

## MongoDB Schema Design

### 1. E-Commerce Store – Product & Orders

#### *User Model*

```
import mongoose from 'mongoose';

const userSchema = new mongoose.Schema({
  name: { type: String, required: true },
  email: { type: String, required: true, unique: true },
  password: { type: String, required: true }
}, { timestamps: true });

const User = mongoose.model('User', userSchema);
```

#### *Product Model*

```
const productSchema = new mongoose.Schema({
  title: { type: String, required: true },
  description: { type: String, required: true },
  price: { type: Number, required: true, min: 0 },
  category: { type: String, required: true },
  stock: { type: Number, required: true, min: 0 }
});

const Product = mongoose.model('Product', productSchema);
```

#### *Order Model*

```
const orderSchema = new mongoose.Schema({
  userId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'User'
},
  products: [{
    productId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'Product' },
    quantity: { type: Number, required: true, min: 1 }
  }],
  totalAmount: { type: Number, required: true, min: 0 },
  orderDate: { type: Date, required: true }
});

const Order = mongoose.model('Order', orderSchema);
```

#### *Review Model*

```
const reviewSchema = new mongoose.Schema({
  userId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'User'
},
  productId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'Product' },
  rating: { type: Number, required: true, min: 1, max: 5 },
  comment: { type: String, required: true }
```

```
});  
  
const Review = mongoose.model('Review', reviewSchema);
```

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## 2. Online Course Platform – Instructors & Students

### *User Model*

```
const courseUserSchema = new mongoose.Schema({  
  name: { type: String, required: true },  
  email: { type: String, required: true, unique: true },  
  role: { type: String, enum: ['student', 'instructor'], required: true }  
}, { timestamps: true });
```

```
const CourseUser = mongoose.model('CourseUser', courseUserSchema);
```

### *Course Model*

```
const lessonSchema = new mongoose.Schema({  
  title: { type: String, required: true },  
  videoURL: { type: String, required: true },  
  duration: { type: Number, required: true, min: 1 }  
});
```

```
const courseSchema = new mongoose.Schema({  
  title: { type: String, required: true },  
  instructorId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'CourseUser' },  
  category: { type: String, required: true },  
  price: { type: Number, required: true, min: 0 },  
  createdAt: { type: Date, required: true },  
  lessons: [lessonSchema]  
});
```

```
const Course = mongoose.model('Course', courseSchema);
```

### *Enrollment Model*

```
const enrollmentSchema = new mongoose.Schema({  
  studentId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'CourseUser' },  
  courseId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'Course' }  
});
```

```
const Enrollment = mongoose.model('Enrollment', enrollmentSchema);
```

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### 3. Event Booking System – Organizers & Attendees

#### *User Model*

```
const eventUserSchema = new mongoose.Schema({
  name: { type: String, required: true },
  email: { type: String, required: true, unique: true },
  role: { type: String, enum: ['organizer', 'attendee'], required: true }
}, { timestamps: true });
```

```
const EventUser = mongoose.model('EventUser', eventUserSchema);
```

#### *Event Model*

```
const eventSchema = new mongoose.Schema({
  title: { type: String, required: true },
  organizerId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'EventUser' },
  location: { type: String, required: true },
  startTime: { type: Date, required: true },
  endTime: { type: Date, required: true },
  capacity: { type: Number, required: true, min: 1 }
});
```

```
const Event = mongoose.model('Event', eventSchema);
```

#### *Booking Model*

```
const bookingSchema = new mongoose.Schema({
  eventId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'Event' },
  attendeeId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'EventUser' },
  bookingDate: { type: Date, required: true }
});
```

```
const Booking = mongoose.model('Booking', bookingSchema);
```

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### 4. Blogging Platform – Authors & Articles

#### *Author Model*

```
const authorSchema = new mongoose.Schema({
  name: { type: String, required: true },
  email: { type: String, required: true },
  bio: { type: String, required: true }
});
```

```
const Author = mongoose.model('Author', authorSchema);
```

### *Article Model*

```
const articleSchema = new mongoose.Schema({
  title: { type: String, required: true },
  content: { type: String, required: true },
  authorId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'Author' },
  tags: [{ type: String }],
  published: { type: Boolean, required: true },
  createdAt: { type: Date, required: true }
});
```

```
const Article = mongoose.model('Article', articleSchema);
```

### *Comment Model*

```
const commentSchema = new mongoose.Schema({
  articleId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'Article' },
  userName: { type: String, required: true },
  commentText: { type: String, required: true },
  postedAt: { type: Date, required: true }
});
```

```
const Comment = mongoose.model('Comment', commentSchema);
```

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## 5. Subscription App – Users & Plans

### *User Model*

```
const subscriptionUserSchema = new mongoose.Schema({
  email: { type: String, required: true },
  name: { type: String, required: true },
  signupDate: { type: Date, required: true }
});
```

```
const SubscriptionUser = mongoose.model('SubscriptionUser', subscriptionUserSchema);
```

### *Plan Model*

```
const planSchema = new mongoose.Schema({
  name: { type: String, required: true },
  price: { type: Number, required: true, min: 0 },
  features: [{ type: String }],
  billingCycle: { type: String, enum: ['monthly', 'yearly'], required: true }
});
```

```
const Plan = mongoose.model('Plan', planSchema);
```

### *Subscription Model*

```
const subscriptionSchema = new mongoose.Schema({
  userId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'SubscriptionUser' },
  planId: { type: mongoose.Schema.Types.ObjectId, required: true, ref: 'Plan' },
  startDate: { type: Date, required: true },
  isActive: { type: Boolean, required: true }
});

const Subscription = mongoose.model('Subscription', subscriptionSchema);
```