## Advanced Databases & noSQL (INFDEV03-5)

## Assignment 2

**1) Registration queries**

|  |  |
| --- | --- |
| Optimized Query | 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=? |
| Index Statement | CREATE INDEX username\_idx ON player USING btree (username ASC NULLS LAST);  CREATE INDEX password\_idx ON player USING btree (password ASC NULLS LAST); |
| Execution Time (milliseconds) | |  |  | | --- | --- | | **With IDX** | **Without IDX** | | 0.92621 | 1.957337 | | 0.89412 | 2.086554 | | 0.97821 | 1.966242 | | 1.01482 | 2.123916 | | 0.92829 | 1.989527 | | 0.95202 | 0.860797 | | 0.79284 | 1.259129 | | 0.92832 | 1.681724 | | 1.04993 | 2.947238 | | 0.89223 | 1.297283 | | **0,935699** | **1.730895** | |
| Motivation for the chosen index | 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. |

**2) Character info query**

|  |  |
| --- | --- |
| Optimized Query | 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=? |
| Index Statement | CREATE INDEX name\_idx ON character USING btree (name ASC NULLS LAST); |
| Execution Time (milliseconds) | |  |  | | --- | --- | | **With IDX** | **Without IDX** | | 1.40129 | 1.418912 | | 0.99122 | 1.064195 | | 1.12285 | 1.293847 | | 1.29203 | 1.120273 | | 0.94249 | 2.010292 | | 1.23920 | 1.323423 | | 0.89281 | 1.423902 | | 1.49281 | 1.423292 | | 1.02832 | 1.129392 | | 1.01832 | 2.438943 | | **1.142134** | **1.464647** | |
| Motivation for the chosen index | 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. |