COSC 364 – Assignment 1

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# Percentage of contribution of each partner

50% both ways.

# Which aspects of your program do you consider well done?

The main properties of the program I feel are very well done. This ranges from multi-threading operations which I think is well done since it was a rather challenging problem at first, but as soon as we got a handle of how threading interacts with other threads and objects the program really started to work well; Packet handling, the whole way that we deal with packing and unpacking data to and from byte streams is implemented well and is simple to use and understand; logical decisions within the routers classes, which I feel were very challenging at first but now looking at our functions, works quite well; All the docstrings and comments which allow for easy references and understanding.

# Which aspects of your program could be improved?

The converting between different class types, lists and dictionaries. At the moment there is a few non-straight forward or unlinked functions. The interaction between the packet classes and the router classes could do with a small change to allow for better accessing and interchanging of data. As an example take the packet class’s RipEntries field and the routers dictionaries; there was a need for conversion to interact between the two functions when they could just contain the same data types and be access interchangeably.

# How have you ensured atomicity of event processing?

We have portioned similar python functions into their own python files (modularising) to allow simplification of our program and for easy code access within the program. Being able to split the file into several smaller files makes it far easier for more than one person to edit a program.

# Testing we have performed as a group: *(few paragraphs)*

All throughout the creation of this program we have run a plentiful amount of testing. We originally started of trying to get the router to display to correct information fields and update/refresh the display with information. And after we implementing more functions we would test each one of them along the way, running multiple tests to check that the program was functioning the way we expected it to. There were several times where the testing of our program did not show us our expected results, although in these times we would just group together and discuss how to fix these issues and get the program functioning again. Originally when we were working on separate files we had to run separate tests to check if our own change worked before we merged it with the other person. Making sure the merge resulted in a functioning program and fixing the errors that occurred.

A brief summary of items we tested for consistency was:

Start up config (making sure the program unpacks the config properly), router startup & port bindings, packet formation, consistent timer calls, multithreading safety, dictionary/list contents, interaction between routers (sending and receiving), route finding, metrics, garbage collections, timeouts and much more. Each time we would try to run on several routers each with slightly different configs to allow for differing topologies.

# Source code