HAPI Philosophy

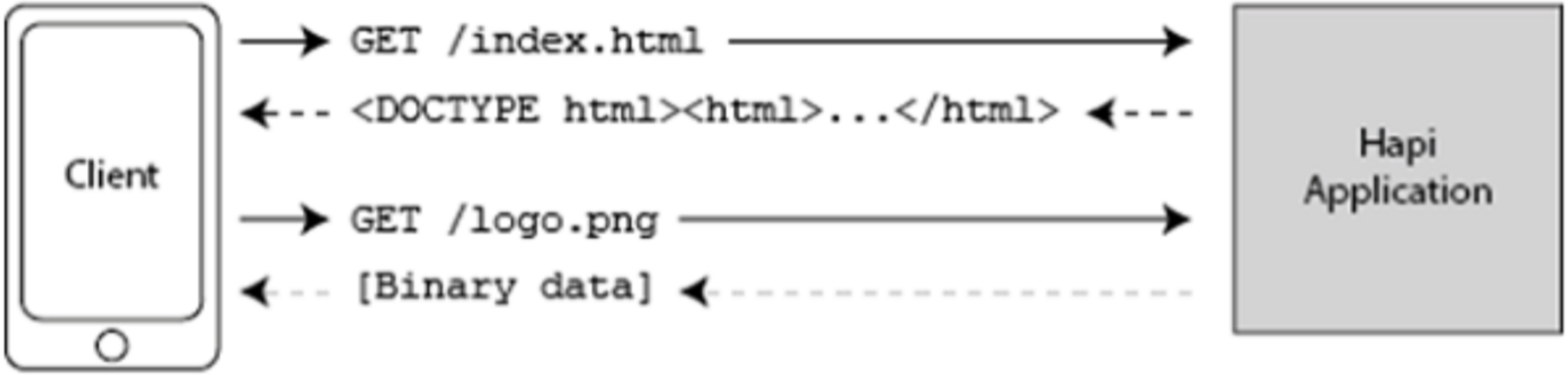
What is HAPI?

- hapi.js is an open source framework for building web applications with Node.
- Can be used for building:
  - Web App
  - API Server

“A rich framework for building applications and services hapi enables developers to focus on writing reusable application logic instead of spending time building infrastructure.”

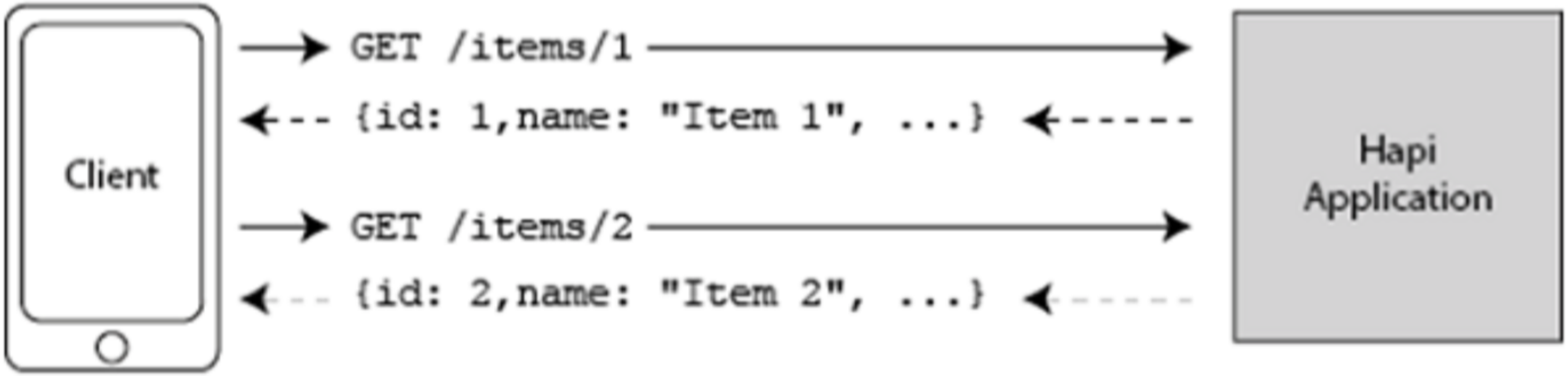
Web Application

- Application delivers a Conventional Web Application
- All data conveyed in HTML format
- Client is a Web Browser

