Experiment Log

We created a mock database with over 10 000 schools and over 3 000 000 students.

Each student had exam scores and general performance in school such as attendance, merit, distinctions, detentions and musical instruments.

VM Specification:

Windows Server 2012

Processor: Intel(R) Neon(R), 2.40 GHz

Installed memory (RAM): 3.50 GB

System type: 64-bit Operating System

Time to retrieve total number of schools

Query: `select COUNT(*) from schools.school;`

Duration: 0.015 seconds

Fetch: 0..000 seconds

Time to retrieve total number of students

Query: `select COUNT(*) from schools.students;`

Duration: 2.625 seconds

Fetch: 0.000 seconds

Time to retrieve GCSE grades of 1 student

Query: `select * from schools.gcse where student id = 3000000;`

Duration: 0.000 seconds

Fetch: 0.000 seconds

Time to retrieve all student IDs for one school of 1041 students

Query: `select sch.school_id, stu.student_id from schools.students stu, schools.school sch where sch.school_id = 436 and stu.school - sch.school_id;`

Duration: 0.000 seconds

Fetch: 0.000 seconds

Time to retrieve all student IDs for one school of 2594 students

Query: `select sch.school_id, stu.student_id from schools.students stu, schools.school sch where sch.school_id = 2000 and stu.school - sch.school_id;`

Duration: 0.000 seconds

Fetch: 0.000 seconds

Time to retrieve all GCSE grades for the year 2014

Query: `select * from schools.gcse g where g.year = 2014;`

Duration: 0.016 seconds

Fetch: 5.515 seconds

NB: On our database 387465 students took their GCSE in 2014 so query returned 387465 rows. The number of rows returned will differ from year-to-year.

Time to retrieve average number of A*s given out in 2014

Query: `select SUM(\`A*\`)/COUNT(*) from schools.gcse g where g.year = 2014;`

Duration: 5.547 seconds

Fetch: 0.000 seconds

Analysis:

From the tests conducted we believe that querying for individual students and querying for datasets on one particular school is fast. However when querying for general statistics on the entire database the data can take over 2 seconds to be retrieved.