



MongoDB Physical Model

Schema for:

Model name: Assignment2
Author:
Version:
File name: Assignment2.json
File path: /Users/pavan.kumar/Assignment2.json
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1. Model

2. Databases

2.1 ELFs

2.1.2. Collections

- 2.1.2.1 Author
- 2.1.2.2 Book
- 2.1.2.3 Customer
- 2.1.2.4 Inventory
- 2.1.2.5 Order
- 2.1.2.6 publisher

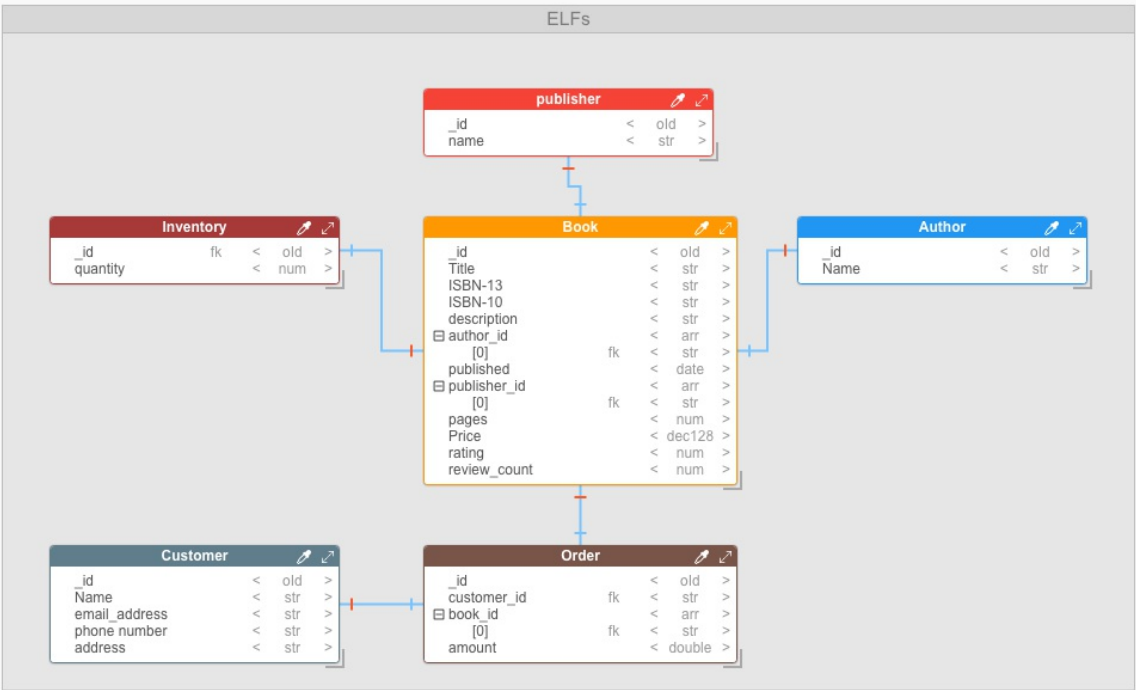
3. Relationships

- 3.1 fk Author.id to Book.author_id.[0]
- 3.2 fk Book.id to Inventory.id
- 3.3 fk Book.id to Order.books_ordered.[0]
- 3.4 fk Customer.id to Order.customer_id
- 3.5 fk publisher.id to Book.publisher_id.[0]