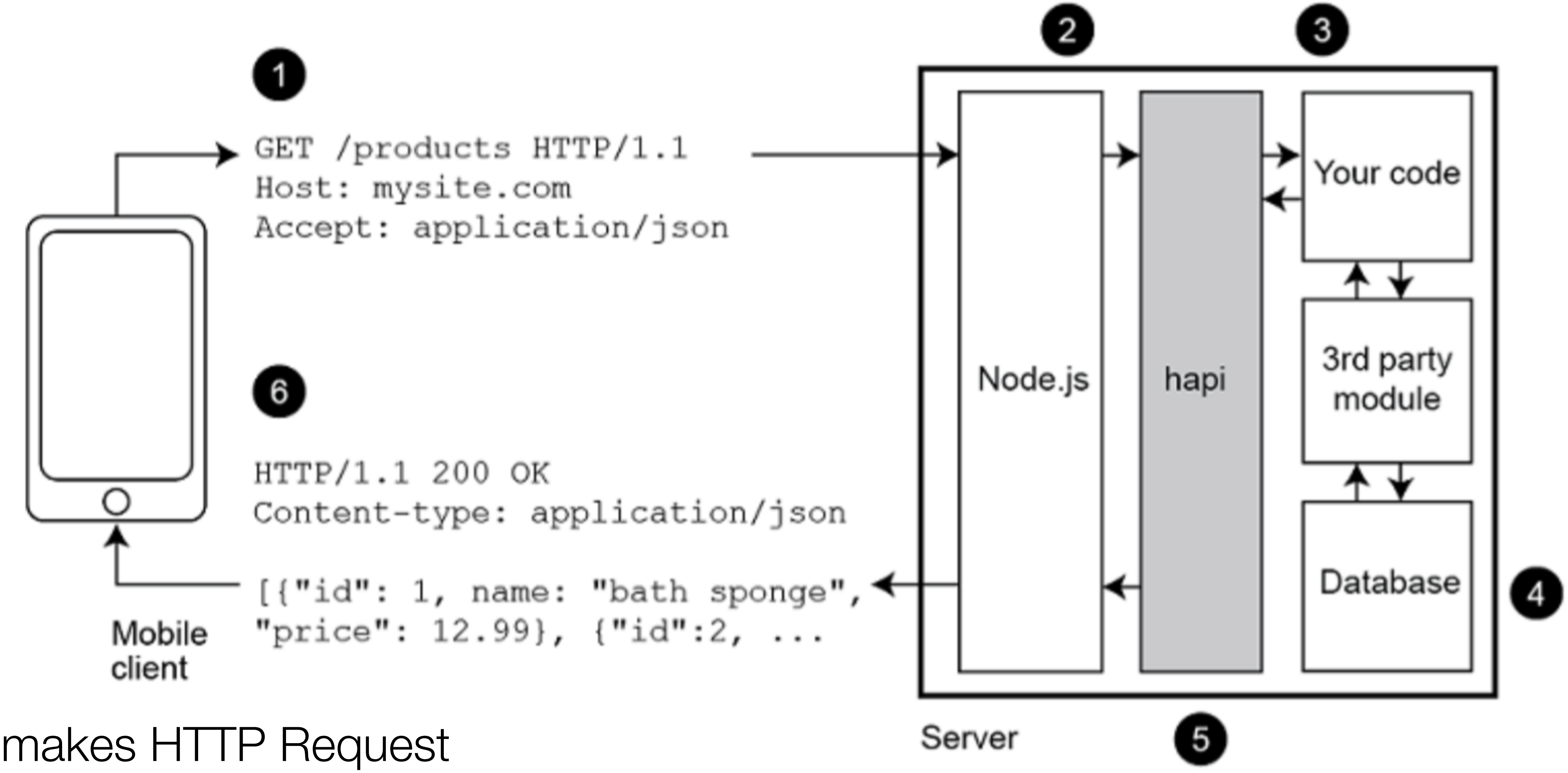


API Server

- Application delivers an Application Programming Interface
- All data conveyed in JSON format
- Client are other programs : mobile, test clients, js client apps



HAPI
&
Node



```
GET /products HTTP/1.1
Host: mysite.com
Accept: application/json
```

```
HTTP/1.1 200 OK
Content-type: application/json

[{"id": 1, name: "bath sponge",
"price": 12.99}, {"id":2, ...
```

1. Client makes HTTP Request

2. Request received by Node and forwarded to api

3. Hapi authenticates user and routes request to correct function

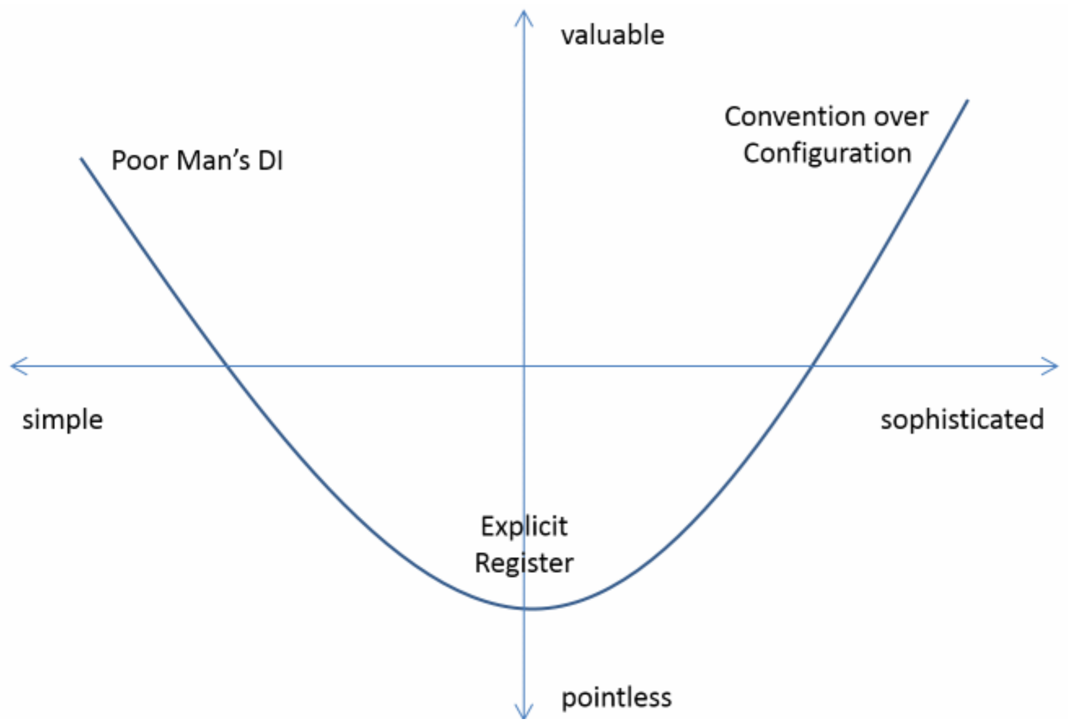
4. Application logic executes, retrieves data from database

5. Data passed to Hapi reply function. Hapi validates, caches data.

6. Data transmitted over HTTP by node to client

Why Choose Hapi?

- Its Node
- Its Modular
- It favours Convention over Configuration (or Code)



Why Hapi? - its Node

- Node is strong for building APIs.
- JSON has become the de facto standard encoding for transferring data over the web.
- Working with JSON in JavaScript is a natural choice.
- The low- level implementation details of Node’s runtime let you scale your API to thousands of concurrent users without using expensive hardware.

Why Hapi? - Modularity

- Hapi plugin system lets you join together isolated chunks of applications like Lego and have them run as a single application.

