Lesson 7: NoSQL

Cassandra

1. Подключиться к Cassandra

```
$ ssh -i ~/.ssh/id_rsa_el_student_4652746 el_student_4652746@37.139.32.56 -D localhost:8080
$ /cassandra/bin/cqlsh
```

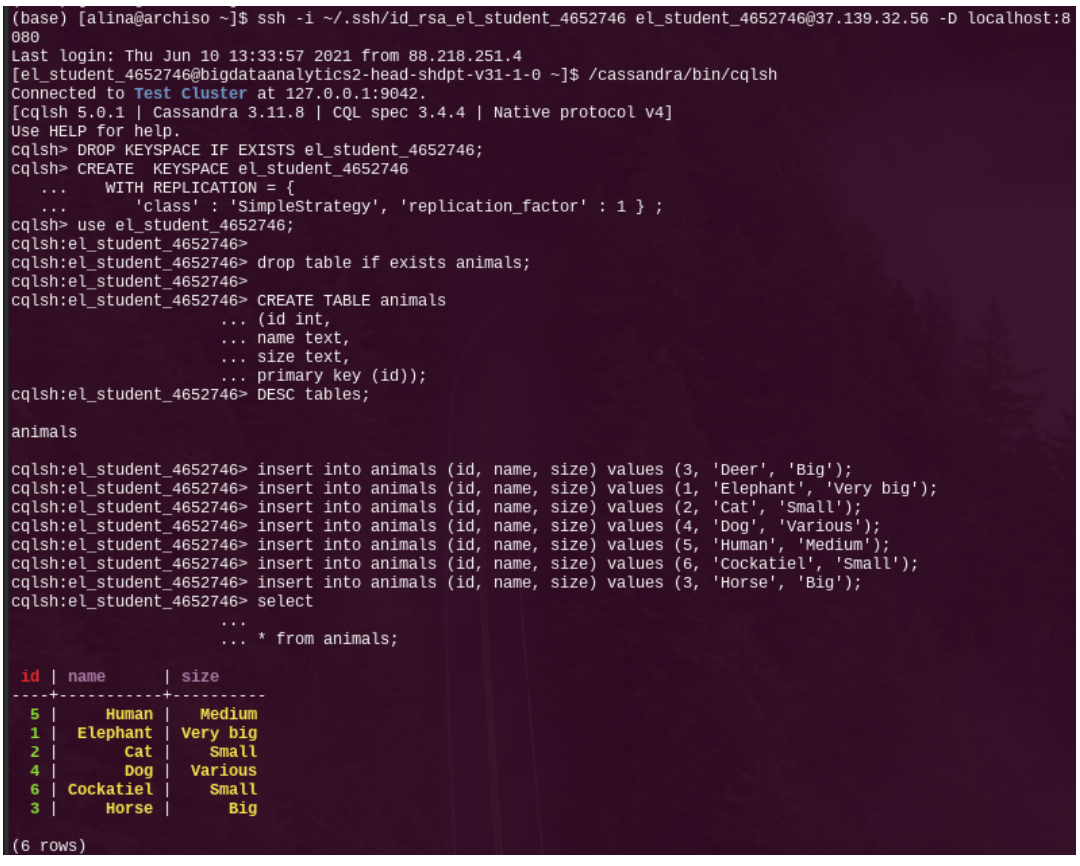
2. Создать таблицы

```
DROP KEYSPACE IF EXISTS el_student_4652746;
CREATE  KEYSPACE el_student_4652746
  WITH REPLICATION = {
    'class' : 'SimpleStrategy', 'replication_factor' : 1 } ;
use el_student_4652746;

drop table if exists animals;
CREATE TABLE animals
(id int,
name text,
size text,
primary key (id));
```

