

Database Design - Exam #2

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* Required

MongoDB

While applying filters to the find() function, which operator is implicit between criteria?

* 5 points

- ☒ AND
- ☐ OR
- ☐ XOR
- ☐ NOT



How many documents in the 'livestock' collection might be updated with * 5 points the following command?

```
db.livestock.update(  
  { type: 'Chickens' },  
  {  
    $set: {  
      numToes: 4  
    }  
  }  
)
```

- ☒ one
- ☐ two
- ☐ as many as there are documents with the type field set to the value, 'Chickens'
- ☐ as many as there are documents with the numToes field set to the value, 4
- ☐ none - this command will never update any documents

A blank '{ }' object in the criteria argument of a find() function is the * 5 points same as applying no filters and returns all documents of the collection.

- ☒ True
- ☐ False



Which kind of documents would be matched by the following query? *

5 points

```
db.people.find({
  age: {
    $gte: 60,
    $lte: 30,
  },
  favoriteBrand: "Adidas",
})
```

- ☒ (people who are 60 years or older AND 30 years or younger) AND whose favorite brand is Adidas
- ☐ (people who are 60 years or older AND 30 years or younger) OR whose favorite brand is Adidas
- ☐ (people who are 60 years or older OR 30 years or younger) AND whose favorite brand is Adidas
- ☐ (people who are 60 years or older OR 30 years or younger) OR whose favorite brand is Adidas

MongoDB is a document-oriented database with native support for geospatial queries that is most commonly queried using the SQL language.

* 5 points

- ☐ True
- ☒ False



Assuming a MongoDB database with a collection named 'students', which language/tool might be able to interpret the following query?

* 5 points

```
results = db.students.find({  
    "major": "Computer Science",  
})
```

- ☐ HTML with CSS
- ☒ Python, using the pymongo module
- ☐ MongoDB's mongo Javascript shell
- ☐ SQL

Which of the following two commands return the same result? (Assume this collection has multiple documents.)

* 5 points

- ☐ db.toys.first()
- ☒ db.toys.findOne()
- ☒ db.toys.find().limit(1)
- ☐ db.toys.limit(1)
- ☐ db.toys.find()

In an aggregation pipeline, the input to all stages is the same as the input to the first stage?

* 5 points

- ☐ True
- ☒ False



MongoDB supports only three of the four CRUD operations. *

5 points

- ☐ True
- ☒ False

You need to create a collection explicitly before you insert a document into it. *

5 points

- ☐ True
- ☒ False

How many documents in the 'toys' collection might be deleted by the following command?

* 5 points

```
db.toys.remove({  
  category: 'doll'  
})
```

- ☐ The first entry matching the criterion
- ☐ The first two entries matching the criterion
- ☒ All entries matching the criterion
- ☐ None. This is an invalid function.



Assuming a MongoDB database with a collection named 'books', which * 5 points
language/tool might be able to interpret the following query?

```
db.books.find({
  $or: [
    {
      price: {
        $gte: 20,
      },
    },
    {
      edition: "Penguin",
    },
  ],
})
```

- ☐ HTML with CSS
- ☐ Python, using the pymongo module
- ☒ MongoDB's mongo Javascript shell
- ☐ SQL



How many documents and which fields does the following set of commands return from the 'toys' collection? (Assume there are 'x' documents satisfying the criterion.) Answers are formatted as <number of documents>, <list of fields>.

* 5 points

```
let fields = { category: 1 }  
db.toys.find({manufacturer: "Kerry Kruse"}, fields)
```

- ☐ 1, ['manufacturer']
- ☐ x, ['_id', 'manufacturer']
- ☐ 1, ['category']
- ☐ x, ['manufacturer', 'category']
- ☐ x, ['category']
- ☒ x, ['_id', 'category']
- ☐ 1, ['manufacturer', 'category']



What does the following set of commands do? *

5 points

```
let qualified = {
  $match: {
    "experience" : {$gte: 3},
    "performance_idx": {$gt : 4.5}
  }
}

let name = {
  $project: {
    "name": 1
  }
}

db.employees.aggregate([qualified, name])
```

- ☐ Returns name, experience and performance_idx of employees with name = '1', experience greater than or equal to 3 and performance_idx greater than 4.5
- ☐ Returns employees with experience greater than or equal to 3 and performance_idx greater than 4.5
- ☐ Returns name, experience and performance_idx of employees with experience greater than or equal to 3 and performance_idx greater than 4.5
- ☒ Returns the names of employees with experience greater than or equal to 3 and performance_idx greater than 4.5
- ☐ Returns names of employees with one name, experience greater than 3 and performance_idx greater than 4.5.



Assuming a MongoDB database with a collection named 'toys', which field(s) would be included in the result set from the following query?

* 5 points

```
db.toys.insert({
  manufacturer: "Kathe Kruse",
  category: "doll",
  sku: "KS944RUR"
})

db.toys.find(
  { category: "doll" },
  { manufacturer: 1 }
)
```

- ☐ category
- ☒ manufacturer
- ☐ sku
- ☐ created_at

How many stages must the aggregate() function include in the "aggregation pipeline"?

* 5 points

- ☐ 1
- ☐ 2
- ☒ as many as desired
- ☐ None - there is no aggregation pipeline in MongoDB



Which of the following commands is used to count the number of documents in the 'toys' collection?

* 5 points

- ☐ db.toys.count()
- ☐ db.find.count()
- ☐ db.toys.count(find())
- ☒ db.toys.find().count()
- ☐ None of the above

What does the "projection" (the second argument in the find() function do? *

5 points

- ☐ Modifies the field(s) mentioned in the criteria
- ☐ Filters which documents in the collection are in the results
- ☒ Specifies which field(s) to show in the results
- ☐ None of the above



What does the following set of commands do? *

5 points

```
let order_by_year = { $sort: { birthyear: -1 } }  
db.employees.aggregate([order_by_year, name])
```

- ☒ Lists employee names from youngest to oldest
- ☐ Lists employee names from oldest to youngest
- ☐ Lists employee names and birth years from oldest to youngest
- ☐ Lists employee names and birth years from youngest to oldest
- ☐ Lists employee names but hides the birth years from youngest to oldest

In the following set of commands, the 'fields' variable is used as the _____?

* 5 points

```
let fields = { category: 1 }  
db.toys.find({manufacturer: "Kerry Kruse"}, fields)
```

- ☐ Criteria
- ☒ Projection
- ☐ Both
- ☐ None of the others

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