

# Mongoose Querying Cheat Sheet (Express + MongoDB)

## 1. Introduction and Installation

Install Node.js, Express, and MongoDB. Initialize your project with `npm init`.

## 2. Directory Structure

Organize files into `routes/`, `views/`, `models/`, and `public/` folders.

## 3. Creating a Static Site

Use Express and EJS to render static HTML with `app.get()` routes.

## 4. Creating a Dynamic Site

Use EJS templates and pass dynamic data from Express using `res.render()`.

## 5. Forms

Use forms in EJS. Use POST method in form and access data using `body-parser`.

## 6. Validating form

Use `express-validator` or custom checks to validate user input.

## 7. Connecting to a database

Connect MongoDB using `mongoose.connect(uri)`. Define schemas using `mongoose.Schema`.

## 8. Querying Db using models -1

Use methods like `find()`, `findById()`, `findOne()`, and conditional filters to get data.

## 9. Querying Db using models -2

Use `lean()`, `select` fields, `apply skip()`, `limit()`, `sort()`, and logical operators.

## 10. Multipage Websites

Use Express Router and multiple views with layout EJS to handle multipage sites.

## 11. CRUD

Use mongoose methods: `create()`, `find()`, `updateOne()`, `deleteOne()` for full CRUD.

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## 12. Pagination

Use `limit()`, `skip()` and page numbers to build pagination in listing routes.

## 13. Session

Use `express-session` to store session data securely in cookies.

## 14. Authentication

Use sessions and login forms with password hashing (`bcrypt`).

## 15. REST API

Use Express to build REST APIs using `app.get/post/put/delete` with JSON.

## 16. API CRUD

Perform CRUD using RESTful routes and MongoDB via `mongoose`.

## 17. API Authentication

Secure APIs using JWT tokens or sessions. Use middleware to verify access.

## 18. Pdf generation

Use libraries like `html-pdf` or `puppeteer` to generate PDF from HTML or data.

## 19. Email sending

Use `nodemailer` to send emails with SMTP or Gmail integration.

## 20. File Upload

Use `multer` middleware to handle file uploads and store files securely.