- These individual chunks or plugins can be developed, tested and distributed (as npm packages) totally independently, maybe by different developers or teams in a large organisation

- Plugins also let developers create functionality to share with the entire open- source community.

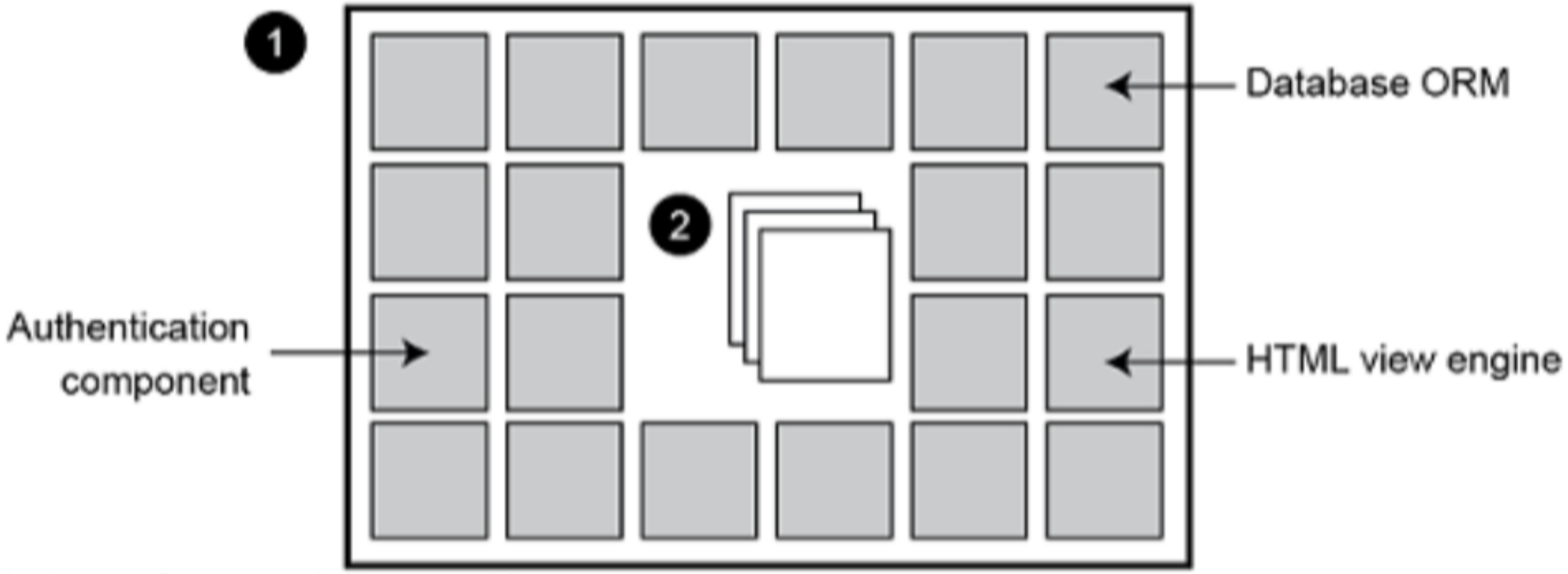
Why Hapi? - Convention over Configuration

- Configuration-over-code means that there aren’t lots of methods to remember to perform commonly required tasks

- Instead complex behaviours are wrapped up into simple configuration-driven APIs.

- You don’t need to start learning all these configuration options until you really need them because sensible defaults are always chosen for you by the framework

Types of Framework: Monolithic



- All Encompassing - Highly Opinionated

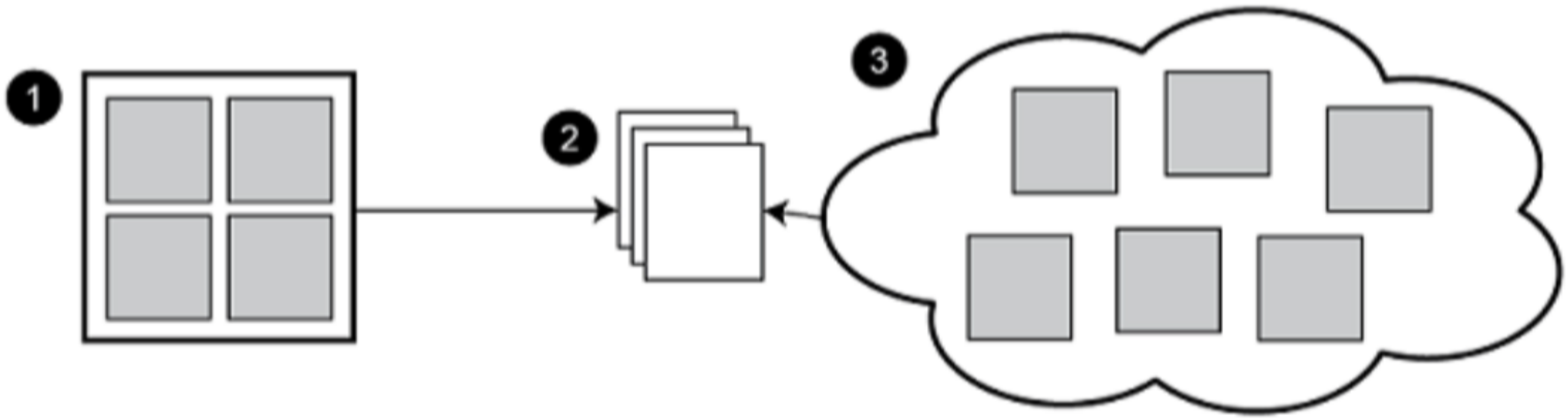
1. Large Application Library with Many Components

2. Application is tightly bound to the framework and may be challenging to use external software

Types of Framework: MicroFramework

- Lightweight, thin wrappers.

