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GangaTutorialExercise

Running PrimeFactorizer application

Small example

In this example we create and submit a local job with PrimeFactorizer application. We use only one table in the PrimeTableDataset – so the first million prime numbers.

```
In [1]: j = Job()
In [2]: j.application = PrimeFactorizer(number=1925)
In [3]: j.inputdata = PrimeTableDataset(table_id_lower=1, table_id_upper=1)
In [4]: j.submit()
```

When the job is in completed state we can check if all the prime factors have been found.

```
In [5]: check_prime_job(j)
Looking for prime factors of 1925
job 0 : got factors: [(5, 2), (7, 1), (11, 1)]

All prime factors found: [(5, 2), (7, 1), (11, 1)]
```

Bigger example

Now we will factorize a much larger number, so we need a PrimeTableDataset which contains all 15 tables. We will also split the job into 5 local subjobs, which will run in concurrently.

```
In [1]: j = Job()
In [2]: j.application = PrimeFactorizer(number=118020903911855744138963610)
In [3]: j.inputdata = PrimeTableDataset()
In [4]: j.inputdata.table_id_lower = 1
In [5]: j.inputdata.table_id_upper = 15
In [6]: j.splitter = PrimeFactorizerSplitter(numsubjobs= 5)
In [7]: j.submit()
```

Now we do the same using LCG.

```
In [8]: j = j.copy()
In [9]: j.backend = LCG()
In [10]: j.submit()
```

And now using gLite.

```
In [11]: j = j.copy()
In [12]: j.backend = LCG(middleware='GLITE')
In [13]: j.submit()
```

We can use `check_prime_job()` function to see the outcome on selected jobs.

— Main.hclee – 09 May 2007