



MongoDB Physical Model

Schema for:

Model name: New Model

Author:

Version:

File name: model.json

File path: /var/www/mwa/labs/w2d1/model.json

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Created with: [Hackolade](#) - Visual data modeling for NoSQL and multimodel databases

1. Model

2. Databases

2.1 Undefined Database

2.1.1 book

2.1.2 borrow

2.1.3 student

3. Relationships

3.1 fk book.id to borrow.New Field

3.2 fk student.id to borrow.student

1. MODEL

1.1 Model New Model

1.1.1 New Model Entity Relationship Diagram



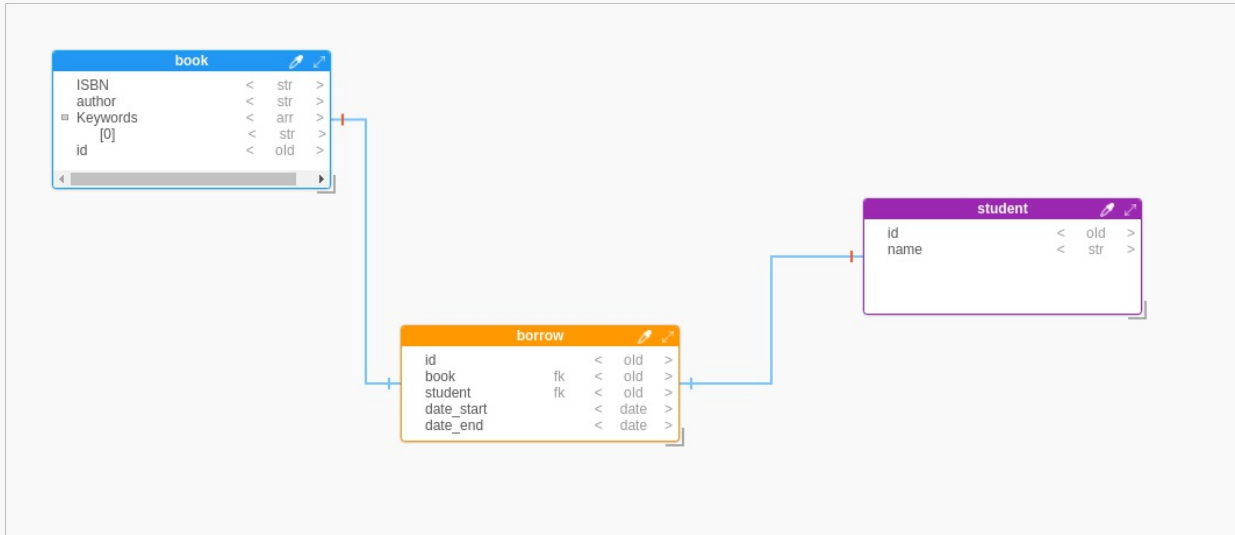
1.1.2 New Model Properties

PROPERTY	VALUE
Model name	New Model
Description	
Author	
Version	
DB vendor	MongoDB
DB version	v4.0
Enable sharding	
Comments	

1.1.3 New Model DB Definitions

2. DATABASES

2.1 Database Undefined Database



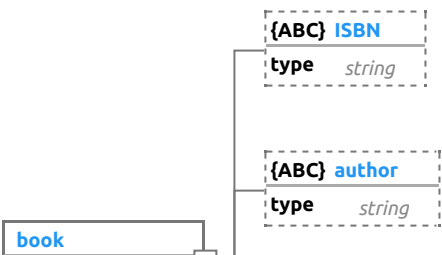
2.1.1 Undefined Database Properties

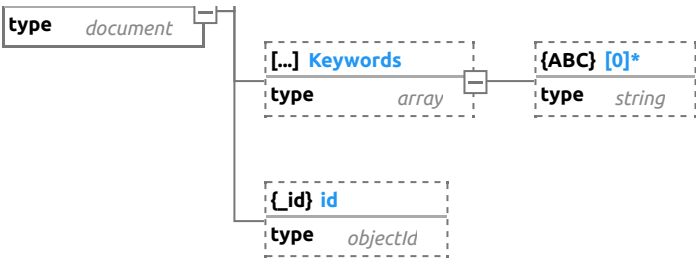
PROPERTY	VALUE
Database name	Undefined Database
Description	
Comments	

2.1.2 Undefined Database Collections

2.1.2.1 Collection book

2.1.2.1.1 book Tree Diagram





2.1.2.1.2 book Properties

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

2.1.2.1.3 book Fields

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
ISBN	string	false			
author	string	false			
Keywords	array	false			
[0]	string	false			
id	objectId	false			