1. MODEL

1.1 Model Assignment2

1.1.1 Assignment2 Entity Relationship Diagram



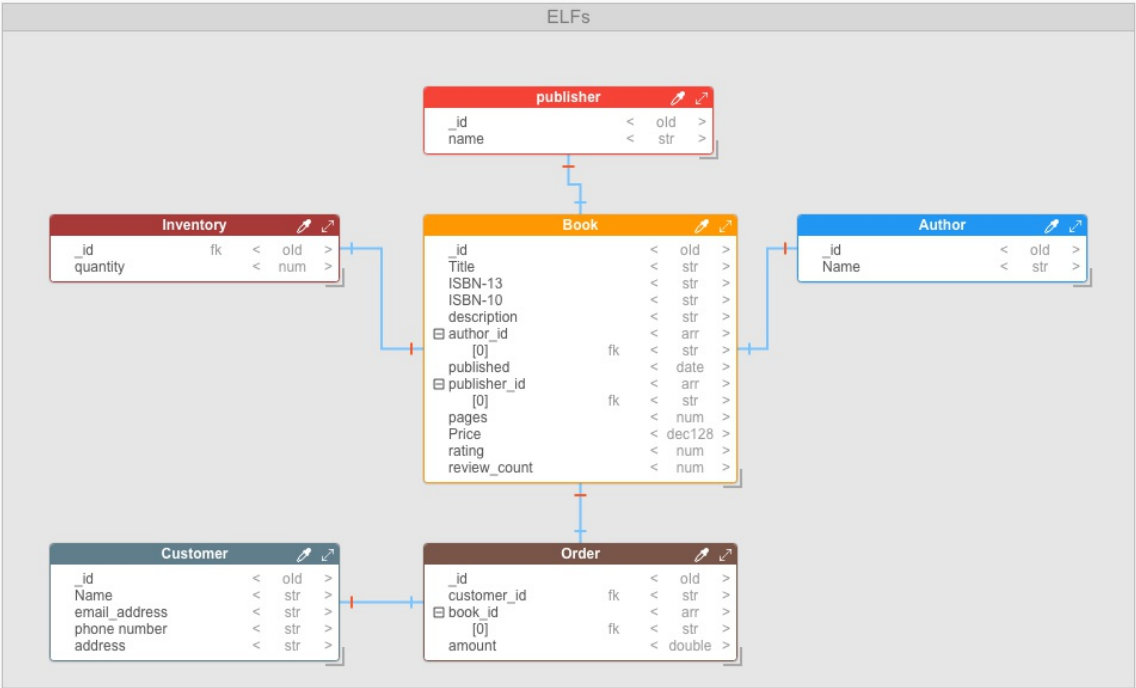
1.1.2 Assignment2 Properties

| PROPERTY | VALUE |
|----------------|-------------|
| Model name | Assignment2 |
| Technical name | |
| Description | |
| Author | |
| Version | |
| DB vendor | MongoDB |
| DB version | v4.0 |
| Comments | |

1.1.3 Assignment2 DB Definitions

2. DATABASES

2.1 Database ELFs



2.1.1 ELFs Properties

| PROPERTY | VALUE |
|-----------------|-------|
| Database name | ELFs |
| Technical name | |
| Enable sharding | |
| Description | |
| Comments | |

2.1.2 ELFs Collections

2.1.2.1 Collection Author

2.1.2.1.1 Author Properties

| PROPERTY | VALUE |
|-----------------------|------------|
| Collection name | Author |
| Technical name | |
| Id | |
| Description | |
| Database | ELFs |
| Capped | false |
| Size | |
| Max | |
| Storage engine | WiredTiger |
| Config String | |
| Validation level | Off |
| Validation action | Warn |
| Additional properties | false |
| Comments | |

2.1.2.1.2 Author Fields

| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|-------|----------|-------|-----|--------------------|----------|
| _id | objectId | false | | | |
| Name | string | false | | Name of the author | |

2.1.2.1.2.1 Field _id

2.1.2.1.2.1.1 _id Tree Diagram

| |
|---------------------------|
| {_id} _id |
| type <i>objectId</i> |

2.1.2.1.2.1.2 _id properties

| PROPERTY | VALUE |
|--------------------|----------|
| Name | _id |
| Technical name | Id |
| Id | Id |
| Type | objectId |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Sample | |
| Comments | |

2.1.2.1.2.2 Field Name

2.1.2.1.2.2.1 Name Tree Diagram

| |
|----------------------------|
| {ABC} Name |
| type <i>string</i> |

2.1.2.1.2.2.2 Name properties

| PROPERTY | VALUE |
|--------------------|--------------------|
| Name | Name |
| Technical name | Name |
| Id | |
| Type | string |
| Description | Name of the author |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.1.3 Author JSON Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "capped": false,
  "validationLevel": "Off",
  "validationAction": "Warn",
  "additionalProperties": false,
  "properties": {
    "Id": {
      "id": "Id",
      "type": "string",
      "path": [
        "54e841a0-6333-11e9-8998-6b1d0c061be7",
        "99c30e90-6333-11e9-8998-6b1d0c061be7"
      ],
      "pattern": "^[a-fA-F0-9]{24}$"
    },
    "Name": {
      "type": "string",
      "description": "Name of the author",
      "path": [
        "54e841a0-6333-11e9-8998-6b1d0c061be7",
        "bf3fc460-6333-11e9-8998-6b1d0c061be7"
      ]
    }
  }
}
```

2.1.2.1.4 Author JSON data

