Writeup

Even though we had the option to hard code the routing table into the program, hard coding like that does not sit well with me and I try to make my programs as versatile as possible (it turned out to be more work than I expected). For some reason, I took a bottom up approach to this project, starting with creating the Binary class. This class only deals with an 8 bit binary string. I created all the necessary methods for this class then made BinaryIP, which simply took 4 of these Binary objects and put them together. NetworkIP was the next class, which is just an extension of BinaryIP that includes a header integer for how long the network header is. The longest part of this whole project was figuring out how to take in a routing table from a file. Through trial and error, I managed to ensure that everything I was taking in from the file was correct and that the data that was stored was also correct. Once that was done, I created the longestPrefixMatch method in the RoutingTable class which does all the prefix matching work that this entire project is about. The prefix matching method was honestly fairly easy and I just tested my output by using a lot of printline statements. Overall, my approach could have been better, but I am pleased with the result.

My program should work 100%