City University of Hong Kong
Department of Electrical Engineering

EE3009 Data Communications and Networking

Assignment 1

Due Date: 25 September 2020

1. Round-robin (RR) scheduling was referred as fair queuing (FQ) by John Nagle in 1985 when proposing RR in the gateway between a local area network and the internet to reduce network disruption from badly-behaving hosts. Whereas round-robin cycles over the queues and gives one service opportunity per cycle, weighted round robin (WRR), also referred to as WFQ, offers to each queue a fixed number of opportunities, in proportion to the weight of each connection. Figure 1 shows a link serving three incoming connections.

   a. Suppose connections A, B, and C have the same packet size, and weights 0.5, 0.75, and 1.0. How many packets from each connection should a WRR server serve in each round?

   [3 marks]

   b. Suppose connections A, B, and C have mean packet size of 50, 500, and 1500 bytes, and weights 0.5, 0.75, and 1.0. How many packets from each connection should a WRR server serve in each round?

   [7 marks]

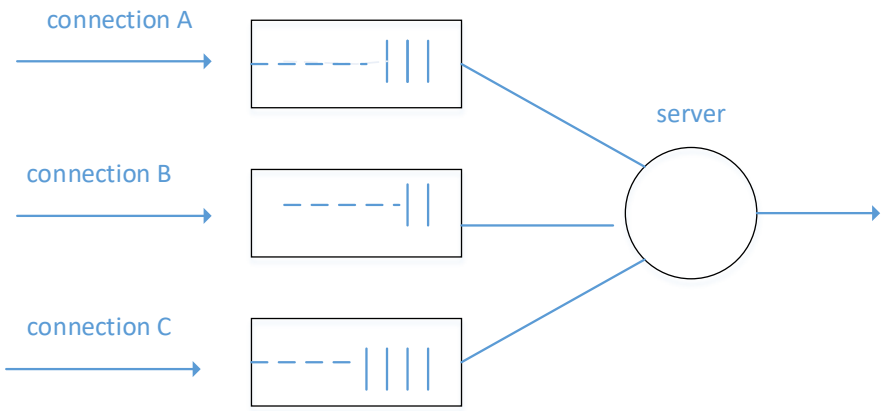

Figure 1.