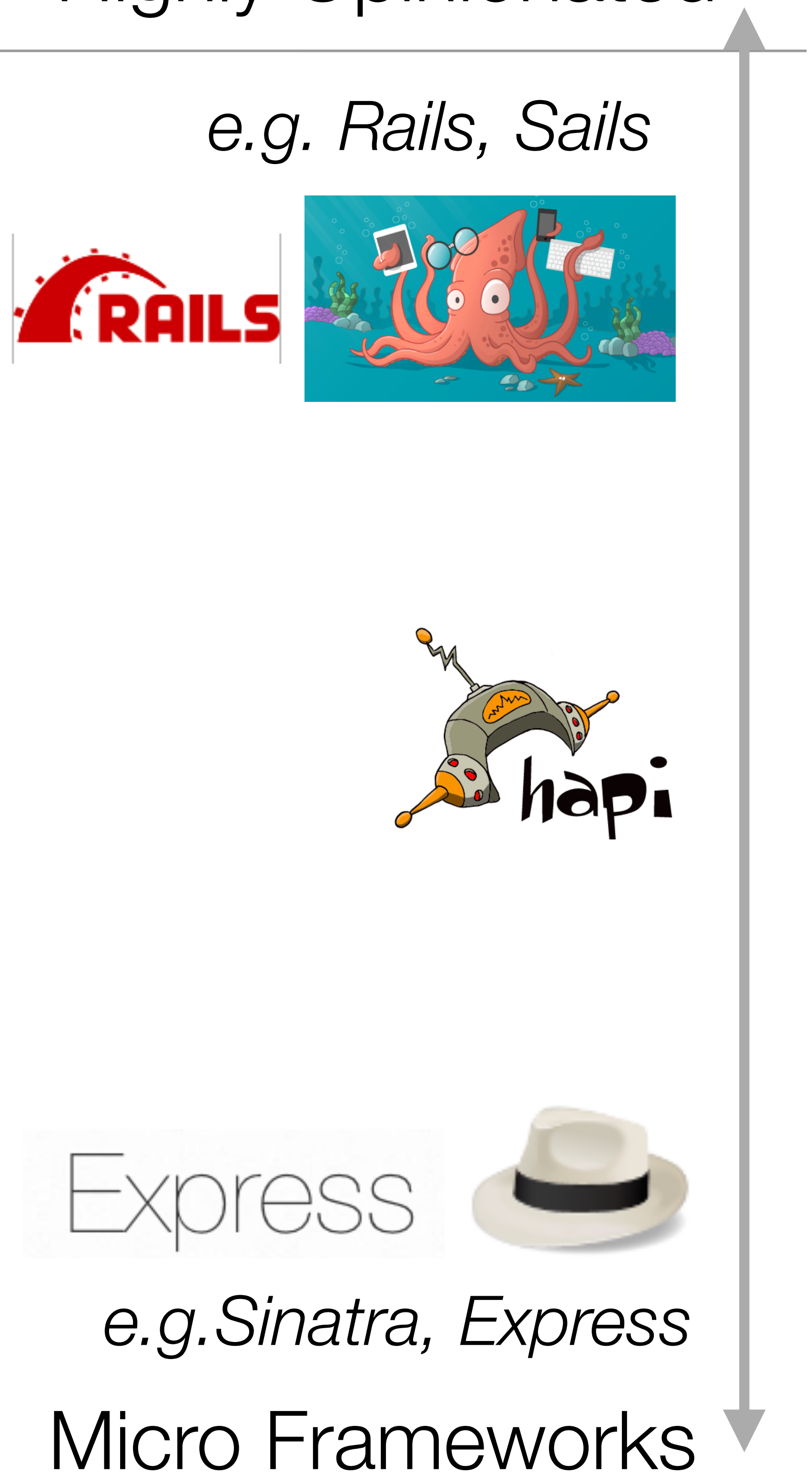
1. Small framework library with few components
2. Application is independent of framework
3. Application relies on many 3rd party libraries



Framework Spectrum

- Highly Opinionated frameworks require you to do things in a predictable and consistent way

- MicroFrameworks are often thin wrappers around some native capability of the platform to offer convenient APIs for common tasks



