

Учреждение образования
БЕЛОРУССКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ
ИНФОРМАТИКИ И РАДИОЭЛЕКТРОНИКИ

Факультет компьютерного проектирования

Кафедра «Проектирования информационно-компьютерных систем»

ОТЧЕТ

по лабораторной работе №5

по дисциплине «Системы и методы управления базами данных»

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Задание 1:

1.

localhost:27017

5 DBS 6 COLLECTIONS

☆ FAVORITE

HOST
localhost:27017

CLUSTER
Standalone

EDITION
MongoDB 6.0.2 Community

My Queries

Databases

Filter your data

- admin
- config
- learn

unicorns

Documents
learn.unicorns

learn.unicorns

Documents Aggregations Schema Explain Plan Indexes V

FILTER { field: 'value' }

ADD DATA

VIEW

`_id: ObjectId('636ca9536bec3b57da9b16b5')`
`field1: "value1"`

`_id: ObjectId('636caebe9c38a70225e13d94')`
`name: "Aurora"`
`gender: "f"`
`weight: 450`

`_id: ObjectId('636cb4399c38a70225e13d95')`
`name: "Horny"`

```
> use learn
< 'already on db learn'
> db.unicorns.find()
< { _id: ObjectId("636ca9536bec3b57da9b16b5"), field1: 'value1' }
  { _id: ObjectId("636caebe9c38a70225e13d94"),
    name: 'Aurora',
    gender: 'f',
    weight: 450 }
```

2.

```
{ _id: ObjectId("636caebe9c38a70225e13d94"),
  name: 'Aurora',
  gender: 'f',
  weight: 450 }
> db.unicorns.insert((name: 'Horny', dob: new Date(1992,2,13,7,47), loves: ['carrot','papaya'], weight: 600, gender: 'm', vampires: 63));
db.unicorns.insert((name: 'Aurora', dob: new Date(1991, 0, 24, 13, 0), loves: ['carrot', 'grape'], weight: 450, gender: 'f', vampires: 43));
db.unicorns.insert((name: 'Unicrom', dob: new Date(1973, 1, 9, 22, 10), loves: ['energon', 'redbull'], weight: 984, gender: 'm', vampires: 182));
db.unicorns.insert((name: 'Roooooodles', dob: new Date(1979, 7, 18, 18, 44), loves: ['apple'], weight: 575, gender: 'm', vampires: 99));
db.unicorns.insert((name: 'Solnara', dob: new Date(1985, 6, 4, 2, 1), loves:['apple', 'carrot', 'chocolate'], weight:550, gender:'f', vampires:80));
db.unicorns.insert((name:'Ayna', dob: new Date(1998, 2, 7, 8, 30), loves: ['strawberry', 'lemon'], weight: 733, gender: 'f', vampires: 40));
db.unicorns.insert((name:'Kenny', dob: new Date(1997, 6, 1, 10, 42), loves: ['grape', 'lemon'], weight: 690, gender: 'm', vampires: 39));
db.unicorns.insert((name: 'Raleigh', dob: new Date(2005, 4, 3, 0, 57), loves: ['apple', 'sugar'], weight: 421, gender: 'm', vampires: 2));
< 'DeprecationWarning: Collection.insert() is deprecated. Use insertOne, insertMany, or bulkWrite.'
< { acknowledged: true,
    insertedIds: { '0': ObjectId("636cb4399c38a70225e13d9c") } }
> db.unicorns.insert((name: 'Leia', dob: new Date(2001, 9, 8, 14, 53), loves: ['apple', 'watermelon'], weight: 601, gender: 'f', vampires: 33));
db.unicorns.insert((name: 'Pilot', dob: new Date(1997, 2, 1, 5, 3), loves: ['apple', 'watermelon'], weight: 650, gender: 'm', vampires: 54));
db.unicorns.insert((name: 'Nimue', dob: new Date(1999, 11, 20, 16, 15), loves: ['grape', 'carrot'], weight: 540, gender: 'f'));
< { acknowledged: true,
    insertedIds: { '0': ObjectId("636cb4489c38a70225e13d9f") } }
```

```
> document={name: 'Dunx', dob: new Date(1976, 6, 18, 18, 18), loves: ['grape', 'watermelon'], weight: 704, gender: 'm', vampires: 165}
< {
  name: 'Dunx',
  dob: 1976-07-18T15:18:00.000Z,
  loves: [ 'grape', 'watermelon' ],
  weight: 704,
  gender: 'm',
  vampires: 165
}
> db.unicorns.insert(document)
< { acknowledged: true,
    insertedIds: { '0': ObjectId("636cb49f9c38a70225e13da0") } }
> db.unicorns.find()
< { _id: ObjectId("636ca9536bec3b57da9b16b5"), field1: 'value1' }
  { _id: ObjectId("636caebe9c38a70225e13d94"),
    name: 'Aurora',
    gender: 'f',
    weight: 450 }
  { _id: ObjectId("636cb4399c38a70225e13d95").
```

