CIS6930 Network Data Streaming

Project 3 Individual Project

Implementation of Flow-Size Sketches

1. Description

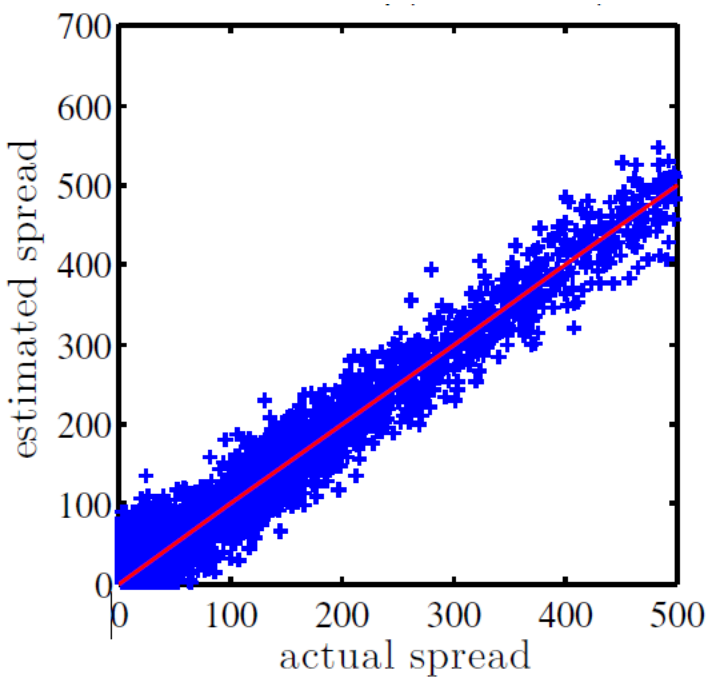
In this project, you will implement virtual bitmap.

Virtual Bitmap

Input: a given file, project4input.txt, where the first line is the number n of flows, which is followed by n lines, each for a flow, containing its flow id (source address) and the number of distinct elements in the flow --- for demo, n = 8,507, m = 500,000, l = 500

Function: record the elements of all flows in bitmap B of 500,000 bits; you may create elements as random numbers and you may record each element once or multiple times, which won't make a difference. After recording, estimate the spread of each flow and plot a figure, where x-axis is the true spread and y-axis is the estimated spread. Each flow is represented by a point in the figure, whose x-coordinate is the flow's actual spread and y-coordinate is the flow's estimated spread. Set the range of x-axis to [0, 500].

Output for submission: a pdf figure as described above. An example is given below.



2. Dates

Handout: 10/14/2020
Due in Canvas: 11/14/2020

3. Programming Environment

Programming language: Java, C, C++, C#, Python
Operating System: Windows, Mac OS or Linux
Programming Tool: Eclipse, IntelliJ, Jcreator, Kawa, Netbeans, … whatever you like.

To use Eclipse, please go through the following list:

1. Download JDK from: https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

2. Download Eclipse from: http://www.eclipse.org/downloads/

3. Here is a link for eclipse tutorial:
http://eclipsetutorial.sourceforge.net/totalbeginner.html

4. Here is a tutorial for socket programming in Java:
http://java.sun.com/docs/books/tutorial/networking/sockets/

4. Code Submission

You must submit the source code and one output file for each sketch with the demo input parameters given earlier. Name the output file after the sketch performed.

Include readme.txt to explain your files.

Submit the project through Canvas:

1) Go to https://elearning.ufl.edu/
2) Click “Login to e-Learning”
3) Login with your gator link username/password
4) Go in CIS6930 Network Data Streaming

5) Click “Assignments” and submit your project

This is an **individual** project. We will run an automatic tool to catch submissions with identical or similar code. There will be no late submissions.