All Encompassing - Highly Opinionated

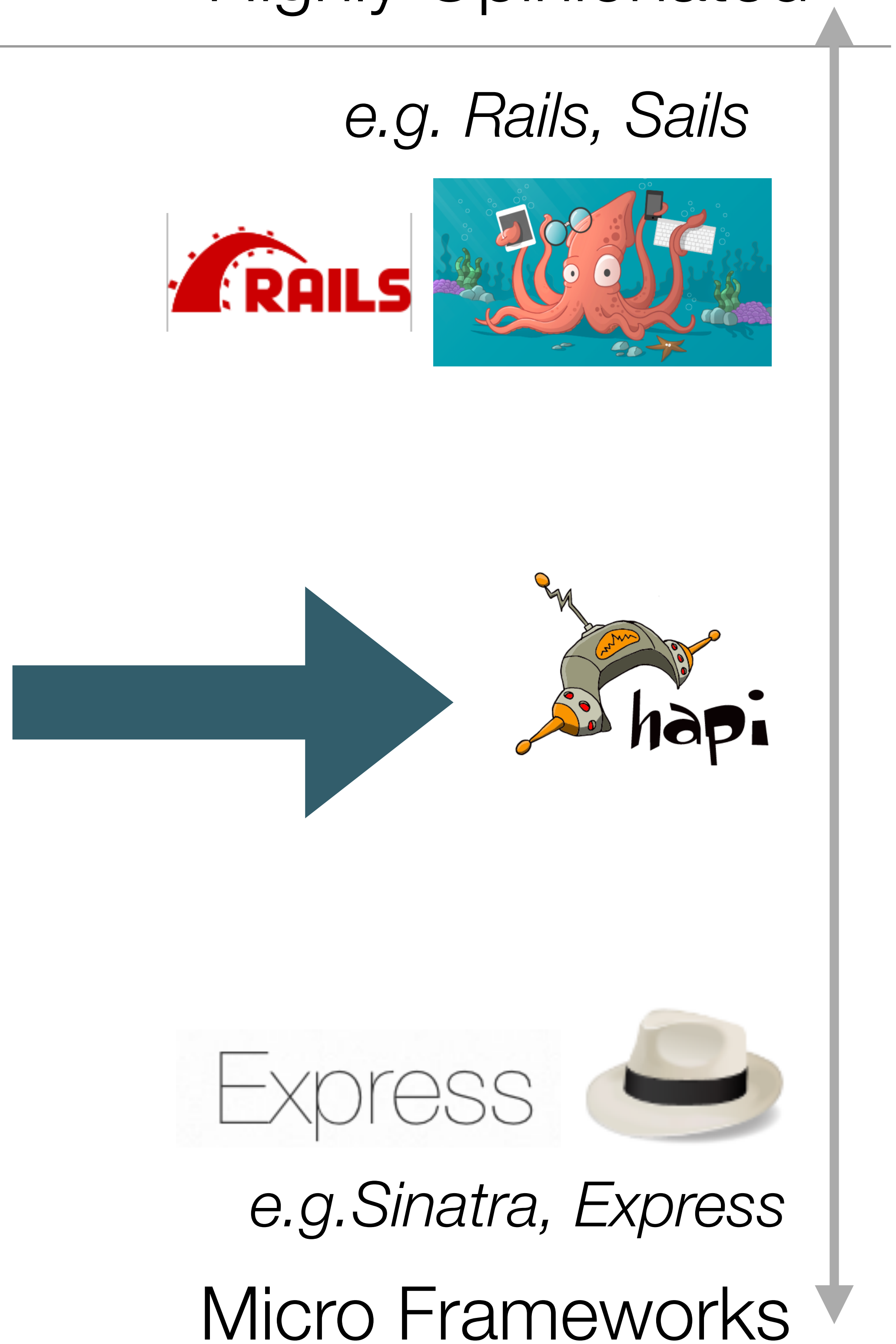
e.g. Rails, Sails

e.g.Sinatra, Express

Micro Frameworks - Lightweight

Hapi Philosophy

- Hapi threads a middle line between offering rich functionality out of the box while staying unimposing.
- The core library of hapi provides only the essential features that you will need when creating almost any modern web application.



