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1 import java.sql.Connection;
2 import java.sql.DriverManager;
3 import java.sql.ResultSet;
4 import java.sql.SQLException;
5 import java.sql.Statement;
6 import java.sql.PreparedStatement;
7
8 // Notkun: java -cp .;sqlite-jdbc-....jar V11 <args>
9 //      þar sem <args> er: [autocommit|noautocommit] [index|noindex]
10 // Eftir: Búið er að mæla tíma fyrir gagnagrunnsaðgerðir og
11 //      skrifa niðurstöður
12 public class V11
13 {
14     public static void main( String[] args )
15         throws Exception
16     {
17         Class.forName("org.sqlite.JDBC");
18         boolean USE_AUTOCOMMIT = args[0].equals("autocommit");
19         boolean USE_INDEX = args[1].equals("index");
20         Connection conn = null;
21         try
22         {
23             conn = DriverManager.getConnection("jdbc:sqlite:v11.db");
24             conn.setAutoCommit(USE_AUTOCOMMIT);
25             Statement statement = conn.createStatement();
26             statement.execute("DROP TABLE IF EXISTS R");
27             statement.execute("DROP INDEX IF EXISTS RINDEX");
28             statement.execute("CREATE TABLE R(key INTEGER PRIMARY KEY, value
DOUBLE)");
29             if(USE_INDEX) {
30                 statement.execute("CREATE INDEX RINDEX ON R (value)");
31             }
32             PreparedStatement pstmt = conn.prepareStatement("INSERT INTO R VALUES
(?, ?)");
33             long start,end;
34             start = System.nanoTime();
35
36             int i;
37             for( i=0 ; i!=1000000 ; i++ )
38             {
39                 if((System.nanoTime()-start)>60000000000L) {
40                     break;
41                 }
42                 Double rand = Math.random();
43                 pstmt.setInt(1,i);
44                 pstmt.setDouble(2,rand);
45                 pstmt.executeUpdate();
46             }
47             if( !USE_AUTOCOMMIT ) conn.commit();
48             end = System.nanoTime();
49             System.out.println("Tími fyrir "+
50                               i+" innsetningar: "+
51                               (double) (end-start)/1e9
52                               );
53
54             System.out.println("Tími per innsetningu: "+
55                               (double) (end-start)/1e9/i
56                               );
57             start = System.nanoTime();

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58         ResultSet r =
59             statement.executeQuery
60                 ("SELECT COUNT(*) FROM R WHERE "+
61                     "value BETWEEN 0.01 AND 0.10"
62                 );
63         r.next();
64         end = System.nanoTime();
65         if (USE_INDEX) {
66             System.out.println("Nidurstada leitar med index: "+r.getInt(1));
67             System.out.println("Tími fyrir leit med index: "+
68                 (double) (end-start)/1e9
69                 );
70         }
71         else {
72             System.out.println("Nidurstada leitar an index: "+r.getInt(1));
73             System.out.println("Tími fyrir leit an index: "+
74                 (double) (end-start)/1e9
75                 );
76         }
77     }
78     catch (SQLException e)
79     {
80         System.err.println(e.getMessage());
81     }
82     finally
83     {
84         try
85         {
86             if (conn != null) conn.close();
87         }
88         catch (SQLException e)
89         {
90             System.err.println(e);
91         }
92     }
93 }
94 }

```

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C:\Users\addi\Desktop\Háskóli\onn 3\Gagnasafnsfraedi\Heimadaemi 11>javac V11.java

C:\Users\addi\Desktop\Háskóli\onn 3\Gagnasafnsfraedi\Heimadaemi 11>java -cp .;sqlite-jdbc-3.36.0.3.jar V11 noautocommit index
Tími fyrir 1000000 innsetningar: 15.2422198
Tími per innsetningu: 1.5242219800000001E-5
Nidurstada leitar med index: 90187
Tími fyrir leit med index: 0.0045361

C:\Users\addi\Desktop\Háskóli\onn 3\Gagnasafnsfraedi\Heimadaemi 11>java -cp .;sqlite-jdbc-3.36.0.3.jar V11 noautocommit noindex
Tími fyrir 1000000 innsetningar: 3.3179851
Tími per innsetningu: 3.3179851E-6
Nidurstada leitar an index: 90323
Tími fyrir leit an index: 0.0539219

C:\Users\addi\Desktop\Háskóli\onn 3\Gagnasafnsfraedi\Heimadaemi 11>java -cp .;sqlite-jdbc-3.36.0.3.jar V11 autocommit index
Tími fyrir 3706 innsetningar: 60.0055892
Tími per innsetningu: 0.01619147037236913
Nidurstada leitar med index: 358
Tími fyrir leit med index: 3.011E-4

C:\Users\addi\Desktop\Háskóli\onn 3\Gagnasafnsfraedi\Heimadaemi 11>java -cp .;sqlite-jdbc-3.36.0.3.jar V11 autocommit noindex
Tími fyrir 4205 innsetningar: 60.0011091
Tími per innsetningu: 0.01426899146254459
Nidurstada leitar an index: 427
Tími fyrir leit an index: 4.621E-4

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Tími fyrir innsetningu			
Án vísis		Með vísí	
Án AutoCommit	Með AutoCommit	Án AutoCommit	Með Autocommit
3.3179851E-6	0.01426899146254459	1.5242219800000001E-5	0.01619147037236913

Tími fyrir leit (Án AutoCommit)	
Án vísis	Með vísí
0.0539219	0.0045361