```
{
  "Id": ObjectId("507f1f77bcf86cd799439011"),
  "Name": "Lorem"
}
```

2.1.2.2 Collection Book

2.1.2.2.1 Book Properties

| PROPERTY | VALUE |
|-----------------------|------------|
| Collection name | Book |
| Technical name | |
| Id | |
| Description | |
| Database | ELFs |
| Capped | false |
| Size | |
| Max | |
| Storage engine | WiredTiger |
| Config String | |
| Validation level | Off |
| Validation action | Warn |
| Additional properties | false |
| Comments | |

2.1.2.2.2 Book Fields

| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|--------------|----------|-------|-----|-------------|----------|
| _id | objectId | false | | | |
| Title | string | false | | | |
| ISBN-13 | string | false | | | |
| ISBN-10 | string | false | | | |
| description | string | false | | | |
| author_id | array | false | | | |
| [0] | string | false | | | |
| published | date | false | | | |
| publisher_id | array | false | | | |
| [0] | string | false | | | |
| pages | numeric | false | | | |
| Price | numeric | false | | | |
| rating | numeric | false | | | |
| review_count | numeric | false | | | |

2.1.2.2.2.1 Field _id

2.1.2.2.2.1.1 _id Tree Diagram

| |
|----------------------|
| {_id} <i>_id</i> |
| type <i>objectId</i> |

2.1.2.2.2.1.2 _id properties

| PROPERTY | VALUE |
|--------------------|----------|
| Name | _id |
| Technical name | |
| Id | |
| Type | objectId |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Sample | |
| Comments | |

2.1.2.2.2.2 Field Title

2.1.2.2.2.2.1 Title Tree Diagram

| |
|--------------------|
| {ABC} <i>Title</i> |
| type <i>string</i> |

2.1.2.2.2.2.2 Title properties

| PROPERTY | VALUE |
|--------------------|--------|
| Name | Title |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.2.3 Field ISBN-13

2.1.2.2.2.3.1 ISBN-13 Tree Diagram

| |
|---------------|
| {ABC} ISBN-13 |
| type string |

2.1.2.2.2.3.2 ISBN-13 properties

| PROPERTY | VALUE |
|--------------------|---------|
| Name | ISBN-13 |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.2.4 Field ISBN-10

2.1.2.2.2.4.1 ISBN-10 Tree Diagram

| |
|---------------|
| {ABC} ISBN-10 |
| type string |

2.1.2.2.4.2 ISBN-10 properties

| PROPERTY | VALUE |
|--------------------|---------|
| Name | ISBN-10 |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.5 Field description

2.1.2.2.5.1 description Tree Diagram

| |
|-----------------------------------|
| {ABC} description |
| type <i>string</i> |

2.1.2.2.5.2 description properties

| PROPERTY | VALUE |
|--------------------|-------------|
| Name | description |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.6 Field author_id

2.1.2.2.2.6.1 author_id Tree Diagram



2.1.2.2.2.6.2 author_id Hierarchy

Parent field: Book
Child field(s):

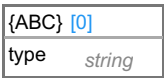
| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|-------|--------|-------|-----|-------------|----------|
| [0] | string | false | fk | | |

2.1.2.2.2.6.3 author_id properties

| PROPERTY | VALUE |
|--------------------|-----------|
| Name | author_id |
| Technical name | |
| Id | |
| Type | array |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Min items | |
| Max items | |
| Unique items | false |
| Additional items | true |
| Comments | |

2.1.2.2.2.7 Field [0]

2.1.2.2.2.7.1 [0] Tree Diagram



2.1.2.2.2.7.2 [0] properties

| PROPERTY | VALUE |
|--------------------|-------------|
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Primary key | false |
| Foreign collection | Author |
| Foreign field | _id |
| Relationship type | Foreign Key |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.2.8 Field published

2.1.2.2.2.8.1 published Tree Diagram

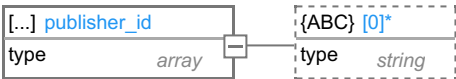
| |
|------------------|
| {dt} published |
| type <i>date</i> |

2.1.2.2.2.8.2 published properties

| PROPERTY | VALUE |
|--------------------|-----------|
| Name | published |
| Technical name | |
| Id | |
| Type | date |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Sample | |
| Comments | |

2.1.2.2.2.9 Field publisher_id

2.1.2.2.2.9.1 publisher_id Tree Diagram



2.1.2.2.2.9.2 publisher_id Hierarchy

Parent field: Book
Child field(s):

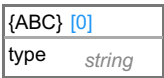
| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|-------|--------|-------|-----|-------------|----------|
| [0] | string | false | fk | | |

2.1.2.2.2.9.3 publisher_id properties

| PROPERTY | VALUE |
|--------------------|--------------|
| Name | publisher_id |
| Technical name | |
| Id | |
| Type | array |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Min items | |
| Max items | |
