System Programming Midterm Exam – Spring 2016

We ask you to design and implement two programs of whom lists of parameters are described as follow:

`IntegralGen - <resolution> -<max # of clients>` ,

`Client -<fi> -<fj> -<time interval> -<operation>` where,

- `max # of clients` : Max number of clients which can be connected to `IntegralGen`,
- `resolution` : unit timer step in terms of miliseconds,
- `fi` : the name of the first operand, a function name. The description of the function with C language format is in fi.txt,
- `fj` : the name of the second operand, a function name. The description of the function with C language format is in fj.txt,
- `i` and `j` : index number of functions, i, j ϵ [1,2,3,4,5,6],
- `time interval`: Upper limit of integral operation in terms of seconds ,
- `operation`: One of "+, -, *, /" arithmetical operations.

Program descriptions are given as,

- `Client` reads fi and fj from corresponding .txt files and sends fi and fj with `time interval` and the name of `operation` to `IntegralGen`.
- `IntegralGen` calculates $\int_{t_0}^{time\_interval} fi < operation > fj \, dt$, where t_0 is the time that a `client` become connected to the `IntegralGen`. `IntegralGen` sends the result to the `client`.
- `Client` and `IntegralGen` must die with CTRL-C signal and when `IntegralGen` dies al clients must die as well.
- `Client` maintains a log file of connection time, function name, result, reason of the kill signal (CTRL-C event or termination of `IntegralGen`).

Good Luck!