**Reflection**

**B+ Tree**

**S. Cloud State University**

**Team 12**

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**Kushal Singh, vu4055bm**

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**All group members will write their own paragraph describing what they learned from this group assignments.**

* How much time did you spend on the program?
* Did you plan well before going to the computer?
* Did you test the program completely?
* Did you learn anything new about the language?
* Did you learn anything new about the way you study or should study?

**Adcock Hunter**

This project tested all of our ability to program, we have all been working really hard and we were making really good progress and thought we would get most of it done. I probably spent at least 20 hours programming. The planning we did before the program was not the greatest because we did not understand what was being ask of us at the start. Only about two days before the due date did we find out we had been implementing it wrong and had to rewrite the whole thing pretty much. Yah I learned a lot about the language, I came from Java and this was my biggest thing I have done in c++ so it was a big eye opener. Everyone makes c++ sound scary with memory and what not, but it really isn't that bad. As for the studying side there is a lot to learn from this like good proper implementation techniques.

**Kushal Singh**

This is one of the toughest projects I was given in my entire school year. From the time project was given, and until this point, I along with my teammates are working on it, and still trying to figure out the fully functioning program. From the beginning, we had many group meetings, where everyone equally participated in brainstorming and came up with the design, we wanted to build but turns out we have wrong understanding about the project. Anyways, After the design, everyone was assigned something to work on. After we were done with all the coding, we could able to for what program asked, we tested most of the scenarios we could think of. I was never introduced to the B+ tree before this course, so through this project I was able to figure out how B+ work. It turns out B+ tree is most important structure for storing data and heavily used in database management system. Also, I was able to learn that teamwork is most important factor for the success of group project, had the experience of professional level. Learnt how to use dioxygen which really helped understanding the document. Not the least, nothing could be done without the better communication. I am really happy to be part of this group.

**Sabin Basnet**

I learned a lot more about c++ during this project. B+ tree was overall new concept for me in the class that I learned and implemented in this project. This is one of the tough projects that I have done in this semester. From this project, I learned about the time management that helps me later on in my futures projects. It’s very important to plan ahead for large project like these, especially if working in teams. It can save us a lot of time later when working on the details. Working on this project helped me learn great teamwork and collaboration skills that will actually be helpful later on. This is the first time I worked on peer programming, and I thought it was a great way to work during group projects, rather than working on assigned tasks individually.

1. Here, Hunter is our group leader who worked on coding. Whenever he completed an assigned task, he reported it back to all of us in the group. Ashish and Kushal was pretty quick to go over it and return appropriate comments/suggestions, which gives the positive encouragement during this project to all members.
2. Saeid and I helped to test the code and fixed some grammatical errors in our reports.
3. Overall, Hunter has been great leader from the start, from stepping forward to be a leader, to initiating our first meetings right away after the group was formed. Also, I would like to thank everyone of our group members for their hard work and I am happy to be part of this group.

**Ashish Dahal**

The main objective of the project was to recall back C++ structure from CSCI 201 structure of a linked binary tree which our team had somewhat idea of. Through various team meetings and work division, a structure of menu driven binary structure that accepts input via keyboard and stores it with easy access, was brainstormed. Personally, working with teammates of a different origin and new different ways to solve a problem certainly helped a lot to develop my internal communication and cooperation skills. The part of the project that made sense more than others was the deoxygenation method used to distinguish each portion of the whole program in a more readable way, it was similar to the first project we completed together. The project as a whole seemed advance and tough with all those gui based introduction but with the help of our professor, a menu driven program was preferred and worked on which was fairly tough but not undoable. Overall, this project for me, provided an experience to perform in a group in computer science field of my career. And I would like to thank all my teammates for their hard especially Adock Hunter and Kushal singh for driving rest of the team forward.

**Saeid Najdi Hejazi**

I as well as my group spent lots of hours on this project, some parts were so frustrating, a few others not. We had almost good idea when we got to the coding, but there were lots of challenges during coding, which some were solved, and many others struggling with it. I think in total, I spent around 12 to 14 hours finding bugs and fixing them, and on the project draft which we submitted earlier.

B+ trees looks easy when in theory, but in coding it gets you stuck in some parts. We had just a little bit of documents and preparation before start coding, which made the coding not a lot easier. There were lots of confusions during coding about what must be done and how to implement them into code.

During and after we kind of got done with coding, we all tested the program to see which bugs it had and what had to be done to get it to work, especially after adding a functionality or something new to the code. Implementing the program was the most complicated part, which took lots of our time.

I learnt a lot about B+ tree, and hope to face it again in my career, since they’re one of the fundamental topics in software architecture. At the beginning, I only had studied the theories of B+ Tree, and how it works from the book, but never put it into actual code. Now I know a lot about it, and how to implement it, still maybe not completely, because it is a broad topic in software systems if you want to know it all. Working with memory in C++ is very challenging, because it does not accept anything you code because of how its architecture works. Documentation was another part of this project which I got to know how it should be.

In CS major, we really need to code, more than just studying and theories. I personally learn and understand materials while coding. The way I study I guess is fine, but I need to spend more time. Although in our major, if we do not do self-studying, it would be worthless, because there is not much of coding with variety of languages, but in general it is good to understand the basic of how computers work.