| Unique items | false |
| Additional items | true |
| Comments | |

2.1.2.2.2.10 Field [0]

2.1.2.2.2.10.1 [0] Tree Diagram



2.1.2.2.2.10.2 [0] properties

| PROPERTY | VALUE |
|--------------------|-------------|
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Primary key | false |
| Foreign collection | publisher |
| Foreign field | _id |
| Relationship type | Foreign Key |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.2.11 Field pages

2.1.2.2.2.11.1 pages Tree Diagram

| |
|-----------------------------|
| {123} pages |
| type <i>numeric</i> |

2.1.2.2.2.11.2 pages properties

| PROPERTY | VALUE |
|--------------------|---------|
| Name | pages |
| Technical name | |
| Id | |
| Type | numeric |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Subtype | |
| Unit | |
| Min value | |
| Excl min | false |
| Max value | |
| Excl max | false |
| Multiple of | |
| Divisible by | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.2.12 Field Price

2.1.2.2.2.12.1 Price Tree Diagram

| |
|---------------------|
| {123} Price |
| type <i>numeric</i> |

2.1.2.2.2.12.2 Price properties

| PROPERTY | VALUE |
|--------------------|------------|
| Name | Price |
| Technical name | |
| Id | |
| Type | numeric |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Subtype | decimal128 |
| Unit | |
| Min value | |
| Excl min | false |
| Max value | |
| Excl max | false |
| Multiple of | |
| Divisible by | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.2.13 Field rating

2.1.2.2.2.13.1 rating Tree Diagram

| |
|---------------------|
| {123} rating |
| type <i>numeric</i> |

2.1.2.2.2.13.2 rating properties

| PROPERTY | VALUE |
|--------------------|---------|
| Name | rating |
| Technical name | |
| Id | |
| Type | numeric |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Subtype | |
| Unit | |
| Min value | |
| Excl min | false |
| Max value | |
| Excl max | false |
| Multiple of | |
| Divisible by | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.2.14 Field review_count

2.1.2.2.2.14.1 review_count Tree Diagram

| |
|------------------------------------|
| {123} review_count |
| type <i>numeric</i> |

2.1.2.2.2.14.2 review_count properties

| PROPERTY | VALUE |
|--------------------|--------------|
| Name | review_count |
| Technical name | |
| Id | |
| Type | numeric |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Subtype | |
| Unit | |
| Min value | |
| Excl min | false |
| Max value | |
| Excl max | false |
| Multiple of | |
| Divisible by | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.2.3 Book JSON Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "capped": false,
  "validationLevel": "Off",
  "validationAction": "Warn",
  "additionalProperties": false,
  "properties": {
    "_id": {
      "type": "string",
      "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "225f9750-6334-11e9-8998-6b1d0c061be7"
      ],
      "pattern": "^[a-fA-F0-9]{24}$"
    },
    "Title": {
      "type": "string",
      "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "62e18a10-6337-11e9-8998-6b1d0c061be7"
      ]
    },
    "ISBN-13": {
      "type": "string",
      "path": [
```



```

        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "b7259700-63e7-11e9-8998-6b1d0c061be7"
    ]
},
"ISBN-10": {
    "type": "string",
    "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "2f50bb60-6334-11e9-8998-6b1d0c061be7"
    ]
},
"description": {
    "type": "string",
    "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "2c797820-6337-11e9-8998-6b1d0c061be7"
    ]
},
"author_id": {
    "type": "array",
    "uniqueItems": false,
    "additionalItems": true,
    "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "7b5380b0-6334-11e9-8998-6b1d0c061be7"
    ],
    "items": {
        "type": "string",
        "path": [
            "35592f70-6333-11e9-8998-6b1d0c061be7",
            "7b5380b0-6334-11e9-8998-6b1d0c061be7",
            "7b6de680-6334-11e9-8998-6b1d0c061be7"
        ]
    }
},
"published": {
    "type": "string",
    "format": "date-time",
    "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "c7e3f520-6336-11e9-8998-6b1d0c061be7"
    ]
},
"publisher_id": {
    "type": "array",
    "uniqueItems": false,
    "additionalItems": true,
    "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "bb714fe0-6336-11e9-8998-6b1d0c061be7"
    ],
    "items": {
        "type": "string",
        "path": [
            "35592f70-6333-11e9-8998-6b1d0c061be7",
            "bb714fe0-6336-11e9-8998-6b1d0c061be7",
            "a06d65b0-63e7-11e9-8998-6b1d0c061be7"
        ]
    }
}