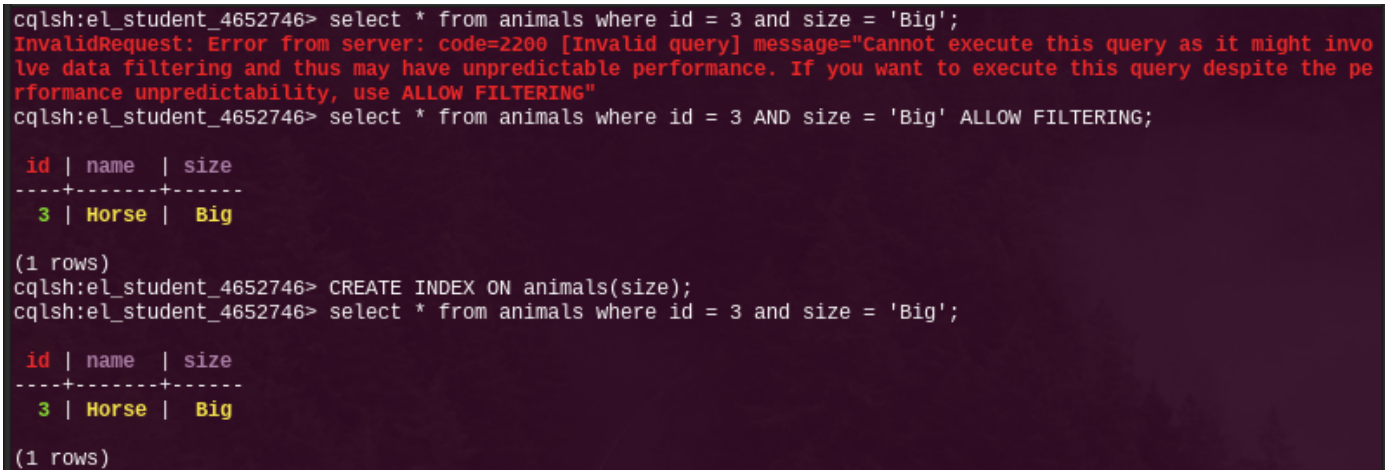
3. Вставить записи

```
insert into animals (id, name, size) values (3, 'Deer', 'Big');
insert into animals (id, name, size) values (1, 'Elephant', 'Very big');
insert into animals (id, name, size) values (2, 'Cat', 'Small');
insert into animals (id, name, size) values (4, 'Dog', 'Various');
insert into animals (id, name, size) values (5, 'Human', 'Medium');
insert into animals (id, name, size) values (6, 'Cockatiel', 'Small');
insert into animals (id, name, size) values (3, 'Horse', 'Big');
```



4. Изучить особенности работы where

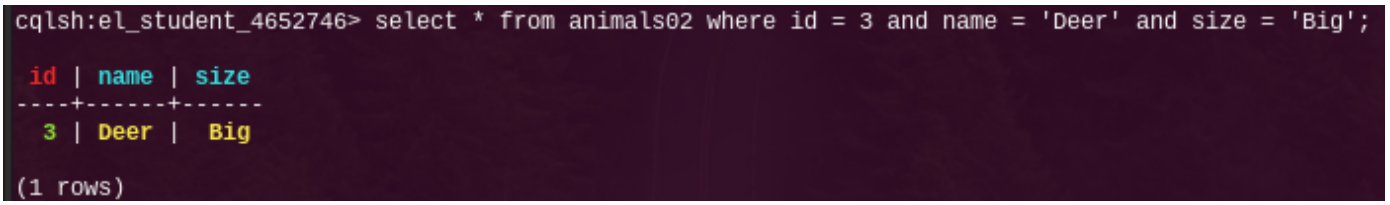
```
select * from animals where id = 3 and size = 'Big';
select * from animals where id = 3 AND size = 'Big' ALLOW FILTERING;
CREATE INDEX ON animals(size);
select * from animals where id = 3 and size = 'Big';
```




```
drop table if exists animals02;
CREATE TABLE animals02
(id int,
name text,
size text,
primary key (id, name, size));

insert into animals02 (id, name, size) values (3, 'Deer', 'Big');
insert into animals02 (id, name, size) values (1, 'Elephant', 'Very big');
insert into animals02 (id, name, size) values (2, 'Cat', 'Small');
insert into animals02 (id, name, size) values (4, 'Dog', 'Various');
insert into animals02 (id, name, size) values (5, 'Human', 'Medium');
insert into animals02 (id, name, size) values (6, 'Cockatiel', 'Small');
insert into animals02 (id, name, size) values (3, 'Horse', 'Big');

select * from animals02 where id = 3 and name = 'Deer' and size = 'Big';
```




```
-- удаление из таблицы, где primarykey(id, size)

delete from animals where id = 3 and name = 'Deer'; select * from animals;
delete from animals where id = 3; select * from animals;

-- удаление из таблицы, где каждый столбец первичный

delete from animals02 where id = 3 and name = 'Deer' and size = 'Big'; select * from animals02;
```

