Examen TP

4/

```
> db.laptops.insertOne({"_id":30,"nom":"Macbook Pro","fabriquant":"Apple","prix":6500,"options":["Intel Core i5","Retina Display","Long life b
< {
    acknowledged: true,
    insertedId: 30
  }
```

5/

```
> db.laptops.insertMany([
    {
      "_id": 31,
      "nom": "Macbook Air",
      "fabriquant": "Apple",
      "prix": 4500,
      "ultrabook": true,
      "options": ["Intel Core i7", "SSD", "Long life battery"]
    },
    {
      "_id": 33,
      "nom": "Thinkpad X230",
      "fabriquant": "lenovo",
      "prix": 2500,
      "ultrabook": true,
      "options": ["Intel Core i5", "SSD", "Long life battery"]
    }
  ]);
< {
    acknowledged: true,
    insertedIds: {
      '0': 31,
      '1': 33
    }
  }
```

6/

```
> db.laptops.find()
< {
    _id: ObjectId('675162b2f9f75d24eda5923d'),
    id: 1,
    nom: 'Laptop 1',
    fabriquant: 'Lenovo',
    prix: 1600,
    ultrabook: false,
    options: [
      'Intel Core i5',
      'Standard Display',
      'HDD',
      'Long life battery'
    ]
  }
  {
    _id: ObjectId('675162b2f9f75d24eda5923e'),
    id: 2,
    nom: 'Laptop 2',
    fabriquant: 'Apple',
    prix: 1200,
    ultrabook: true,
    options: [
      'Intel Core i7',
      'Retina Display',
      'HDD',
      'Long life battery'
    ]
```

7/

```
> db.laptops.findOne()
< {
    _id: ObjectId('675162b2f9f75d24eda5923d'),
    id: 1,
    nom: 'Laptop 1',
    fabriquant: 'Lenovo',
    prix: 1600,
    ultrabook: false,
    options: [
      'Intel Core i5',
      'Standard Display',
      'HDD',
      'Long life battery'
    ]
  }
```

8/

```
> db.laptops.findOne({ nom: "Laptop 10" }, { _id: 1 });
< {
    _id: ObjectId('675162b2f9f75d24eda59246')
  }
```

9/

```
> db.laptops.find({ prix: { $gte: 2000 } });
< {
    _id: ObjectId('675162b2f9f75d24eda59240'),
    id: 4,
    nom: 'Laptop 4',
    fabriquant: 'Apple',
    prix: 2100,
    ultrabook: true,
    options: [
      'Intel Core i7',
      'Retina Display',
      'HDD',
      'Long life battery'
    ]
  }
  {
    _id: ObjectId('675162b2f9f75d24eda59242'),
    id: 6,
    nom: 'Laptop 6',
    fabriquant: 'Apple',
    prix: 3000,
    ultrabook: true,
    options: [
      'Intel Core i7',
      'Retina Display',
      'SSD',
      'Long life battery'
    ]
  }
```

10/

```
> db.laptops.find({ ultrabook: true }).limit(3);
< {
    _id: ObjectId('675162b2f9f75d24eda5923e'),
    id: 2,
    nom: 'Laptop 2',
    fabriquant: 'Apple',
    prix: 1200,
    ultrabook: true,
    options: [
      'Intel Core i7',
      'Retina Display',
      'HDD',
      'Long life battery'
    ]
  }
  {
    _id: ObjectId('675162b2f9f75d24eda59240'),
    id: 4,
    nom: 'Laptop 4',
    fabriquant: 'Apple',
    prix: 2100,
    ultrabook: true,
    options: [
      'Intel Core i7',
      'Retina Display',
      'HDD',
      'Long life battery'
    ]
  }
```

11/

```
> db.laptops.find().sort({ prix: 1 });
< {
    _id: ObjectId('675162b2f9f75d24eda5923e'),
    id: 2,
    nom: 'Laptop 2',
    fabriquant: 'Apple',
    prix: 1200,
    ultrabook: true,
    options: [
      'Intel Core i7',
      'Retina Display',
      'HDD',
      'Long life battery'
    ]
  }
  {
    _id: ObjectId('675162b2f9f75d24eda5923f'),
    id: 3,
    nom: 'Laptop 3',
    fabriquant: 'Lenovo',
    prix: 1500,
    ultrabook: false,
    options: [
      'Intel Core i5',
      'Standard Display',
      'SSD',
      'Long life battery'
    ]
  }
```

12/

13/

```
> db.laptops.find({ nom: { $regex: /^laptop/, $options: 'i' } });
< {
    _id: ObjectId('675162b2f9f75d24eda5923d'),
    id: 1,
    nom: 'Laptop 1',
    fabriquant: 'Lenovo',
    prix: 1600,
    ultrabook: false,
    options: [
      'Intel Core i5',
      'Standard Display',
      'HDD',
      'Long life battery'
    ]
  }
  {
    _id: ObjectId('675162b2f9f75d24eda5923e'),
    id: 2,
    nom: 'Laptop 2',
    fabriquant: 'Apple',
    prix: 1200,
    ultrabook: true,
    options: [
      'Intel Core i7',
      'Retina Display',
      'HDD',
      'Long life battery'
    ]
  }
```

14/

```
> db.laptops.updateOne(
    { nom: "Laptop 1" },
    { $set: { nom: "IdeaPad" } }
  );
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
```

15/

```
> db.laptops.countDocuments({ prix: { $gte: 1500, $lte: 2500 } });
< 13
```

16/

```
> db.laptops.aggregate([
    { $match: { fabriquant: "lenovo" } },
    { $group: { _id: null, totalPrix: { $sum: "$prix" } } }
  ]);
< {
    _id: null,
    totalPrix: 2500
  }
```

17/

```
> db.laptops.aggregate([
    {
      $group: {
        _id: "$fabriquant",
        prixMoyen: { $avg: "$prix" }
      }
    }
  ]);
< {
    _id: 'lenovo',
    prixMoyen: 2500
  }
  {
    _id: 'Apple',
    prixMoyen: 4675
  }
  {
    _id: 'Lenovo',
    prixMoyen: 1600
  }
```

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```
> db.laptops.aggregate([
    {
      $group: {
        _id: "$fabriquant",
        prixMoyen: { $avg: "$prix" }
      }
    },
    {
      $sort: { prixMoyen: -1 }
    }
]);
< {
    _id: 'Apple',
    prixMoyen: 4675
}
{
    _id: 'lenovo',
    prixMoyen: 2500
}
{
    _id: 'Lenovo',
    prixMoyen: 1600
}
```