```

```

    },
    "pages": {
      "type": "number",
      "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "1dc28830-6337-11e9-8998-6b1d0c061be7"
      ]
    },
    "Price": {
      "type": "number",
      "mode": "decimal128",
      "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "b6c19560-6334-11e9-8998-6b1d0c061be7"
      ]
    },
    "rating": {
      "type": "number",
      "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "658db3c0-6336-11e9-8998-6b1d0c061be7"
      ]
    },
    "review_count": {
      "type": "number",
      "path": [
        "35592f70-6333-11e9-8998-6b1d0c061be7",
        "7541ef70-6336-11e9-8998-6b1d0c061be7"
      ]
    }
  }
}

```

2.1.2.2.4 Book JSON data

```

{
  "_id": ObjectId("507f1f77bcf86cd799439011"),
  "Title": "Lorem",
  "ISBN-13": "Lorem",
  "ISBN-10": "Lorem",
  "description": "Lorem",
  "author_id": [
    "Lorem"
  ],
  "published": ISODate("2016-04-08T15:06:21.595Z"),
  "publisher_id": [
    "Lorem"
  ],
  "pages": 56,
  "Price": -3.547748612578664e+49,
  "rating": 22,
  "review_count": -71
}

```

2.1.2.3 Collection Customer

2.1.2.3.1 Customer Properties

| PROPERTY | VALUE |
|-----------------------|------------|
| Collection name | Customer |
| Technical name | |
| Id | |
| Description | |
| Database | ELFs |
| Capped | false |
| Size | |
| Max | |
| Storage engine | WiredTiger |
| Config String | |
| Validation level | Off |
| Validation action | Warn |
| Additional properties | false |
| Comments | |

2.1.2.3.2 Customer Fields

| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|---------------|----------|-------|-----|-------------|----------|
| _id | objectId | false | | | |
| Name | string | false | | | |
| email_address | string | false | | | |
| phone number | string | false | | | |
| address | string | false | | | |

2.1.2.3.2.1 Field _id

2.1.2.3.2.1.1 _id Tree Diagram

| |
|----------------------|
| {_id} _id |
| type <i>objectId</i> |

2.1.2.3.2.1.2 _id properties

| PROPERTY | VALUE |
|--------------------|----------|
| Name | _id |
| Technical name | |
| Id | |
| Type | objectId |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Sample | |
| Comments | |

2.1.2.3.2.2 Field Name

2.1.2.3.2.2.1 Name Tree Diagram

| |
|----------------------------|
| {ABC} Name |
| type <i>string</i> |

2.1.2.3.2.2.2 Name properties

| PROPERTY | VALUE |
|--------------------|--------|
| Name | Name |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.3.2.3 Field email_address

2.1.2.3.2.3.1 email_address Tree Diagram

| |
|-------------------------------------|
| {ABC} email_address |
| type <i>string</i> |

2.1.2.3.2.3.2 email_address properties

| PROPERTY | VALUE |
|--------------------|---------------|
| Name | email_address |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.3.2.4 Field phone number

2.1.2.3.2.4.1 phone number Tree Diagram

| |
|--------------------|
| {ABC} phone number |
| type string |

2.1.2.3.2.4.2 phone number properties

| PROPERTY | VALUE |
|--------------------|--------------|
| Name | phone number |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.3.2.5 Field address

2.1.2.3.2.5.1 address Tree Diagram

| |
|---------------|
| {ABC} address |
| type string |

2.1.2.3.2.5.2 address properties

| PROPERTY | VALUE |
|--------------------|---------|
| Name | address |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.3.3 Customer JSON Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "capped": false,
  "validationLevel": "Off",
  "validationAction": "Warn",
  "additionalProperties": false,
  "properties": {
    "_id": {
      "type": "string",
      "path": [
        "5f7b5170-6333-11e9-8998-6b1d0c061be7",
        "787d12b0-6335-11e9-8998-6b1d0c061be7"
      ],
      "pattern": "^[a-fA-F0-9]{24}$"
    },
    "Name": {
      "type": "string",
      "path": [
        "5f7b5170-6333-11e9-8998-6b1d0c061be7",
        "a5533120-6335-11e9-8998-6b1d0c061be7"
      ]
    },
    "email_address": {
      "type": "string",
      "path": [
        "5f7b5170-6333-11e9-8998-6b1d0c061be7",
        "ae9752c0-6335-11e9-8998-6b1d0c061be7"
      ]
    },
    "phone number": {
      "type": "string",
      "path": [
        "5f7b5170-6333-11e9-8998-6b1d0c061be7",
        "566c0f80-6404-11e9-9521-370f84626d58"
      ]
    },
    "address": {
      "type": "string",
      "path": [
        "5f7b5170-6333-11e9-8998-6b1d0c061be7",
        "ba129fb0-6335-11e9-8998-6b1d0c061be7"
      ]
    }
  }
}

```

2.1.2.3.4 Customer JSON data

