I utilized GDB to a much greater success than previous programming assignments. In particular, being able to use breakpoints was a huge help. This programming assignment used a large amount of recursion along with derivation. These coupled led me to become confused on occasion about where my code was executing and order in which it was being executed. Being able to step through the program and analyze what was being executed made locating and changing problems much easier.

This made my debugging a much more concerted effort and reduce the need for a large amount of print statements to find problems. Being able to identify not just the location but also the value of certain data enabled me to track the changes though the multiple layers of data structures. The importance of this was huge for this assignment due to it being about messaging applications. For them to work in any type functioning capacity, they need to be able to set data and store it flawlessly if nothing else. The use of GDB enabled me to accomplish to a much greater degree than doing so on my own.

Additionally, the use of Valgrind helped me tremendously in this assignment. Towards the end of my coding I was getting a consistent memory leak in my program. Using Valgrind enabled me to locate the memory leak in my RTTI function and realize the need to deallocate the pointer used to utilize this function.