2.1.2.1.3.1 Field ISBN

2.1.2.1.3.1.1 ISBN Tree Diagram



2.1.2.1.3.1.2 ISBN properties

PROPERTY	VALUE
Name	ISBN
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	

2.1.2.1.3.2 Field author**2.1.2.1.3.2.1 author Tree Diagram**

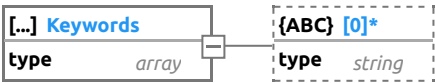
{ABC} author
type <i>string</i>

2.1.2.1.3.2.2 author properties

PROPERTY	VALUE
Name	author
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	

2.1.2.1.3.3 Field Keywords

2.1.2.1.3.3.1 Keywords Tree Diagram



2.1.2.1.3.3.2 Keywords Hierarchy

Parent field: **book**
Child field(s):

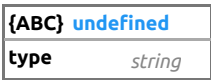
FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
[0]	string	false			

2.1.2.1.3.3.3 Keywords properties

PROPERTY	VALUE
Name	Keywords
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	

2.1.2.1.3.4 Field [0]

2.1.2.1.3.4.1 [0] Tree Diagram



2.1.2.1.3.4.2 [0] properties

PROPERTY	VALUE
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	

2.1.2.1.3.5 Field id**2.1.2.1.3.5.1 id Tree Diagram**

{_id} id
type <i>objectId</i>

2.1.2.1.3.5.2 id properties

PROPERTY	VALUE
Name	id
Id	
Type	objectId
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.1.4 book JSON Schema

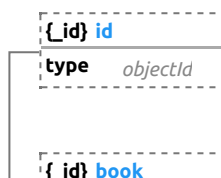
```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "additionalProperties": false,
  "capped": false,
  "properties": {
    "ISBN": {
      "type": "string"
    },
    "author": {
      "type": "string"
    },
    "Keywords": {
      "type": "array",
      "additionalItems": true,
      "uniqueItems": false,
      "items": {
        "type": "string",
        "arrayItem": true
      }
    },
    "id": {
      "type": "string",
      "pattern": "^[a-fA-F0-9]{24}$"
    }
  },
  "validationAction": "Warn",
  "validationLevel": "Off"
}
```

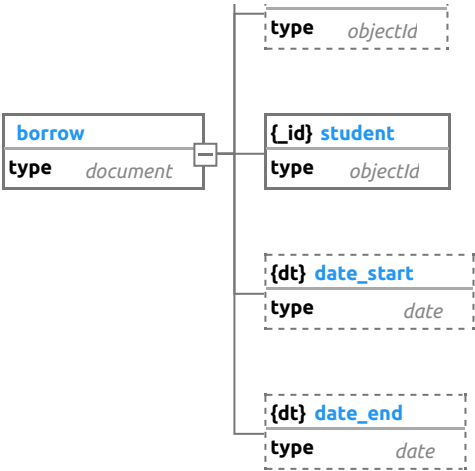
2.1.2.1.5 book JSON data

```
{
  "ISBN": "Lorem",
  "author": "Lorem",
  "Keywords": [
    "Lorem"
  ],
  "id": ObjectId("507f1f77bcf86cd799439011")
}
```

2.1.2.2 Collection borrow

2.1.2.2.1 borrow Tree Diagram





2.1.2.2.2 borrow Properties

PROPERTY	VALUE
Collection name	borrow
Id	
Description	
Database	
Capped	false
Size	
Max	
Storage engine	WiredTiger
Config String	
Validation level	Off
Validation action	Warn
Additional properties	true
Comments	

2.1.2.2.3 borrow Fields

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
id	objectId	false			
book	objectId	false			
student	objectId	true			
date_start	date	false			
date_end	date	false			

2.1.2.2.3.1 Field id

2.1.2.2.3.1.1 id Tree Diagram



2.1.2.2.3.1.2 id properties

PROPERTY	VALUE
Name	id
Id	
Type	objectId
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.2.3.2 Field book**2.1.2.2.3.2.1 book Tree Diagram**

{_id} book
type <i>objectId</i>

2.1.2.2.3.2.2 book properties

PROPERTY	VALUE
Name	book
Id	
Type	objectId
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	book
Foreign field	id
Relationship type	Foreign Key
Default	
Sample	
Comments	

2.1.2.2.3.3 Field student**2.1.2.2.3.3.1 student Tree Diagram**

{_id} student
type <i>objectId</i>

2.1.2.2.3.3.2 student properties

PROPERTY	VALUE
Name	student
Id	
Type	objectId
Description	
Dependencies	
Required	true
Primary key	false
Foreign collection	student
Foreign field	id
Relationship type	Foreign Key
Default	
Sample	
Comments	

2.1.2.2.3.4 Field date_start**2.1.2.2.3.4.1 date_start Tree Diagram**

{dt} date_start
type <i>date</i>

2.1.2.2.3.4.2 date_start properties

PROPERTY	VALUE
Name	date_start
Id	
Type	date
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.2.3.5 Field date_end**2.1.2.2.3.5.1 date_end Tree Diagram**