```
{
  "_id": ObjectId("507f1f77bcf86cd799439011"),
  "Name": "Lorem",
  "email_address": "Lorem",
  "phone number": "Lorem",
  "address": "Lorem"
}
```

2.1.2.4 Collection Inventory

2.1.2.4.1 Inventory Properties

| PROPERTY | VALUE |
|-----------------------|------------|
| Collection name | Inventory |
| Technical name | |
| Id | |
| Description | |
| Database | ELFs |
| Capped | false |
| Size | |
| Max | |
| Storage engine | WiredTiger |
| Config String | |
| Validation level | Off |
| Validation action | Warn |
| Additional properties | false |
| Comments | |

2.1.2.4.2 Inventory Fields

| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|----------|----------|-------|-----|-------------|----------|
| _id | objectId | false | | | |
| quantity | numeric | false | | | |

2.1.2.4.2.1 Field _id

2.1.2.4.2.1.1 _id Tree Diagram

| |
|----------------------|
| {_id} _id |
| type <i>objectId</i> |

2.1.2.4.2.1.2 _id properties

| PROPERTY | VALUE |
|--------------------|-------------|
| Name | _id |
| Technical name | |
| Id | |
| Type | objectId |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | Book |
| Foreign field | _id |
| Relationship type | Foreign Key |
| Default | |
| Sample | |
| Comments | |

2.1.2.4.2.2 Field quantity

2.1.2.4.2.2.1 quantity Tree Diagram

| |
|-------------------|
| {123} quantity |
| type numeric |

2.1.2.4.2.2.2 quantity properties

| PROPERTY | VALUE |
|--------------------|----------|
| Name | quantity |
| Technical name | |
| Id | |
| Type | numeric |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Subtype | |
| Unit | |
| Min value | |
| Excl min | false |
| Max value | |
| Excl max | false |
| Multiple of | |
| Divisible by | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.4.3 Inventory JSON Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "capped": false,
  "validationLevel": "Off",
  "validationAction": "Warn",
  "additionalProperties": false,
  "properties": {
    "_id": {
      "type": "string",
      "path": [
        "3fd6bb70-6333-11e9-8998-6b1d0c061be7",
        "dce316b0-6334-11e9-8998-6b1d0c061be7"
      ],
      "pattern": "^[a-fA-F0-9]{24}$"
    },
    "quantity": {
      "type": "number",
      "path": [
        "3fd6bb70-6333-11e9-8998-6b1d0c061be7",
        "ed1cfd20-6334-11e9-8998-6b1d0c061be7"
      ]
    }
  }
}
```

2.1.2.4.4 Inventory JSON data

```
{
  "_id": ObjectId("507f1f77bcf86cd799439011"),
  "quantity": 77
}
```

2.1.2.5 Collection Order

2.1.2.5.1 Order Properties

| PROPERTY | VALUE |
|-----------------------|------------|
| Collection name | Order |
| Technical name | |
| Id | |
| Description | |
| Database | ELFs |
| Capped | false |
| Size | |
| Max | |
| Storage engine | WiredTiger |
| Config String | |
| Validation level | Off |
| Validation action | Warn |
| Additional properties | false |
| Comments | |

2.1.2.5.2 Order Fields

| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|-------------|----------|-------|-----|-------------|----------|
| _id | objectId | false | | | |
| customer_id | string | false | | | |
| book_id | array | false | | | |
| [0] | string | false | | | |
| amount | numeric | false | | | |

2.1.2.5.2.1 Field _id

2.1.2.5.2.1.1 _id Tree Diagram

| |
|----------------------|
| {_id} _id |
| type <i>objectId</i> |

2.1.2.5.2.1.2 _id properties

| PROPERTY | VALUE |
|--------------------|----------|
| Name | _id |
| Technical name | |
| Id | |
| Type | objectId |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Sample | |
| Comments | |

2.1.2.5.2.2 Field customer_id

2.1.2.5.2.1 customer_id Tree Diagram

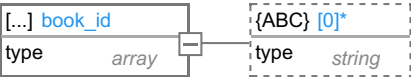
| |
|-------------------|
| {ABC} customer_id |
| typestring |

2.1.2.5.2.2 customer_id properties

| PROPERTY | VALUE |
|--------------------|-------------|
| Name | customer_id |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | Customer |
| Foreign field | _id |
| Relationship type | Foreign Key |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.5.2.3 Field book_id

2.1.2.5.2.3.1 book_id Tree Diagram



2.1.2.5.2.3.2 book_id Hierarchy

Parent field: Order
Child field(s):

| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|-------|--------|-------|-----|-------------|----------|
| [0] | string | false | fk | | |

2.1.2.5.2.3.3 book_id properties

| PROPERTY | VALUE |
|--------------------|---------|
| Name | book_id |
| Technical name | |
| Id | |
| Type | array |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Min items | |
| Max items | |
| Unique items | false |
| Additional items | true |
| Comments | |

2.1.2.5.2.4 Field [0]

2.1.2.5.2.4.1 [0] Tree Diagram

| |
|--------------------|
| {ABC} [0] |
| type <i>string</i> |

2.1.2.5.2.4.2 [0] properties

| PROPERTY | VALUE |
|--------------------|-------------|
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Primary key | false |
| Foreign collection | Book |
| Foreign field | _id |
| Relationship type | Foreign Key |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.5.2.5 Field amount