Задание 2:

1.

```
> db.unicorns.find({gender: "m"}).sort({name: 1}).skip(3)
< { _id: ObjectId("636cb4489c38a70225e13d9e"),
  name: 'Pilot',
  dob: 1997-03-01T03:03:00.000Z,
  loves: [ 'apple', 'watermelon' ],
  weight: 650,
  gender: 'm',
  vampires: 54 }
{ _id: ObjectId("636cb4399c38a70225e13d9c"),
  name: 'Raleigh',
  dob: 2005-05-02T21:57:00.000Z,
  loves: [ 'apple', 'sugar' ],
  weight: 421,
  gender: 'm',
  vampires: 2 }
{ _id: ObjectId("636cb4399c38a70225e13d98"),
  name: 'Roooooodles',
  dob: 1979-08-18T15:44:00.000Z,
  loves: [ 'apple' ],
  weight: 575,
  gender: 'm',
  vampires: 99 }
```

```
> db.unicorns.find({gender: "f"}).sort({name: 1}).limit(3)
< { _id: ObjectId("636cb4399c38a70225e13d96"),
  name: 'Aurora',
  dob: 1991-01-24T10:00:00.000Z,
  loves: [ 'carrot', 'grape' ],
  weight: 450,
  gender: 'f',
  vampires: 43 }
{ _id: ObjectId("636caebe9c38a70225e13d94"),
  name: 'Aurora',
  gender: 'f',
  weight: 450 }
{ _id: ObjectId("636cb4399c38a70225e13d9a"),
  name: 'Ayna',
  dob: 1998-03-07T06:30:00.000Z,
  loves: [ 'strawberry', 'lemon' ],
  weight: 733,
  gender: 'f',
  vampires: 40 }
```



```
> db.unicorns.find({gender: "f"}).sort({name: 1}).skip(3)
< { _id: ObjectId("636cb4489c38a70225e13d9d"),
  name: 'Leia',
  dob: 2001-10-08T11:53:00.000Z,
  loves: [ 'apple', 'watermelon' ],
  weight: 601,
  gender: 'f',
  vampires: 33 }
{ _id: ObjectId("636cb4489c38a70225e13d9f"),
  name: 'Nimue',
  dob: 1999-12-20T14:15:00.000Z,
  loves: [ 'grape', 'carrot' ],
  weight: 540,
  gender: 'f' }
{ _id: ObjectId("636cb4399c38a70225e13d99"),
  name: 'Solnara',
  dob: 1985-07-03T22:01:00.000Z,
  loves: [ 'apple', 'carrot', 'chocolate' ],
  weight: 550,
  gender: 'f',
  vampires: 80 }
```

```
> db.unicorns.find({gender: "m"}).sort({name: 1}).limit(3)
< { _id: ObjectId("636cb49f9c38a70225e13da0"),
  name: 'Dunx',
  dob: 1976-07-18T15:18:00.000Z,
  loves: [ 'grape', 'watermelon' ],
  weight: 704,
  gender: 'm',
  vampires: 165 }
{ _id: ObjectId("636cb4399c38a70225e13d95"),
  name: 'Horny',
  dob: 1992-03-13T05:47:00.000Z,
  loves: [ 'carrot', 'papaya' ],
  weight: 600,
  gender: 'm',
  vampires: 63 }
{ _id: ObjectId("636cb4399c38a70225e13d9b"),
  name: 'Kenny',
  dob: 1997-07-01T07:42:00.000Z,
  loves: [ 'grape', 'lemon' ],
  weight: 690,
  gender: 'm',
  vampires: 20 }
```

```
> db.unicorns.findOne({gender: "f", loves: "carrot"})
< { _id: ObjectId("636cb4399c38a70225e13d96"),
  name: 'Aurora',
  dob: 1991-01-24T10:00:00.000Z,
  loves: [ 'carrot', 'grape' ],
  weight: 450,
  gender: 'f',
  vampires: 43 }
```

```
> db.unicorns.find({gender: "f", loves: "carrot"}).limit(1)
< { _id: ObjectId("636cb4399c38a70225e13d96"),
  name: 'Aurora',
  dob: 1991-01-24T10:00:00.000Z,
  loves: [ 'carrot', 'grape' ],
  weight: 450,
  gender: 'f',
  vampires: 43 }
```

