Advanced Databases & noSQL (INFDEV03-5)

Assignment 2

1) Registration queries

<table>
<tr><td>Optimized Query</td><td>select player0_.id as id1_2_, player0_.balance as balance2_2_, player0_.banned as banned3_2_, player0_.characterslots as characte4_2_, player0_.firstname as firstnam5_2_, player0_.iban as iban6_2_, player0_.lastname as lastname7_2_, player0_.lastpayment as lastpaym8_2_, player0_.monthspayed as monthspa9_2_, player0_.password as passwor10_2_, player0_.username as usernam11_2_ from Player player0_ where player0_.username=? and player0_.password=?</td></tr>
<tr><td>Index Statement</td><td>CREATE INDEX username_idx ON player USING btree (username ASC NULLS LAST);
CREATE INDEX password_idx ON player USING btree (password ASC NULLS LAST);</td></tr>
<tr><td>Execution Time (milliseconds)</td><td><table>
<tr><th>With IDX</th><th>Without IDX</th></tr>
<tr><td>0.92621</td><td>1.957337</td></tr>
<tr><td>0.89412</td><td>2.086554</td></tr>
<tr><td>0.97821</td><td>1.966242</td></tr>
<tr><td>1.01482</td><td>2.123916</td></tr>
<tr><td>0.92829</td><td>1.989527</td></tr>
<tr><td>0.95202</td><td>0.860797</td></tr>
<tr><td>0.79284</td><td>1.259129</td></tr>
<tr><td>0.92832</td><td>1.681724</td></tr>
<tr><td>1.04993</td><td>2.947238</td></tr>
<tr><td>0.89223</td><td>1.297283</td></tr>
<tr><td>0,935699</td><td>1.730895</td></tr>
</table></td></tr>
<tr><td>Motivation for the chosen index</td><td>Username and password in this database can not be change by the user, only inserted. When login or register the username (and password by login) should be selected. So it’s a good idea to set index on it. We are using Btree because it’s more reliable than hash.</td></tr>
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2) Character info query

<table>
<tr><td>Optimized Query</td><td>select character0_.id as id1_0_, character0_.charclass as charclas2_0_, character0_.level as level3_0_, character0_.name as name4_0_, character0_.player_id as player_i6_0_, character0_.race as race5_0_ from Character character0_ where character0_.name=?</td></tr>
<tr><td>Index Statement</td><td>CREATE INDEX name_idx ON character USING btree (name ASC NULLS LAST);</td></tr>
<tr><td>Execution Time (milliseconds)</td><td>
<table>
<tr><th>With IDX</th><th>Without IDX</th></tr>
<tr><td>1.40129</td><td>1.418912</td></tr>
<tr><td>0.99122</td><td>1.064195</td></tr>
<tr><td>1.12285</td><td>1.293847</td></tr>
<tr><td>1.29203</td><td>1.120273</td></tr>
<tr><td>0.94249</td><td>2.010292</td></tr>
<tr><td>1.23920</td><td>1.323423</td></tr>
<tr><td>0.89281</td><td>1.423902</td></tr>
<tr><td>1.49281</td><td>1.423292</td></tr>
<tr><td>1.02832</td><td>1.129392</td></tr>
<tr><td>1.01832</td><td>2.438943</td></tr>
<tr><td>1.142134</td><td>1.464647</td></tr>
</table>
</td></tr>
<tr><td>Motivation for the chosen index</td><td>Character name is the most important. Every time you create a character, the database will be queried to search for a character with this name. We are using Btree because it’s more reliable than hash.</td></tr>
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