2.1.2.5.2.5.1 amount Tree Diagram

| |
|-----------------|
| {123} amount |
| type numeric |

2.1.2.5.2.5.2 amount properties

| PROPERTY | VALUE |
|--------------------|---------|
| Name | amount |
| Technical name | |
| Id | |
| Type | numeric |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Subtype | double |
| Unit | |
| Min value | |
| Excl min | false |
| Max value | |
| Excl max | false |
| Multiple of | |
| Divisible by | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.5.3 Order JSON Schema

```

{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "capped": false,
  "validationLevel": "Off",
  "validationAction": "Warn",
  "additionalProperties": false,
  "properties": {
    "_id": {
      "type": "string",
      "path": [
        "4f5233e0-6333-11e9-8998-6b1d0c061be7",
        "ccc2dd50-6335-11e9-8998-6b1d0c061be7"
      ],
      "pattern": "^[a-fA-F0-9]{24}$"
    },
    "customer_id": {
      "type": "string",
      "path": [
        "4f5233e0-6333-11e9-8998-6b1d0c061be7",
        "d86ab880-6335-11e9-8998-6b1d0c061be7"
      ]
    },
    "book_id": {
      "type": "array",
      "uniqueItems": false,
      "additionalItems": true,
      "path": [
        "4f5233e0-6333-11e9-8998-6b1d0c061be7",
        "052d27e0-6336-11e9-8998-6b1d0c061be7"
      ],
      "items": {
        "type": "string",
        "path": [
          "4f5233e0-6333-11e9-8998-6b1d0c061be7",
          "052d27e0-6336-11e9-8998-6b1d0c061be7",
          "054e4470-6336-11e9-8998-6b1d0c061be7"
        ]
      }
    },
    "amount": {
      "type": "number",
      "mode": "double",
      "path": [
        "4f5233e0-6333-11e9-8998-6b1d0c061be7",
        "98993ae0-63ff-11e9-9521-370f84626d58"
      ]
    }
  }
}

```

2.1.2.5.4 Order JSON data

```
{
  "_id": ObjectId("507f1f77bcf86cd799439011"),
  "customer_id": "Lorem",
  "book_id": [
    "Lorem"
  ],
  "amount": 6.451844554360413e+29
}
```

2.1.2.6 Collection publisher

2.1.2.6.1 publisher Properties

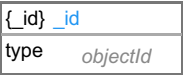
| PROPERTY | VALUE |
|-----------------------|------------|
| Collection name | publisher |
| Technical name | |
| Id | |
| Description | |
| Database | ELFs |
| Capped | false |
| Size | |
| Max | |
| Storage engine | WiredTiger |
| Config String | |
| Validation level | Off |
| Validation action | Warn |
| Additional properties | false |
| Comments | |

2.1.2.6.2 publisher Fields

| FIELD | TYPE | REQ | KEY | DESCRIPTION | COMMENTS |
|-------|----------|-------|-----|-------------|----------|
| _id | objectId | false | | | |
| name | string | false | | | |

2.1.2.6.2.1 Field _id

2.1.2.6.2.1.1 _id Tree Diagram



2.1.2.6.2.1.2 _id properties

| PROPERTY | VALUE |
|--------------------|----------|
| Name | _id |
| Technical name | |
| Id | |
| Type | objectId |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Sample | |
| Comments | |

2.1.2.6.2.2 Field name

2.1.2.6.2.2.1 name Tree Diagram

| |
|-------------|
| {ABC} name |
| type string |

2.1.2.6.2.2.2 name properties

| PROPERTY | VALUE |
|--------------------|--------|
| Name | name |
| Technical name | |
| Id | |
| Type | string |
| Description | |
| Dependencies | |
| Required | false |
| Primary key | false |
| Foreign collection | |
| Foreign field | |
| Relationship type | |
| Default | |
| Min length | |
| Max length | |
| Pattern | |
| Format | |
| Enum | |
| Sample | |
| Comments | |

2.1.2.6.3 publisher JSON Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "capped": false,
  "validationLevel": "Off",
  "validationAction": "Warn",
  "additionalProperties": false,
  "properties": {
    "_id": {
      "type": "string",
      "path": [
        "47a6b6d0-6337-11e9-8998-6b1d0c061be7",
        "4fbc6a90-6337-11e9-8998-6b1d0c061be7"
      ],
      "pattern": "^[a-fA-F0-9]{24}$"
    },
    "name": {
      "type": "string",
      "path": [
        "47a6b6d0-6337-11e9-8998-6b1d0c061be7",
        "5702e770-6337-11e9-8998-6b1d0c061be7"
      ]
    }
  }
}
```

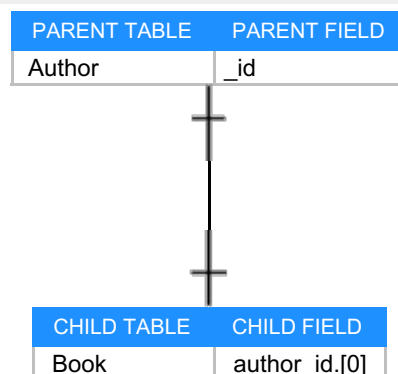
2.1.2.6.4 publisher JSON data