Задание 3:

```
> db.unicorns.find({gender: 'm'}, {gender:0, dob:0})
< { _id: ObjectId("636cb4399c38a70225e13d95"),
  name: 'Horny',
  loves: [ 'carrot', 'papaya' ],
  weight: 600,
  vampires: 63 }
{ _id: ObjectId("636cb4399c38a70225e13d97"),
  name: 'Unicrom',
  loves: [ 'energon', 'redbull' ],
  weight: 984,
  vampires: 182 }
{ _id: ObjectId("636cb4399c38a70225e13d98"),
  name: 'Roooooodles',
  loves: [ 'apple' ],
  weight: 575,
```

Задание 4:

```

> db.unicorns.find().sort({ $natural: -1 })
< { _id: ObjectId("636cb49f9c38a70225e13da0"),
  name: 'Dunx',
  dob: 1976-07-18T15:18:00.000Z,
  loves: [ 'grape', 'watermelon' ],
  weight: 704,
  gender: 'm',
  vampires: 165 }
{ _id: ObjectId("636cb4489c38a70225e13d9f"),
  name: 'Nimue',
  dob: 1999-12-20T14:15:00.000Z,
  loves: [ 'grape', 'carrot' ],
  weight: 540,
  gender: 'f' }
{ _id: ObjectId("636cb4489c38a70225e13d9e"),
  name: 'Pilot',
  dob: 1997-03-01T03:03:00.000Z,
  loves: [ 'apple', 'watermelon' ],
  weight: 650,

```

Задание 5.1:

```

> db.unicorns.find({weight: {$gt: 500, $lt: 700}}, {gender: "f"}, {gender:0})
< { _id: ObjectId("636cb4399c38a70225e13d95"), gender: 'f' }
{ _id: ObjectId("636cb4399c38a70225e13d98"), gender: 'f' }
{ _id: ObjectId("636cb4399c38a70225e13d99"), gender: 'f' }
{ _id: ObjectId("636cb4399c38a70225e13d9b"), gender: 'f' }
{ _id: ObjectId("636cb4489c38a70225e13d9d"), gender: 'f' }
{ _id: ObjectId("636cb4489c38a70225e13d9e"), gender: 'f' }
{ _id: ObjectId("636cb4489c38a70225e13d9f"), gender: 'f' }

```

Задание 6:

```
> db.unicorns.find({weight: {$gt: 500}}, {loves: ["grape","lemon"]}, {_id:0})
< { _id: ObjectId("636cb4399c38a70225e13d95"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb4399c38a70225e13d97"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb4399c38a70225e13d98"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb4399c38a70225e13d99"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb4399c38a70225e13d9a"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb4399c38a70225e13d9b"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb4489c38a70225e13d9d"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb4489c38a70225e13d9e"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb4489c38a70225e13d9f"),
  loves: [ 'grape', 'lemon' ] }
{ _id: ObjectId("636cb49f9c38a70225e13da0"),
  loves: [ 'grape', 'lemon' ] }
```

```
> db.unicorns.find({vampires: {$exists:false}})
< { _id: ObjectId("636ca9536bec3b57da9b16b5"), field1: 'value1' }
{ _id: ObjectId("636caebe9c38a70225e13d94"),
  name: 'Aurora',
  gender: 'f',
  weight: 450 }
{ _id: ObjectId("636cb4489c38a70225e13d9f"),
  name: 'Nimue',
  dob: 1999-12-20T14:15:00.000Z,
  loves: [ 'grape', 'carrot' ],
  weight: 540,
  gender: 'f' }
```

Задание 7: