



## Course Overview



## View Discussion

### Chapter 3: Patterns (Part 1)

## Lab: Apply the Attribute Pattern

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### Problem:

### User Story

The museum we work at has grown from a local attraction to one that is seen as having very popular items.

For this reason, other museums in the World have started exchanging pieces of art with our museum.

Our database was tracking if our pieces are on display and where they are in the museum.

To track the pieces we started exchanging with other museum, we added an array called **events**, in which we created an entry for each date a piece was loaned and the museum it was loaned to.

[COPY](#)

```
{
  "_id": ObjectId("5c5348f5be09bedd4f196f18"),
  "title": "Cookies in the sky",
  "artist": "Michelle Vinci",
  "date_acquisition": ISODate("2017-12-25T00:00:00.000Z"),
  "location": "Blue Room, 20A",
  "on_display": false,
  "in_house": false,
  "events": [{
    "moma": ISODate("2019-01-31T00:00:00.000Z"),
    "louvres": ISODate("2020-01-01T00:00:00.000Z")
  }]
}
```

The problem with this design is that we need to build a new index every time there is a new museum with which we start exchanging pieces. For example, when we started working with The Prado in Madrid, we needed to add this index:

```
{ "events.prado" : 1 }
```

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## Task

To address this issue, you've decided to change the schema to:

- use a single index on all event dates.
- transform the field that tracks the date when a piece was acquired, *date\_acquisition*, so that it is also indexed with the values above.

To ensure the validator can verify your solution, use "k" and "v" as field names if needed.

To complete this lab:

- Modify the following schema to incorporate the above changes:

```
{
  "_id": "<objectId>",
  "title": "<string>",
  "artist": "<string>",
  "date_acquisition": "<date>",
  "location": "<string>",
  "on_display": "<bool>",
  "in_house": "<bool>",
  "events": [{
    "moma": "<date>",
    "louvres": "<date>"
  }]
}
```

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- Save your new schema to a file named **pattern\_attribute.json**.
- Validate your answer on *Windows* by running in the **CMD** shell:

```
validate_m320 pattern_attribute --file pattern_at
```

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- Validate your answer on *MacOS* and *Linux* by running:

```
./validate_m320 pattern_attribute --file pattern_
```

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After running this script you will either be given a validation code or an error message indicating what might be missing in your file.

When you get the validation code, paste it in the text box below and click the submit button.

**Attempts Remaining: 2 Attempts left**   

**Enter answer here:**

5c538affbe09bedd4f196f19

Try again

[Proceed to next section](#)

### Assignment is Due

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**08d:04hr:20m**

24 gru, 17:00 UTC

### Your Grade

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**PASS/FAIL**

Submitted

### Download Handouts

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[go/m320/lab\\_pattern\\_attribute/problem\\_schema.json](https://go/m320/lab_pattern_attribute/problem_schema.json)