```
{
  "_id": ObjectId("507f1f77bcf86cd799439011"),
  "name": "Lorem"
}
```

3. RELATIONSHIPS

3.1 Relationship fk Author.id to Book.author_id.[0]

3.1.1 fk Author.id to Book.author_id.[0] Diagram

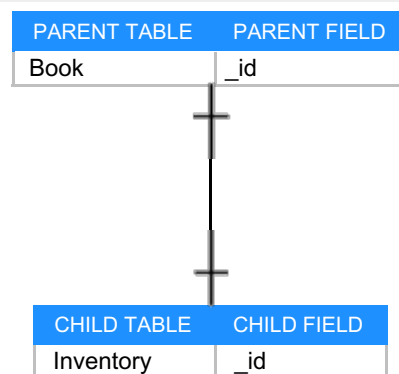


3.1.2 fk Author.id to Book.author_id.[0] Properties

| PROPERTY | VALUE |
|--------------------|------------------------------------|
| Name | fk Author.id to Book.author_id.[0] |
| Description | |
| Parent Collection | Author |
| Parent field | _id |
| Parent Cardinality | 1 |
| Child Collection | Book |
| Child field | |
| Child Cardinality | 1 |
| Comments | |

3.2 Relationship fk Book.id to Inventory.id

3.2.1 fk Book.id to Inventory.id Diagram

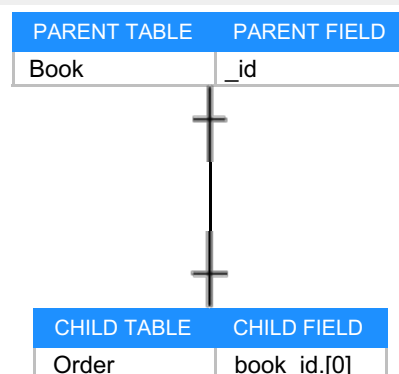


3.2.2 fk Book.id to Inventory.id Properties

| PROPERTY | VALUE |
|--------------------|----------------------------|
| Name | fk Book.id to Inventory.id |
| Description | |
| Parent Collection | Book |
| Parent field | <u>_id</u> |
| Parent Cardinality | 1 |
| Child Collection | Inventory |
| Child field | <u>_id</u> |
| Child Cardinality | 1 |
| Comments | |

3.3 Relationship fk Book.id to Order.books_ordered.[0]

3.3.1 fk Book.id to Order.books_ordered.[0] Diagram

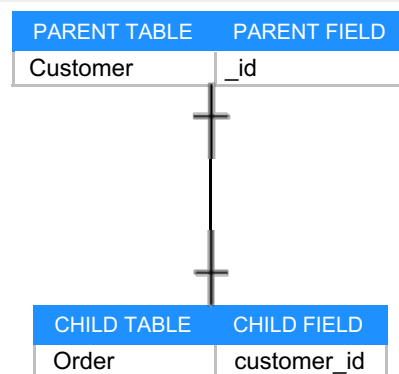


3.3.2 fk Book.id to Order.books_ordered.[0] Properties

| PROPERTY | VALUE |
|--------------------|---------------------------------------|
| Name | fk Book.id to Order.books_ordered.[0] |
| Description | |
| Parent Collection | Book |
| Parent field | _id |
| Parent Cardinality | 1 |
| Child Collection | Order |
| Child field | |
| Child Cardinality | 1 |
| Comments | |

3.4 Relationship fk Customer.id to Order.customer_id

3.4.1 fk Customer.id to Order.customer_id Diagram

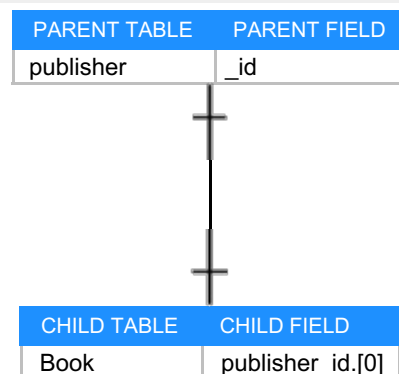


3.4.2 fk Customer.id to Order.customer_id Properties

| PROPERTY | VALUE |
|--------------------|-------------------------------------|
| Name | fk Customer.id to Order.customer_id |
| Description | |
| Parent Collection | Customer |
| Parent field | _id |
| Parent Cardinality | 1 |
| Child Collection | Order |
| Child field | customer_id |
| Child Cardinality | 1 |
| Comments | |

3.5 Relationship fk publisher.id to Book.publisher_id.[0]

3.5.1 fk publisher.id to Book.publisher_id.[0] Diagram



3.5.2 fk publisher.id to Book.publisher_id.[0] Properties

| PROPERTY | VALUE |
|--------------------|--|
| Name | fk publisher.id to Book.publisher_id.[0] |
| Description | |
| Parent Collection | publisher |
| Parent field | _id |
| Parent Cardinality | 1 |
| Child Collection | Book |
| Child field | |
| Child Cardinality | 1 |
| Comments | |