

Final Reflection on My 2018 Summer Enrichment Experience at Stanford Pre-Collegiate Summer Institutes

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This past summer, I attended the Stanford Pre-Collegiate Summer Institutes and participated in the “Introduction to Programming” class, where I learned about various concepts and rules of computer science.

The Classroom Experience

I arrived in Palo Alto to check in on Monday, June 25th, and classes began the very next day at 9:00 a.m. Classes lasted until 11:30 a.m., and then students headed to the dining hall for lunch. After lunch, we returned to class until 3:30 p.m. The teacher began the first week with “the bread and butter” of programming. He taught us about conditional statements (i.e., “if” and “else” statements, where, if something is true, then an action is executed). He also taught us about variables and arrays (i.e., how information is stored in different programming languages). Furthermore, we learned about loops (e.g., the “while” loop and the “for” loop). I had read up on some of these concepts previously, but the instructor really helped me to understand them fully.

Throughout the first week, we completed lab assignments, which included programs in JavaScript that were unfinished and nonfunctioning. Through these assignments, we learned the basic syntax of JavaScript. I then used the knowledge gained in class to figure out how to make a clock tick on time, a calculator of the prime factors of a number, and even a Pig-Latin translator. These labs were super satisfying to complete and are easily one of my favorite parts of the course.

During the second week of class, we learned about how to construct and design a web server. We used the MERN stack, which stands for: MongoDB, which is the database program; Express, which connects the database to JavaScript; ReactJS, which is the user interface; and Node.js, which is used for running JavaScript off the browser. We employed these programs and services to construct a simple social-media website, like Facebook. By the end of the week, we could register, login, post, and comment on the websites we built.

In the third and final week, we created our final projects. My project was building a web server using grade data. The web server displayed the data in helpful ways to students; for example, it showed the average grade for an assignment or the distribution of grades on an assignment. I was going to make it functional for the high school grade website, but that was beyond the scope of the project, and I used placeholder data instead. Creating a difficult program really helped me learn at a deeper level. It involved planning and design, and it required finding and fixing problems in my own code.

Beyond the Classroom

Classes were never easy, but Stanford made sure to allow plenty of time for us to relax. The activity coordinators planned a wide variety of things to do after class so that the whole cluster of dorms could engage in fun happenings, including soccer games, movies, and even improv! After the afternoon activities, one could walk to the main part of campus, where there were restaurants and the bookstore. I spent some of that free time hiking to Lake Lagunita, a scenic lake bed at the edge of campus.

On the first weekend, our dorm cluster went to the Exploratorium in San Francisco, which is a science museum filled with interactive exhibits. Some of the more memorable exhibits were the prisoner's dilemma with water fountains, a pitch-black room from which the goal was to navigate to the escape, and the tactile illusion of hot-and-cold coils. After the museum, we walked down to the Fisherman's Wharf and enjoyed the shops and the nice weather.

The weekend after that was when we visited a beach near Santa Cruz. The weather was great, but the ocean was freezing. So, most of the day was spent walking with my friends around the town of Capitola. That weekend was also the talent show, and I saw the cool things that my classmates and peers could do. There was singing and piano playing, but also some unique and interesting talents, like traditional Indian dance and singing a song using cups. One of my friends played his guitar in classical Spanish flamenco style.

Lessons Learned

Overall, my experience at Stanford was amazing. The time I spent at Stanford helped me to become far more proficient in programming than I would have ever imagined. The teacher and the class helped me in understanding how to use specific programming concepts and in comprehending how the concepts work. This knowledge and experience will help me develop into a proficient and capable programmer, a skill that is valuable for many different things I could do in the future.

Without the Garwin Family Foundation, I know that I would have never attended this program. The sponsorship gave me something to work toward. Thank you so much for providing me with an incredible experience and learning opportunity.