

parse.pl

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# !/usr/bin/perl
use strict;
#Variable declarations
my $argc, $line;
my @field;
my $starttime, $stoptime;
my $nbytes;
my $packetthrpt, $bytethrpt;
my @packetdelay;
my $avgpktdelay, $totaldelay;
my $npkts;
my @stat;
my $counter;
my $timer;
my $value;
my $sum1, $sum2;
my $sum1_bytes, $sum2_bytes;
my $queue1;
my $queue2;
my $temp;
my $avgqueue1;
my $avgqueue2;
my $interval;
my $queue1_bytes;
my $queue2_bytes;
$argc = @ARGV;
if ($argc != 1) {
    print "perl project2_exp1.pl $ARGV[1]";
    exit -1;
}

open (INPUT, "<$ARGV[0]" ) or die ("Cannot open input file\n");

# Initialization of variables
$nbytes = 0;
$starttime = 0;
$stoptime = 0;
$packetthrpt = 0;
$bytethrpt = 0;
$counter=0;
$timer=0;
$queue1=0;
$queue2=0;
$value=0;
$sum1=0;
$avgqueue1=0;
$sum2=0;
$avgqueue2=0;
$interval=0;
$queue1_bytes=0;
$queue2_bytes=0;
$sum1_bytes=0;
$sum2_bytes=0;

# Scan input file
foreach $line (<INPUT>) {
    @field = split(" ", $line);
    if ((($field[0] eq '+' ) and ($field[11] == 0)) {
        $starttime = $field[1];
    }
    if ($field[1] > $stoptime) {
        $stoptime = $field[1];
    }
}
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if (($field[0] eq '+') and (($field[2] eq '1') or ($field[2] eq '0') or ($field[2]
eq '2') or ($field[2] eq '3')) {
    $stat[$field[11]] = 1;
    $pktdelay[$field[11]] = $field[1];
}
if (($field[0] eq 'r') and ($field[3] eq '6') and ($stat[$field[11]] == 1)) {
    $stat[$field[11]] = 2;
    $pktdelay[$field[11]] = $field[1] - $pktdelay[$field[11]];
    $nbytes += $field[5];
    $totaldelay += $pktdelay[$field[11]];
    $npkts += 1;
}
if($field[1] ne $timer)
{
#print "The queue size is $queue1 at $timer. \n";
#print "The queue size is $queue2 at $timer. \n";
$interval=$field[1]-$timer;
$sum1+=$interval*$queue1;
$sum2+=$interval*$queue2;
$sum1_bytes+=$interval*$queue1_bytes;
$sum2_bytes+=$interval*$queue2_bytes;
}
if(($field[0] eq '+') and ($field[2] eq '4'))
{ $queue1+=1;$queue1_bytes+=$field[5];}
if(($field[0] eq '-') and ($field[2] eq '4'))
{ $queue1-=1;$queue1_bytes-=$field[5];}
if(($field[0] eq '+') and ($field[2] eq '5'))
{ $queue2+=1;$queue2_bytes+=$field[5];}
if(($field[0] eq '-') and ($field[2] eq '5'))
{ $queue2-=1;$queue2_bytes-=$field[5];}
$timer=$field[1];
}

#Calculate the throughput and packet delay
$avgpktdelay = $totaldelay / $npkts;
$packetthrpt = $npkts / ($stoptime - $starttime);
$bytethrpt = $nbytes / ($stoptime - $starttime);
$avgqueue1=$sum1/20.0;
$avgqueue2=$sum2/20.0;
$sum1_bytes/=20;
$sum2_bytes/=20;

#print out the results
print "The average packet delay is $avgpktdelay sec. \n";
print "The throughput is $packetthrpt pkts/sec , $bytethrpt bytes/sec. \n";
print "The average queue size (AT R1) is $avgqueue1. \n";
print "The average queue size (AT R2) is $avgqueue2. \n";
print "The average queue size(at R1 in bytes) is $sum1_bytes. \n";
print "The average queue size(at R2 in bytes) is $sum2_bytes. \n";

```