



MongoDB - Intro



Syllabus MongoDB – Intro

Course Duration: 4 half days (16 academic hours)

MongoDB – What is it?

- MongoDB is an Open-Source NOSQL database.
- MongoDB is document oriented, the data is stored as JSON like objects
- The structure can be changed and is not strict.
- Mainly used with JS but there are other drivers for other languages

Course targets

- Understanding what is MongoDB
- Understanding the difference between RDBMS to NOSQL
- Learn the key concepts and terminology of MongoDB
- Build a real world application
- Be able to program any application alongside with MongoDB

Sessions

Day 1 – Intro

Session	Content	Comments
Intro	<p>A <u>Quick</u> introduction to MongoDB.</p> <p>In this section we will focus on installing and configuring MongoDB so we can start using it.</p>	<ul style="list-style-type: none">▪ What is MongoDB▪ Installation & configuration<ul style="list-style-type: none">○ Install MongoDB○ Install GUI○ Install other tools▪ NodeJS + MongoDB▪ What is JSON▪ Key features<ul style="list-style-type: none">○ JSON Based○ No transactions○ SQL to MongoDB mapping
JS / NodeJS Basics	<p>A <u>Quick</u> overview to verify that everyone has the basic required knowledge to understand the content of this course</p>	<ul style="list-style-type: none">▪ JS basics (functions, objects, modules)▪ NodeJs basics (npm, modules, events)▪ Promises▪ Callbacks (focusing on NodeJS callback)▪ Error handling
MongoDB	<p>Introduction and first experience with MongoDB</p>	<ul style="list-style-type: none">▪ MongoDB vs SQL▪ Terminology<ul style="list-style-type: none">○ Collection○ Scheme○ Model○ Document / Subdocument○ _id / ObjectId▪ Installing MongoDB▪ Installing Mongoose (MongoDB NodeJS Driver)▪ Starting MongoDB + configuration▪ Choose the right GUI<ul style="list-style-type: none">○ Robo3T○ Cosmos DB▪ First hands-on<ul style="list-style-type: none">○ Build our first DB, connect and

Day 2

Working with MongoDB, Core concepts and our first MongoDB application

Session	Content	Comments
MongoDB Core	<u>Deep</u> dive into the core of mongoDB	<ul style="list-style-type: none">▪ mongoose▪ Define Schema▪ Use Model▪ CRUD<ul style="list-style-type: none">○ Create / save / insert○ Read / find○ Update / upsert○ Delete○ Replace▪ Collections / Documents▪ Middlewares▪ isNew▪ Aggregation
	Schema / Model	<ul style="list-style-type: none">▪ Define scheme▪ Indexed▪ Keys▪ ObjectId▪ Types▪ Virtual▪ Validators▪ Hooks▪ Methods / static▪ Working with documents and subdocuments▪ Multiple Schemas, populate, deep populate
	Hands on	<ul style="list-style-type: none">▪ Create photo gallery application which will store data in DB and users will be able to view the data

Day 3

Migrate from SQL to MongoDB

Session	Content	Comments
Queries, operators, Aggregations	"migrate" from sql to MongoDB	<ul style="list-style-type: none">▪ Indexed▪ Defaults▪ Data types▪ Sort▪ Skip▪ Limit▪ Min▪ Max▪ Operators▪ Aggregation / Group▪ Advanced Queries▪ Increment operator▪ count
	Handling Rational data	<ul style="list-style-type: none">▪ Middleware▪ Pre / post vs Stored Procedures▪ Methods▪ Hooks▪ Validations▪ Populate / Nested Records▪ Queries conditions▪ Virtual▪ Lookup (left outer join)▪ Indexes▪ Cursors▪ updateOne▪ UpdateMany
	Hands On	

Day 4

In this final session we will work on your application trying to convert main parts to MongoDB

Session	Content	Comments
	Hands On	