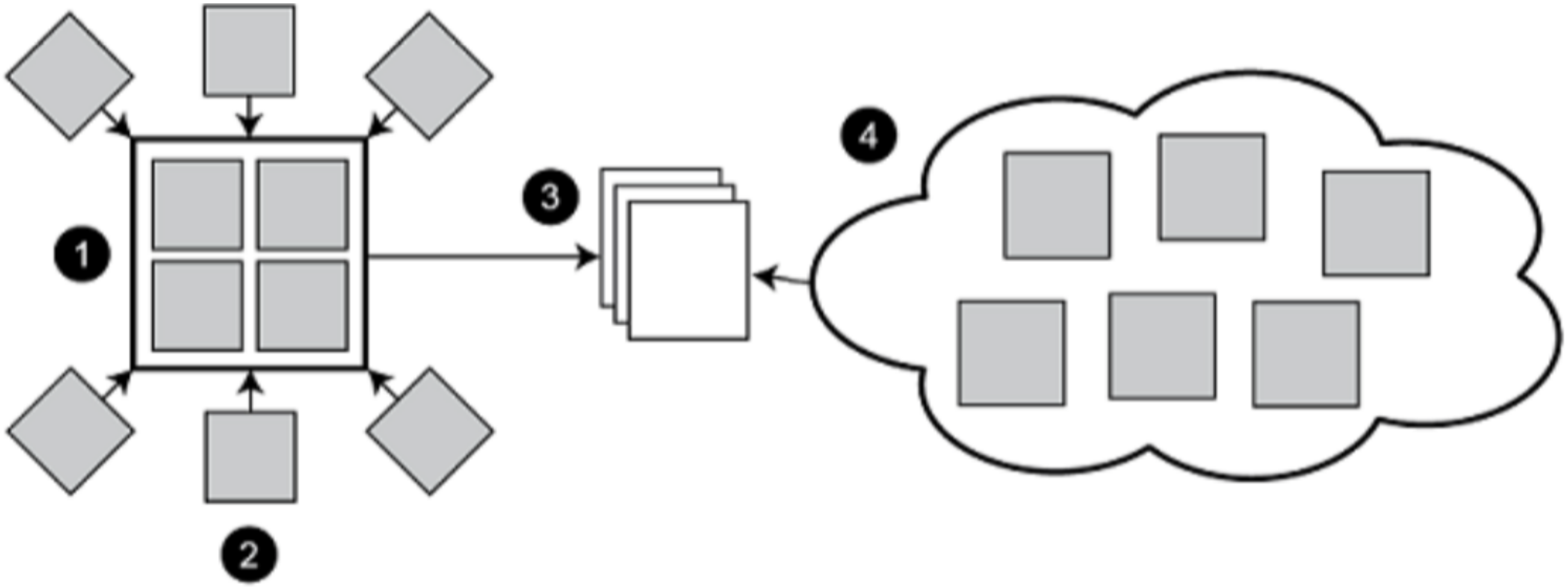
All Encompassing - Highly Opinionated

e.g. Rails, Sails

e.g.Sinatra, Express

Micro Frameworks - Lightweight

Hapi Approach



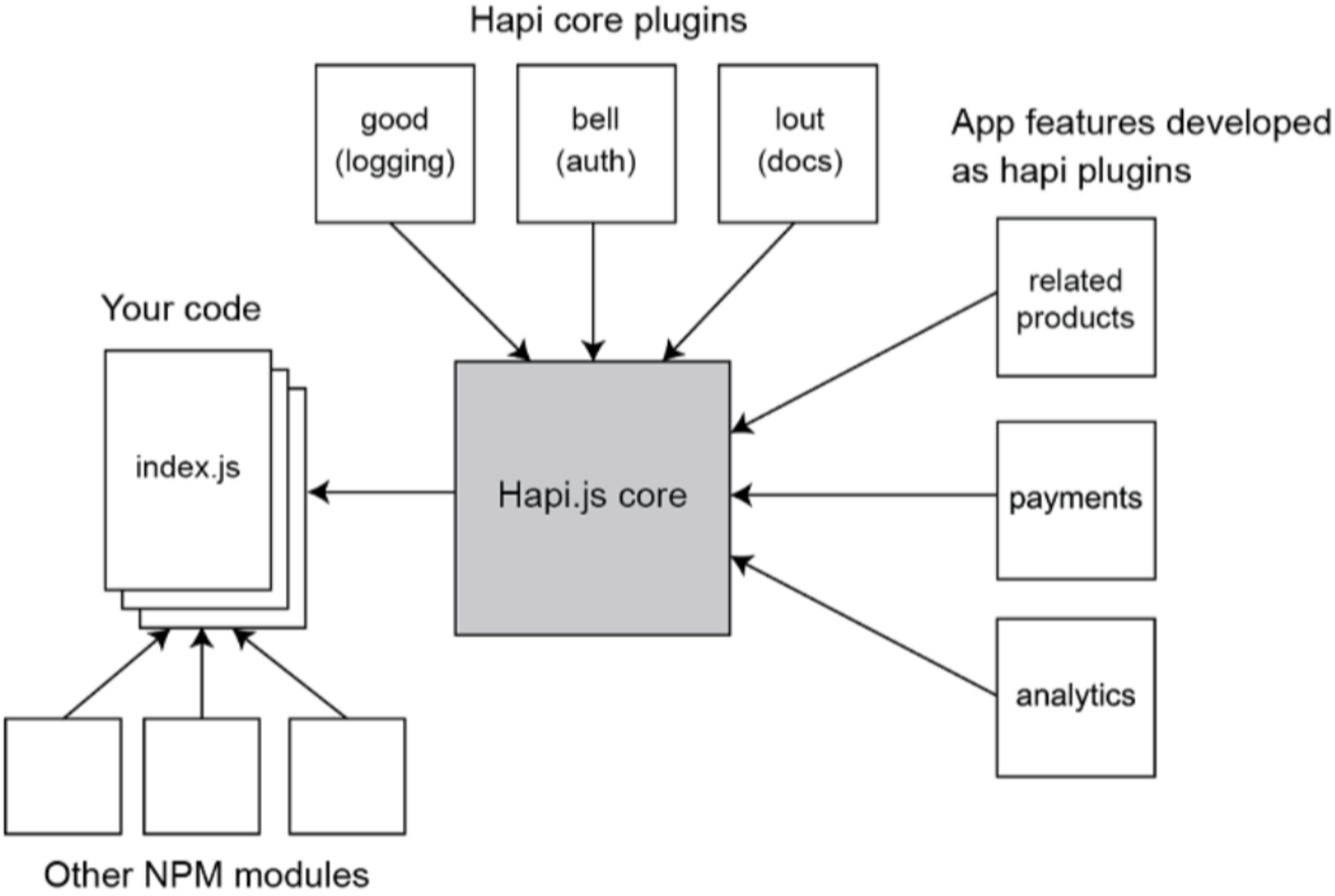
1. Small framework with few components

2. Frameworks core functionality extended with configurable official plugins

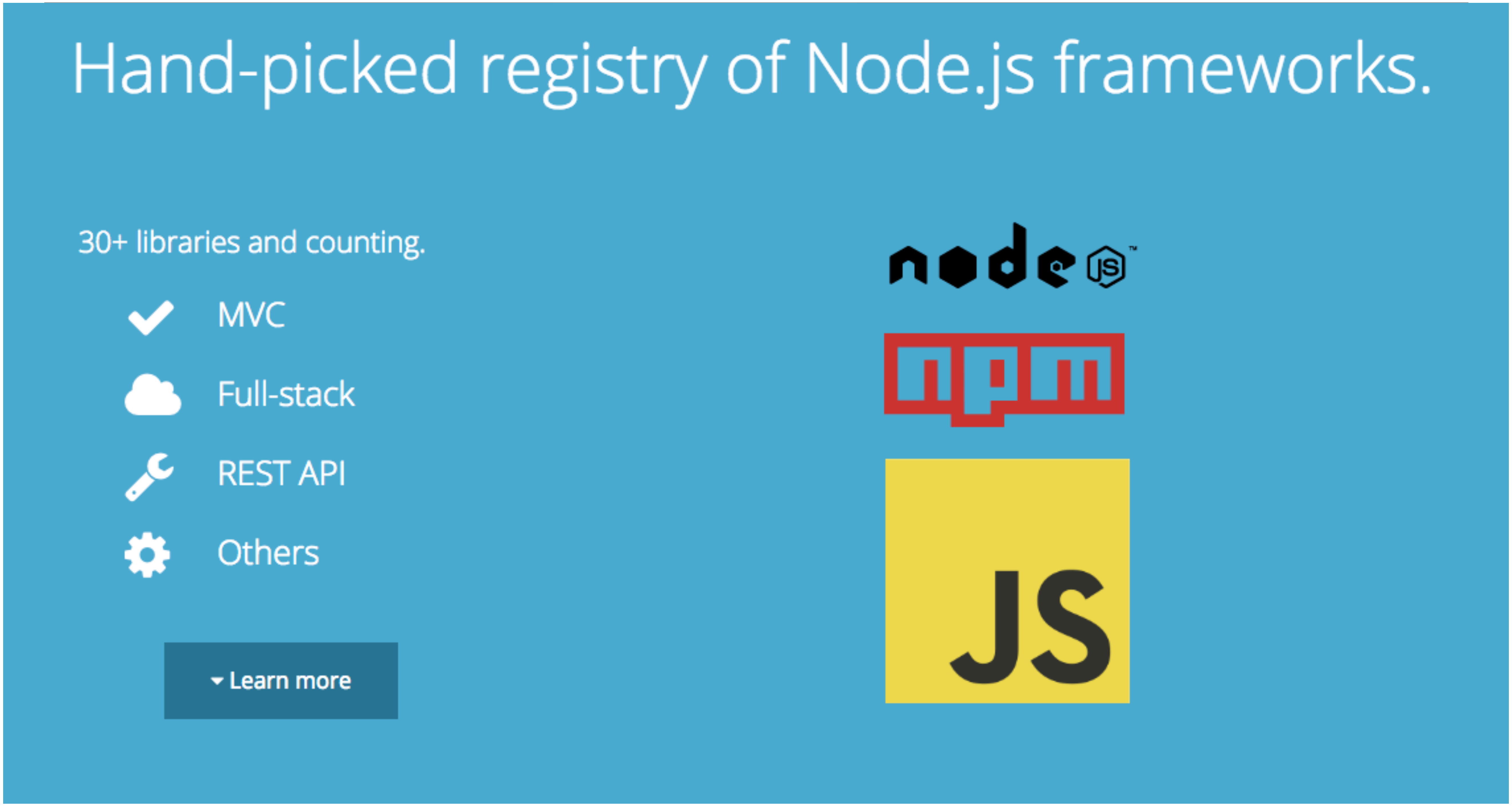
3. Application is independent of framework

