Project 10 Documentation

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When I first heard about templates I thought “wow this is really cool. I’ve been wondering if stuff like this exists ever since CS135, and now that we’re working on data structures it’s great that we can make data structures that are compatible with a variety of data types”. I thought this before I realized what a massive pain the the rear end they are (I’m not sure if cursing will lose me points so I am going to refrain for now). But yeah, templates suck and are a solid recipe for headaches and repetitive, messy code. One thing that really bothers me is that every single member function has to be defined as a template in the cpp file. I’m not sure if the inline keyword or something could make this less awful but otherwise I see myself using preprocessor definitions to circumnavigate this in the future.

Template pain aside, this code allowed me to improve a bit on my last projects. I added the functionality of a copy constructor and assignment operator to the node structure. Also the destructor was remade so I could be more sure that memory was being properly freed.

What really got me this project was the friend class and its relationship to templates. That took a while to understand and the fact that a forward declaration is required in order for the compiler to understand the relationship between the Node and NodeList class took me a long time to figure out. However, I did figure it out and I am now left with code I am rather proud of.