Second Year Computer Science Reflections

# Second Year Self-Reflection

Comparing ourselves from first to second year in the computer science program, I have gained a lot of knowledge that I wouldn’t have been able to comprehend in the first year.

Time management was indirectly one of the most important topics for us to learn during the 2nd year of this program. The third semester was the biggest challenge I faced when it comes to this. The bombardment of large assignments and labs forced us to change our priorities when it comes to the time allocation. Procrastination was not an option to pass the courses. The 4th semester came with its own challenges regarding time management as well. The team assignments required us to allocate time to meet as a team and create a plan of what to do by when. This taught us about giving assignments the right amount of extra time in case of error, which is bound to happen at some point.

In the HVK assignment that was a project that spanned both 2nd year semesters, I had to create and a prototype of the reservation system and present it to our clients, Jim and Sally, and the class. Watching other people present and taking the comments from Jim and Sally really helped us learn about communicating effectively with our clients in the workplace. I had to also deal with changes to the scope of the project and teammates from semester to semester. To prevent confusion as much as possible about the project, I had to speak to our new teammates effectively at their own pace which helped me develop awareness of others in a team environment.

In the hangman programming assignments, I had to practice our problem-solving skills by decoupling the logic of the code from the front-end and keep things in a modular way due to the fact that the very next assignment takes the logic and applies it in android with minimal changes.

So basically, I learned a lot about subjects that will be very helpful in the workplace.

# Second Year Learning Outcomes

I have learned many technical skills during the second year of computer science at Heritage College.

The first one is the ability to model and implement a database. As a team, we modeled, created and put to use a database that works with a kennel reservation system (Happy Valley Kennel). To model it, we used Oracle Data Modeler and later we recreated it using a script in SQL Server. To put it to use, we made a website for that reservation system built in .Net Core and C#. We had to adapt to changes that were done to the scope which forced us to implement more modular code.

The second one is the ability to use and secure PHP. I used it by creating a website in PHP that holds players that belong to a league to a file. I made it secure by learning about common website attacks and how to defend against them, specifically Cross Site Scripting, Cross Site Request Forgery, Click-Jacking and SQL Injection. I also used tools such as ZAP to decrease our chances of leaving a vulnerability. In contrast, in our previous assignments, I had to just do some simple input checking so the application doesn’t break. This taught us many ways to break and fix our systems.

The third one is the ability to use web concepts like cookies and sessions. On both the first and second assignments mentioned above, I had to use at least one of the two. I have used those two concepts, although it may have been hard at first, so much so that it has become second nature to us.

The last one is the ability to use popular web frameworks. As mentioned earlier, I used .Net Core and C# (with SQL Server for our database) to create a reservation system that is for a pet kennel. I have also used JavaScript with React.Js to display a movie list taken from the IMDB API.