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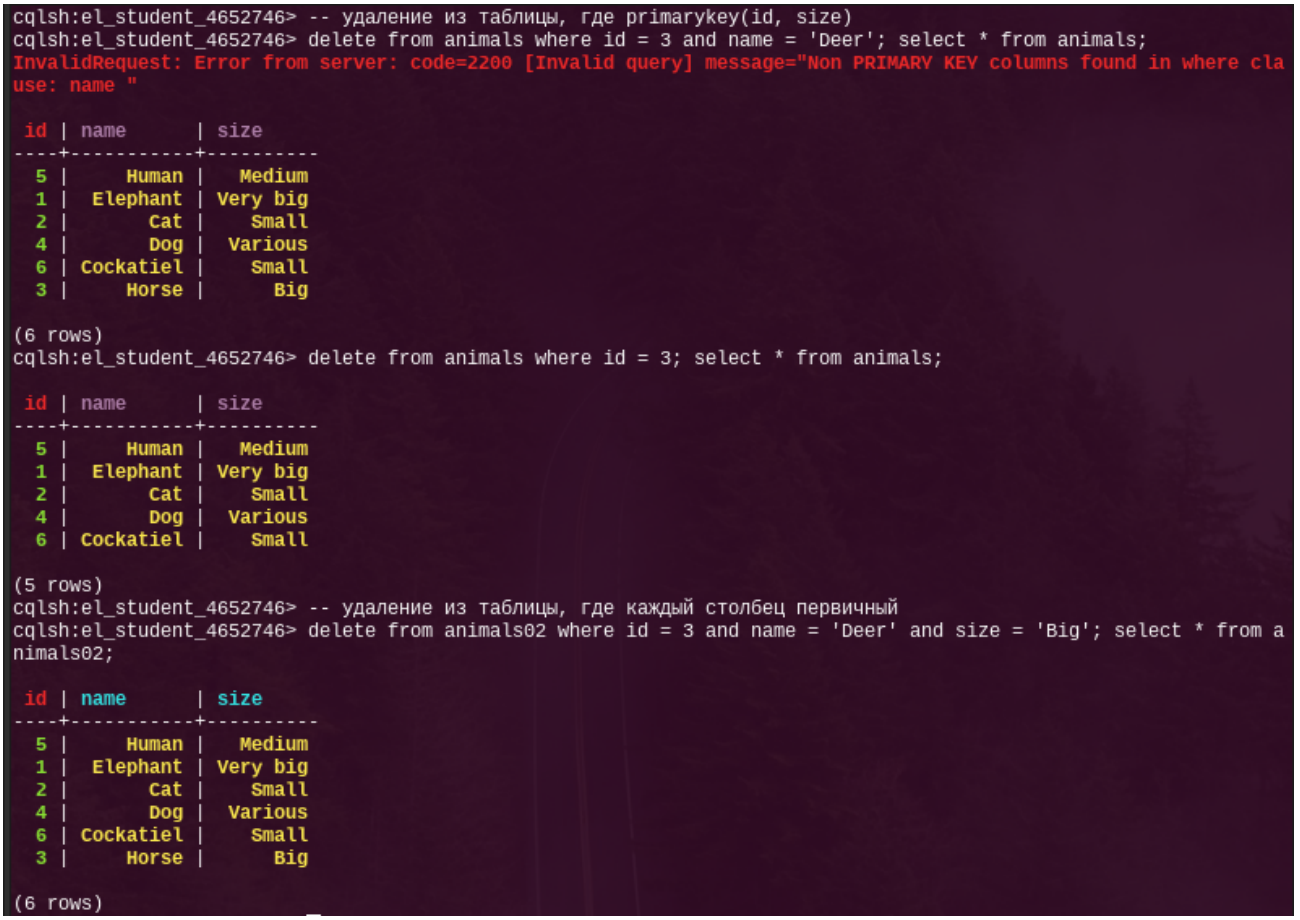

