a lot about how to host web applications in the cloud, mostly in Amazon Web Services at Siemens PLM Software for my first two co-ops. During my third co-op I returned to Siemens PLM Software in Milford to learn about several different back-end services. Since the other three developers on our senior design team have focused mostly on front-end development, it worked well for me to have more experience on the back-end side. For my final two co-ops, I tied together my two co-ops by moving to the Siemens PLM Software Charlotte office, which is their cloud computing office. I was on the back-end team where I learned a lot about Apache Solr, Java, and extended my knowledge on Amazon Web Services. I was really blessed with an amazing work culture here, where I had mentors that challenged me and wouldn’t accept half-assed answers. My Scrum Master, Angelo, was brilliantly stubborn about implementing Agile and challenged his development teams to do the same. I feel like my understanding of how scrum needs to work in order to be successful is higher than the others in my class, and I definitely owe that to Angelo. This is something I’ve already gotten the opportunity to apply with our Senior Design group.

As I mentioned earlier, when I was introduced to programming as a 16-year-old, it was a high stress, intimidating, and horrible experience up front. If I didn’t have such an awesome teacher, and parents who pushed me to stick with it, I wouldn’t be where I am today, pursuing a career I love so much. And sadly, this is the reality not just for women, but especially with people of color (namely black and latinx coders), and it gets even worse when you are double or triple minority. I think people don’t truly understand why diversity is so important for the tech industry. While it’s extremely important to surround yourself with team members who are different from you to come up with more innovative solutions, the most important selling point is that we just aren’t graduating enough programmers in time to fill the jobs we need covered. I’m so sick of people saying “girls aren’t interested in programming” because that misses the point. Hour of Code proves just that. Leveling the playing field for kids early on, is one of the most important things we can do to close the gaps we have in diversity in the tech industry.

Because of my experience with teaching children in the same age range as the Hour of Code activity we are designing, I know that I am well equipped to help build a web application that would appeal to them. Tessa, Katey, Elisabeth, and I have participated in too many projects together to count, so I am not worried about distributing the work evenly. However, even if I was, we have created stories of an estimated equal work amount. I think deciding on if we did a “good job”, in our case, really depends on our audience. I would love to have some kids in our age range group come and try out our activity once it’s finished and let us see how they respond to it. Depending on their response, this will give us a good idea on what we need to do (if anything) to make our Hour of Activity the best it can be for us.