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# Bİl244 Sistem Programlama Vize Raporu

## IntegralGen.c

Bu program kendisine bağlanacak olan istemcilere, istemcilerinin istediği fonksiyonların verilen değer aralığında integralini hesaplayarak istemciye yollar.

Başlangıçta istemcileri beklemek için bir sunucu FIFO dosyası açar. İstemciler bu FIFO dosyasını açıp istenilen fonksiyonların dosya isimlerini ve indekslerini, integral için zaman aralığını, operatörü ve kendi Pid’sini (process id) yollar. Bu bilgileri alan sunucu önce fonksiyonları dosyalarında okur operatör işlemlini fonksiyonlara ekler, istemcinin Pid’si isimli bir FIFO dosyası açar ve fork işlemi uygular. Sunucuya ait oluşan child process bir döngü ile alınan fonksiyonlar üzerinde sayısal integral uygular ve sonucu istemciye FIFO üzerinden yollar. İntegral döngüsü zaman aralığı kadar dönecek şekilde test edilir.

Kullanılan parser “matheval” kütüphanesine aittir ve program compile edilmeden önce “sudo apt-get install libmatheval-dev” komutuyla yüklenmesi gerekmektedir.

Fork işlemi yaptıktan sonra parent döngüde başa dönerek tekrar sunucunun FIFO dosyasını okur ve istemci bekler. Argüman olarak alınan maksimum istemci sayısı aşılana kadar istemci kabul eder. Sınır geçilirse istemcilere dolu olduğu mesajını iletir.

Oluşturulan log dosyasında istemcilerin bağlanma ve ayrılma zamanları basılır.

Programı başlatmak için:

./integralGen <resolution> <maksimum istemci sayısı>

Örnek:

./integralGen 100 2

## Client.c

Bu program integralGen programına bağlanarak belirttiği fonksiyonların integrallerini belli aralıklarla hesaplanmasını ister. Sunucun FIFO dosyasına bağlanıp kendi argümanlarını ve Pid’sini yollar.

Sunucu açık değilse açılmasını bekler. Kendisine ait bir FIFO açılması ile sunucudan veriyi bu FIFO dosyasından bekler. İşlem sonuçlarını ve programın sonlanma nedenini log dosyasına basar.

Programı başlatmak için

./Client <1. Fonksiyon dosyası> <2. Fonksiyon dosyası> <zaman aralığı saniye> <operatör>

Örnek:

./Client f1 f2 10 +

## Örnek sunucu log dosyası içeriği:

Server is open.

client:3285 is connected at time: 3488

Server is open.

client:3285 is connected at time: 3488

client:3284 is connected at time: 3488

Server is open.

client:3285 is connected at time: 3488

client:3284 is connected at time: 3488

client:3283 is connected at time: 3493

client:3282 is connected at time: 3501

Server is open.

client:3285 is connected at time: 3488

client:3284 is connected at time: 3488

client:3283 is connected at time: 3493

client:3282 is connected at time: 3501

client:3286 is connected at time: 3501

Server is open.

client:3285 is connected at time: 3488

client:3284 is connected at time: 3488

client:3283 is connected at time: 3493

Server is open.

client:3285 is connected at time: 3488

client:3284 is connected at time: 3488

client:3283 is connected at time: 3493

client:3282 is connected at time: 3501

client:3286 is connected at time: 3501

client:3288 is terminated at time: 5505

client:3292 is terminated at time: 5507

client:3291 is terminated at time: 5508

client:3290 is terminated at time: 5508

client:3289 is terminated at time: 7507

client:3294 is connected at time: 13403

Server is open.

client:3285 is connected at time: 3488

client:3284 is connected at time: 3488

client:3283 is connected at time: 3493

client:3282 is connected at time: 3501

client:3286 is connected at time: 3501

client:3288 is terminated at time: 5505

client:3292 is terminated at time: 5507

client:3291 is terminated at time: 5508

client:3290 is terminated at time: 5508

client:3289 is terminated at time: 7507

client:3294 is connected at time: 13403

client:3293 is connected at time: 13403

client:3295 is connected at time: 13403

Server is open.

client:3285 is connected at time: 3488

client:3284 is connected at time: 3488

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client:3282 is connected at time: 3501

client:3286 is connected at time: 3501

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client:3290 is terminated at time: 5508

client:3289 is terminated at time: 7507

client:3294 is connected at time: 13403

client:3293 is connected at time: 13403

client:3295 is connected at time: 13403

client:3296 is connected at time: 13409