HBase

1. Подключиться к HBase

$ hbase shell

2. Создать таблицы

create_namespace 'el_student_4652746'

team = create 'el_student_4652746:team','personal', 'professional'

3. Вставляем значения:

team.put '1', 'personal:name', 'Ivan'

team.put '1', 'professional:key', 'somekey'

team.put '2', 'personal:name', 'Tihon'

team.put '2', 'professional:key', 'somekey'

team.put '2', 'professional:key', 'somekey'

скрин ниже ⇓

```
[el_student_4652746@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hbase shell
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/hdp/3.1.4.0-315/phoenix/phoenix-5.0.0.3.1.4.0-315-server.jar!/org/slf4j/i
mpl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/hdp/3.1.4.0-315/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/Stati
cLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
HBase Shell
Use "help" to get list of supported commands.
Use "exit" to quit this interactive shell.
For Reference, please visit: http://hbase.apache.org/2.0/book.html#shell
Version 2.0.2.3.1.4.0-315, r, Fri Aug 23 05:15:48 UTC 2019
Took 0.0018 seconds
hbase(main):001:0> create_namespace 'el_student_4652746'
Took 0.6542 seconds
hbase(main):002:0> team = create 'el_student_4652746:team','personal', 'professional'
Created table el_student_4652746:team
Took 0.7692 seconds
=> Hbase::Table - el_student_4652746:team
hbase(main):003:0> team.put '1', 'personal:name', 'Ivan'
Took 0.1725 seconds
hbase(main):004:0> team.put '1', 'professional:key', 'somekey'
Took 0.0045 seconds
hbase(main):005:0> team.put '2', 'personal:name', 'Tihon'
Took 0.0053 seconds
hbase(main):006:0> team.put '2', 'professional:key', 'somekey'
Took 0.0061 seconds
hbase(main):007:0> team.put '2', 'professional:key', 'somekey'
Took 0.0045 seconds
```

4. Изучить особенности хранения данных

```
alter 'el_student_4652746:team', {NAME => 'professional',VERSIONS => '3'}
team.put '2', 'professional:key', 'newkey'

scan 'el_student_4652746:team',{VERSIONS=>3}

team.get '2'
team.get '2', 'personal:name'
team.count
team.deleteall '1'
team.scan
team.disable
team.drop
drop_namespace'el_student_4652746'
```

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```
hbase(main):008:0> alter 'el_student_4652746:team', {NAME => 'professional',VERSIONS => '3'}
Updating all regions with the new schema...
1/1 regions updated.
Done.
Took 2.1544 seconds
hbase(main):009:0> team.put '2', 'professional:key', 'newkey'
Took 0.0043 seconds
hbase(main):010:0> scan 'el_student_4652746:team',{VERSIONS=>3}
ROW                           COLUMN+CELL
 1                            column=personal:name, timestamp=1623376079870, value=Ivan
 1                            column=professional:key, timestamp=1623376079905, value=somekey
 2                            column=personal:name, timestamp=1623376079940, value=Tihon
 2                            column=professional:key, timestamp=1623376086689, value=newkey
 2                            column=professional:key, timestamp=1623376080010, value=somekey
2 row(s)
Took 0.0358 seconds
hbase(main):011:0> team.get '2'
COLUMN                        CELL
 personal:name                timestamp=1623376079940, value=Tihon
 professional:key             timestamp=1623376086689, value=newkey
1 row(s)
Took 0.0116 seconds
hbase(main):012:0> team.get '2', 'personal:name'
COLUMN                        CELL
 personal:name                timestamp=1623376079940, value=Tihon
1 row(s)
Took 0.0088 seconds
hbase(main):013:0> team.count
2 row(s)
Took 0.0140 seconds
=> 2
hbase(main):014:0> team.deleteall '1'
Took 0.0185 seconds
hbase(main):015:0> team.scan
ROW                           COLUMN+CELL
 2                            column=personal:name, timestamp=1623376079940, value=Tihon
 2                            column=professional:key, timestamp=1623376086689, value=newkey
1 row(s)
Took 0.0056 seconds
hbase(main):016:0> team.disable
Took 0.7528 seconds
hbase(main):017:0> team.drop
Took 0.2391 seconds
hbase(main):018:0> drop_namespace'el_student_4652746'
Took 0.2453 seconds
hbase(main):019:0>
```