

Summary:

	MySQL	Postgresql	SQLITE3	ORACLE	DB2
Experiment: Query executed 1 time. Table size: ~500K rows.					
BETWEEN 'X'AND 'Y'	~0.012	~0.002 - 0.007	0.22 - 0.36	~0.0018	~0.007
IN (X1, X2, X3, ...)	~0.003 - 0.01	~0.002 - 0.009	0.17 - 0.19	0.0014 - 0.002	~0.004
Experiment: Query executed 10000 times. Table size: ~100K rows.					
BETWEEN 'X'AND 'Y'	~27s	~14s	88 - 98s	11 - 14s	~72s
IN (X1, X2, X3, ...)	~25s	~15s	69 - 90s	11 - 14s	~45s
Experiment: Query executed 10000 times. Table size: ~500K rows.					
BETWEEN 'X'AND 'Y'	~28s	~14s	55 - 89s	11 - 22s	~72s
IN (X1, X2, X3, ...)	~26s	~13s	38 - 39s	~11s	~45s
Experiment: Large table. Query execution 1 time.					
BETWEEN 'X'AND 'Y'	24.530126094818s	0.50335192680359	0.011277914047241	0.009066104888916	0.024944067001343

BETWEEN X AND Y	23.644712924957				
IN (X1, X2, X3, ...)	0.54256916046143s	0.39899110794067	0.02019214630127		0.160964012146
IN (X1, X2) OR IN (X3, X4) OR IN (X5, X6)	0.78402304649353			0.077836990356445	

Each experiment was repeated multiple times. I have reported a time in seconds if difference in all attempts was insignificant. The range is specified where execution time differed significantly.

Table size and matching data set:

Large table:

- MySQL: Table has 1172600 records and 67206 distinct itemid values; Randomly selected 10K distinct itemids returned 603884 matching records.
- PostgreSQL: Table has 1517087 records and 69706 distinct itemid values; Randomly selected 10K distinct itemids returned 646013 matching records.
- SQLITE3: Table has 1646528 records and 72745 distinct itemid values; Randomly selected 10K distinct itemids returned 207341 matching records.
- ORACLE: Table has 796521 records and 9764 distinct itemid values; Randomly selected 9K distinct itemids returned 773379 matching records.
- DB2: Table has 661492 records and 15619 distinct itemid values; Randomly selected 10K distinct itemids returned 504698 matching records.

Table with ~100K rows:

- MySQL: Table has ~102K records. Query returns 2016 records.
- PostgreSQL: Table has ~102K records. Query returns 2304 records.
- SQLITE3: Table has ~99K records. Query returns 69691 records.
- ORACLE: Table has ~117K records. Query returns 35397 records.
- DB2: Table has ~100K records. Query returns 30075 records.

Table with ~500K rows:

- MySQL: Table has ~500K records and 2046 matching rows.
- PostgreSQL: Table has ~500K records. Query returns 2319 records.
- SQLITE3: Table has ~505K records. Query returns 353859 records.
- ORACLE: Table has ~503K records. Query returns 151615 records.
- DB2: Table has ~100K records. Query returns 30075 records.

Testing database info:

- MySQL:
 - innodb_version: 5.6.36-82.0
 - protocol_version: 10
 - version: 10.0.31-MariaDB-0ubuntu0.16.04.2
 - version_comment: Ubuntu 16.04
 - version_compile_machine: x86_64
 - version_compile_os: debian-linux-gnu
 - version_malloc_library: bundled jemalloc
- PostgreSQL:
 - PostgreSQL 9.6.2 on x86_64-pc-linux-gnu, compiled by gcc (Ubuntu 5.3.1-14ubuntu2) 5.3.1 20160413, 64-bit

- SQLITE3:
 SQLite version 3.11.0 2016-02-15 17:29:24
- ORACLE:
 Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production
 PL/SQL Release 11.2.0.2.0 - Production
 CORE 11.2.0.2.0 Production
 TNS for Linux: Version 11.2.0.2.0 - Production
 NLSRTL Version 11.2.0.2.0 - Production
- DB2:
 - DB2/LINUX8664 11.1.2.2

Other notes:

- MySQL, Postgresql and SQLITE DBMS was hosted on the same physical machine as the script that was used for measurements.
- Oracle and DB2 was hosted on different virtual machine than the script that was used for measurements.