

18756

Project 4

Switch

Overview

In this project you are to design a switch and test input and output queueing methods. You have been provided some code that represents communication from input computers to output computers over a switch. Packets are currently sent from the source computers to the switch, and from the switch to the destination computers, however the code has not been completed to send the packets across the switch, this is your job. Many of the methods needed to complete the project are implemented; however you may use your own methods if you decide they are required.

Grading

This project's grading will be slightly different than the previous projects and will be heavily based on a report you produce. The code will be worth 20% of the project grade and the report will be worth 80%. We will not be testing your code against test vectors that we produce, however we will go through your code and check your implementation.

The report should be an analysis of how the input and output queue methods affect the switch. You should focus on throughput, delay, and any other metric which you deem appropriate.

Construct switches of different sizes (2x2, 4x4, 8x8, 16x16, 32x32, 64x64) and send packets across the switch. No more than one packet should be sent from any given computer at any time interval. Does the size of the switch affect the resulting statistics?

Other things to consider are how different distributions of packets being input from the computer affect the results.

This project is fairly open ended. Your report should demonstrate a thorough understanding of how input and output queueing methods in a switch affect a network.

Deliverables

In addition to your report, you should submit all the Java source files. Delete the .class files from the working folder. (In eclipse this is the bin folder which at the time of submitting needs to be empty). You should also submit the code for any test cases you run for which you use the data in your report.

Zip the working folder into a ZIP file only. Name the file as *andrweid_18756_project4.zip* and upload the zip file onto blackboard.

Hints

Examine the code that has been provided for you carefully. If you understand what has been provided to you, you should realize how much you need to do to finish the code.