{dt} date_end
type <i>date</i>

2.1.2.2.3.5.2 date_end properties

PROPERTY	VALUE
Name	date_end
Id	
Type	date
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.2.4 borrow JSON Schema

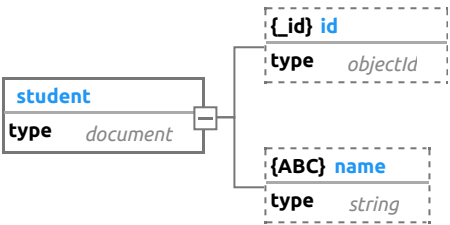
```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "additionalProperties": true,
  "capped": false,
  "properties": {
    "id": {
      "type": "string",
      "pattern": "^[a-zA-F0-9]{24}$"
    },
    "book": {
      "type": "string",
      "pattern": "^[a-zA-F0-9]{24}$"
    },
    "student": {
      "type": "string",
      "pattern": "^[a-zA-F0-9]{24}$"
    },
    "date_start": {
      "type": "string",
      "format": "date-time"
    },
    "date_end": {
      "type": "string",
      "format": "date-time"
    }
  },
  "validationAction": "Warn",
  "validationLevel": "Off",
  "required": [
    "student"
  ]
}
```

2.1.2.2.5 borrow JSON data

```
{
  "id": ObjectId("507f1f77bcf86cd799439011"),
  "book": ObjectId("507f1f77bcf86cd799439011"),
  "student": ObjectId("507f1f77bcf86cd799439011"),
  "date_start": ISODate("2016-04-08T15:06:21.595Z"),
  "date_end": ISODate("2016-04-08T15:06:21.595Z")
}
```

2.1.2.3 Collection student

2.1.2.3.1 student Tree Diagram



2.1.2.3.2 student Properties

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

2.1.2.3.3 student Fields

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
id	objectId	false			
name	string	false			

2.1.2.3.3.1 Field id

2.1.2.3.3.1.1 id Tree Diagram

{_id} id
type <i>objectId</i>

2.1.2.3.3.1.2 id properties

PROPERTY	VALUE
Name	id
Id	
Type	objectId
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.3.3.2 Field name

2.1.2.3.3.2.1 name Tree Diagram

{ABC} name
type <i>string</i>

2.1.2.3.2.2 name properties

PROPERTY	VALUE
Name	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	

2.1.2.3.4 student JSON Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "additionalProperties": false,
  "capped": false,
  "properties": {
    "id": {
      "type": "string",
      "pattern": "^[a-zA-F0-9]{24}$"
    },
    "name": {
      "type": "string"
    }
  },
  "validationAction": "Warn",
  "validationLevel": "Off"
}
```

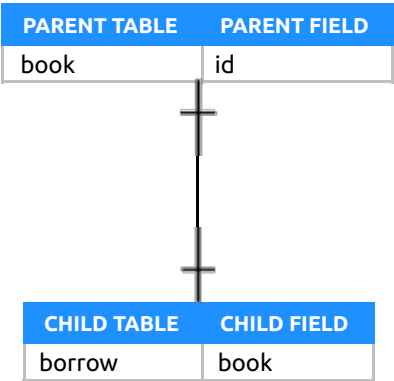
2.1.2.3.5 student JSON data

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

3. RELATIONSHIPS

3.1 Relationship fk book.id to borrow.New Field

3.1.1 fk book.id to borrow.New Field Diagram

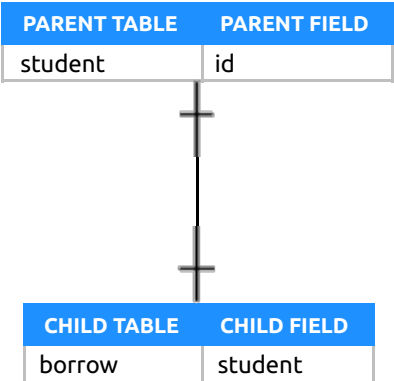


3.1.2 fk book.id to borrow.New Field Properties

PROPERTY	VALUE
Name	fk book.id to borrow.New Field
Description	
Parent Collection	book
Parent field	id
Parent Cardinality	1
Child Collection	borrow
Child field	book
Child Cardinality	1
Comments	

3.2 Relationship fk student.id to borrow.student

3.2.1 fk student.id to borrow.student Diagram



3.2.2 fk student.id to borrow.student Properties

PROPERTY	VALUE
Name	fk student.id to borrow.student
Description	
Parent Collection	student
Parent field	id
Parent Cardinality	1
Child Collection	borrow
Child field	student
Child Cardinality	1
Comments	