MONGODB
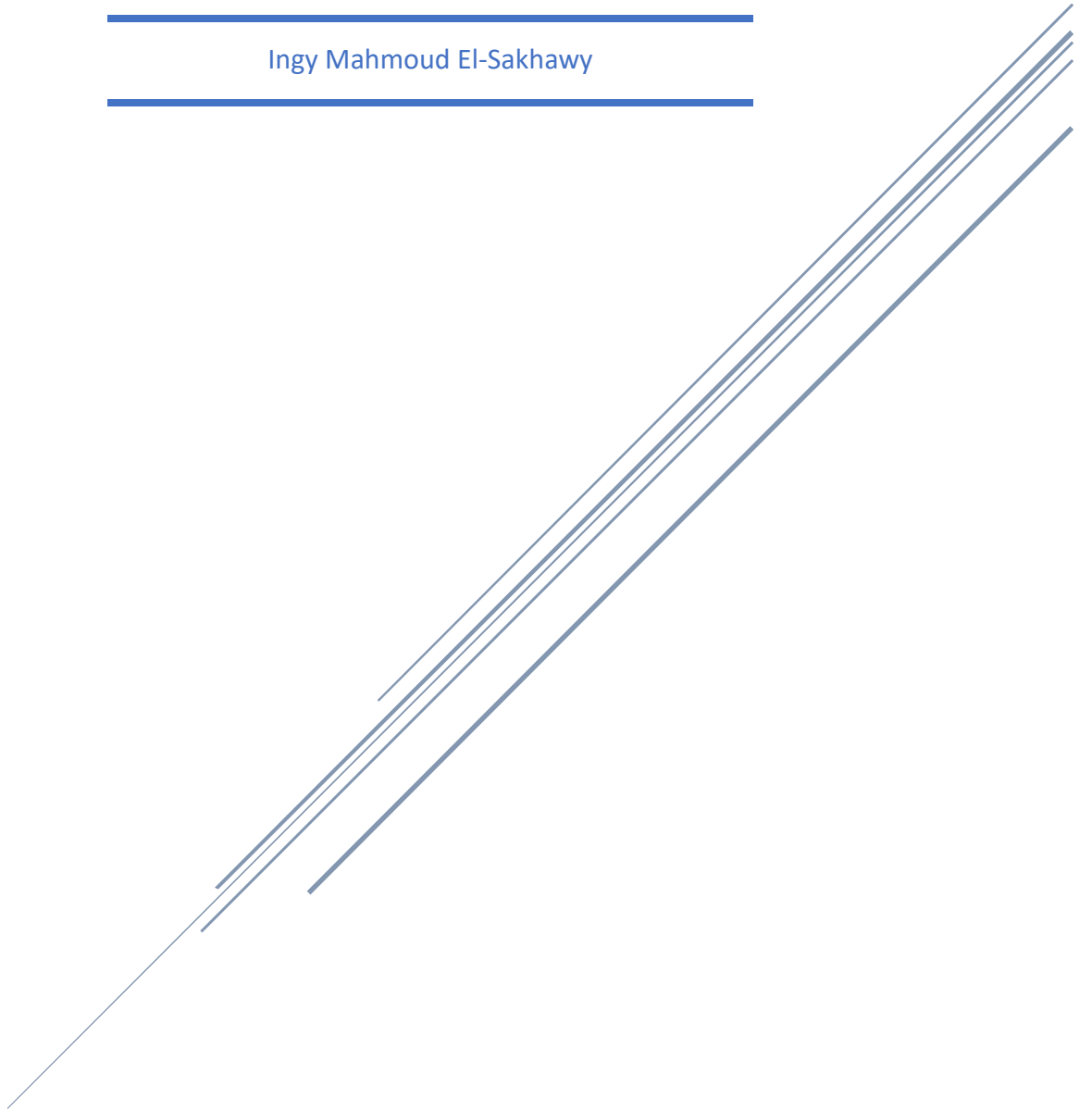
Lab2

Ingy Mahmoud El-Sakhawy

run following queries on instructors collection:

   a. Display all documents in instructors collection

db.Instructors.find({});

