**EECE.7290 Special Topics on SDN and Data Plane Programming**

**Lab6**

**Introduction:**

In the previous labs, we learned how to correctly setup and run DPDK application. But, we have not combined DPDK with a real problem. In this Lab6, we are going to integrate the streaming algorithm Count-Min sketch with DPDK to solve the heavy-hitter problem.

**Tasks:**

1. Read <http://web.stanford.edu/class/cs369g/files/lectures/lec7.pdf> to understand the algorithm of the Count-Min sketch. The original paper can be found at <http://dimacs.rutgers.edu/~graham/pubs/papers/cm-full.pdf>

2. Based upon the main.c of Lab2-RX, add the code which implements the Count-Min sketch into the main.c such that the new code can detect the heavy-hitter. In this Lab6, heavy-hitter is defined as the 5-tuple (src IP address, destination IP address, src port, destination port, and protocol) which has the most number of packets.

**Submissions:**

A single report which includes the following

1. Explain the Count-Min in your own words and how you implement it in the main.c.

2. Attach your modified main.c and indicate where the Count-Min is implemented.