4. Application relies on 3rd party libraries

Example Hapi Application Structure



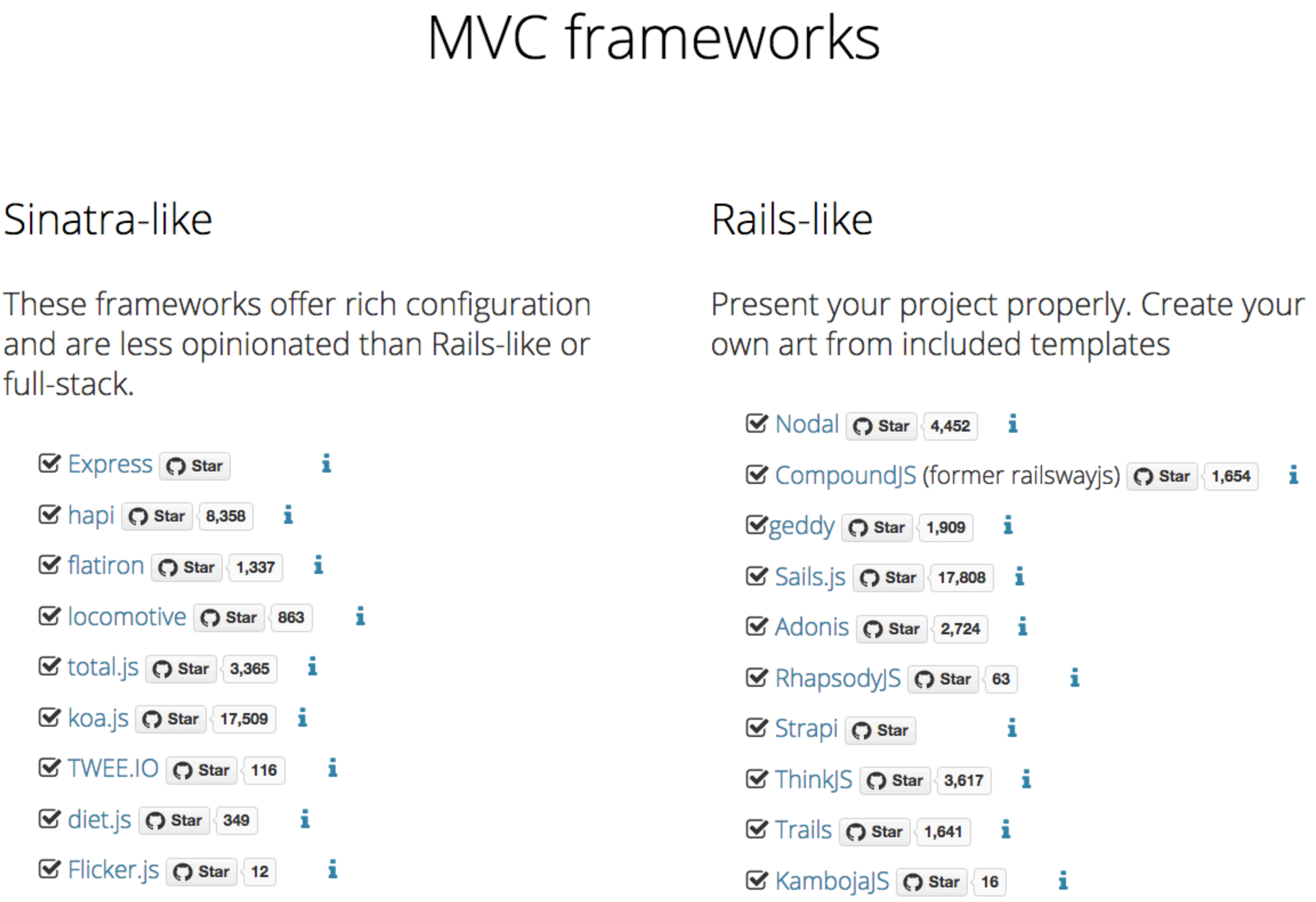
http://nodeframework.com/



Hand-picked registry of Node.js frameworks.

30+ libraries and counting.