_id	firstName	lastName	gender	age	salary	address	courses
id 6043d23c63d9	Ingy	Elsakhawy	F				
6	noha	hesham		21	3500	{ 3 fields }	[4 elements]
7	mona	ahmed		21	3600	{ 3 fields }	[4 elements]
8	mazen	mohammed		21	7040	{ 3 fields }	[3 elements]
9	ebtesam	hesham		21	7500	{ 3 fields }	[5 elements]

   b. Display all instructors with salaries greater than 4000 (only show firstName and salary)

db.Instructors.find({salary:{ $gt: 4000 }},{firstName:1,salary:1});

_id	firstName	salary
8	mazen	7040
9	ebtesam	7500

   c. Display all instructors with ages less than or equal 25.

db.Instructors.find({age:{$lte:25}},{});

_id	firstName	lastName	age	salary	address	courses
6	noha	hesham	21	3500	{ 3 fields }	[4 elements]
7	mona	ahmed	21	3600	{ 3 fields }	[4 elements]
8	mazen	mohammed	21	7040	{ 3 fields }	[3 elements]
9	ebtesam	hesham	21	7500	{ 3 fields }	[5 elements]

   d. Display all instructors with city mansoura and sreet number 10 or 14 only display (firstname,address,salary).

db.Instructors.find({"address.city":"mansoura","address.street":{$in:[10,14] }},{});

_id	firstName	lastName	age	salary	address	courses
9	ebtesam	hesham	21	7500	{ 3 fields }	[5 elements]

   e. Display all instructors who have js and jquery in their courses (both of them not one of them).

db.Instructors.find({courses: { $all : ["js", "jquery"] }}, {});

   f. Display number of courses for each instructor and display first name with number of courses.

```
db.instructors.find().forEach(instructor => {
    const numCourses = instructor.courses.length;
    print(`${instructor.firstName} ${numCourses}`);
});
```

```
236  Ingy 0
237  noha 4
238  mona 4
239  mazen 3
240  ebtesam 5
```

g- Write mongodb query to get all instructors that have firstName and lastName properties , sort them by firstName ascending then by lastName descending and finally display their data FullName and age
Note: use mongoDb sort method not javascript array method

```
db.instructors.find({ firstName: { $exists: true, $ne: null }, lastName: { $exists: true, $ne: null } }).sort({ firstName: 1, lastName: -1 }).forEach(instructor => {

  const fullName = `${instructor.firstName} ${instructor.lastName}`;

  const age = instructor.age;

  print(`FullName: ${fullName}, Age: ${age}`);

});
```

h. Find all instructors that have fullName that contains "mohammed".

```
db.Instructors.find({$or:[{firstName:"mohammed"}, {lastName:"mohammed"}]});
```

_id	firstName	lastName	age	salary	address	courses
8	mazen	mohammed	21	7040	{ 3 fields }	[3 elements]

i. Delete instructor with first name "ebtesam" and has only 5 courses in courses array

```
db.Instructors.remove({firstName:"ebtesam", courses:{$size:5}});
```

j. Add active property to all instructors and set its value to true.

```
db.instructors.updateMany({}, { $set: { active: true } });
```

k. Change "EF" course to "jquery" for "mazen mohammed" instructor (without knowing EF Index)

```
db.instructors.updateOne({ firstName: "mazen", lastName: "mohammed", courses: "EF" },{ $set: { "courses.$": "jquery" } });
```

l. Add jquery course for "noha hesham".

```
db.instructors.updateOne({ firstName: "noha", lastName: "hesham" },{ $addToSet: { courses: "jquery" } });
```

m. Remove courses property for "ahmed mohammed " instructor

```
db.instructors.updateOne({ firstName: "ahmed", lastName: "mohammed" },{ $unset: { courses: "" } });
```

n. Decrease salary by 500 for all instructors that has only 3 courses in their list ($inc)

db.instructors.updateMany({ courses: { $size: 3 } },{ $inc: { salary: -500 } });

o. Rename address field for all instructors to fullAddress.

db.instructors.updateMany({}, { $rename: { address: "fullAddress" } });

p. Change street number for noha hesham to 20

db.instructors.updateOne({ firstName: "noha", lastName: "hesham" },{ $set: { "fullAddress.street": 30 }});