- ✓ MVC
- ☁ Full-stack
- REST API
- ⚙ Others



MVC frameworks

Sinatra-like

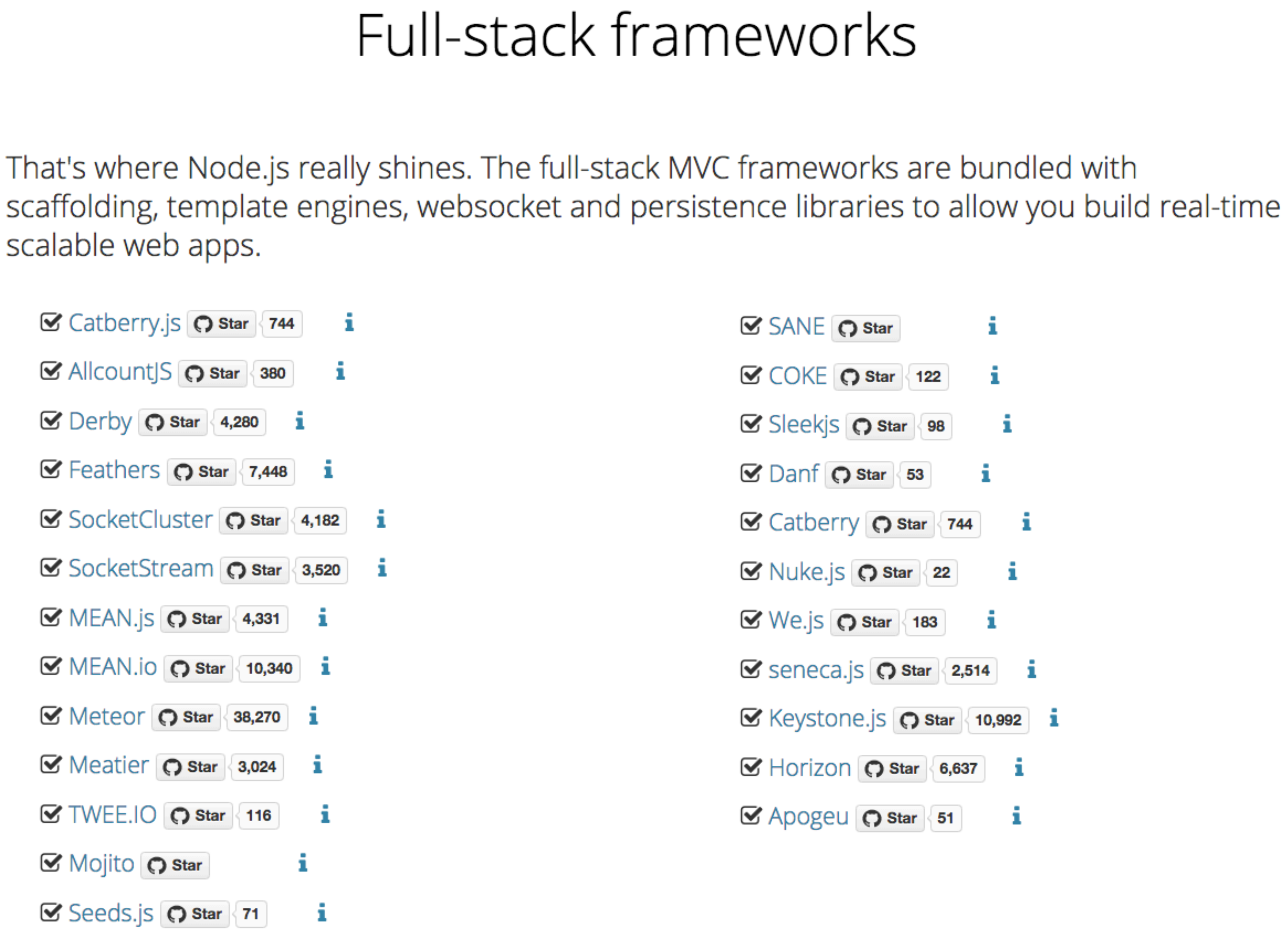
These frameworks offer rich configuration and are less opinionated than Rails-like or full-stack.

☑ Express	Star		ℹ
☑ hapi	Star	8,358	ℹ
☑ flatiron	Star	1,337	ℹ
☑ locomotive	Star	863	ℹ
☑ total.js	Star	3,365	ℹ
☑ koa.js	Star	17,509	ℹ
☑ TWEE.IO	Star	116	ℹ
☑ diet.js	Star	349	ℹ
☑ Flicker.js	Star	12	ℹ

Rails-like

Present your project properly. Create your own art from included templates

☑ Nodal	Star	4,452	ℹ
☑ CompoundJS (former railswayjs)	Star	1,654	ℹ
☑geddy	Star	1,909	ℹ
☑ Sails.js	Star	17,808	ℹ
☑ Adonis	Star	2,724	ℹ
☑ RhapsodyJS	Star	63	ℹ
☑ Strapi	Star		ℹ
☑ ThinkJS	Star	3,617	ℹ
☑ Trails	Star	1,641	ℹ
☑ KambojaJS	Star	16	ℹ



Full-stack frameworks

That's where Node.js really shines. The full-stack MVC frameworks are bundled with scaffolding, template engines, websocket and persistence libraries to allow you build real-time scalable web apps.

☑ Catberry.js	Star	744	ℹ
☑ AllcountJS	Star	380	ℹ
☑ Derby	Star	4,280	ℹ
☑ Feathers	Star	7,448	ℹ
☑ SocketCluster	Star	4,182	ℹ
☑ SocketStream	Star	3,520	ℹ
☑ MEAN.js	Star	4,331	ℹ
☑ MEAN.io	Star	10,340	ℹ
☑ Meteor	Star	38,270	ℹ
☑ Meatier	Star	3,024	ℹ
☑ TWEE.IO	Star	116	ℹ
☑ Mojito	Star		ℹ
☑ Seeds.js	Star	71	ℹ
☑ SANE	Star		ℹ
☑ COKE	Star	122	ℹ
☑ Sleekjs	Star	98	ℹ
☑ Danf	Star	53	ℹ
☑ Catberry	Star	744	ℹ
☑ Nuke.js	Star	22	ℹ
☑ We.js	Star	183	ℹ
☑ seneca.js	Star	2,514	ℹ
☑ Keystone.js	Star	10,992	ℹ
☑ Horizon	Star	6,637	ℹ
☑ Apogeu	Star	51	ℹ

REST API frameworks

For those who use rich-client/front-end MVC frameworks (or not) and just need to spin up a fast Node.js REST API server.

☑ Ivy Star 6 ℹ

☑ Restocat Star 10 ℹ

☑ actionHero.js Star ℹ

☑ Frisby Star 1,053 ℹ

☑ restling Star 54 ℹ

☑ restify Star ℹ

☑ restmvc Star 160 ℹ

☑ percolator Star 121 ℹ

☑ LoopBack Star 9,813 ℹ

☑ Fortune.js Star ℹ

☑ facet Star 0 ℹ

☑ Raddish Star 3 ℹ

☑ Restberry Star ℹ

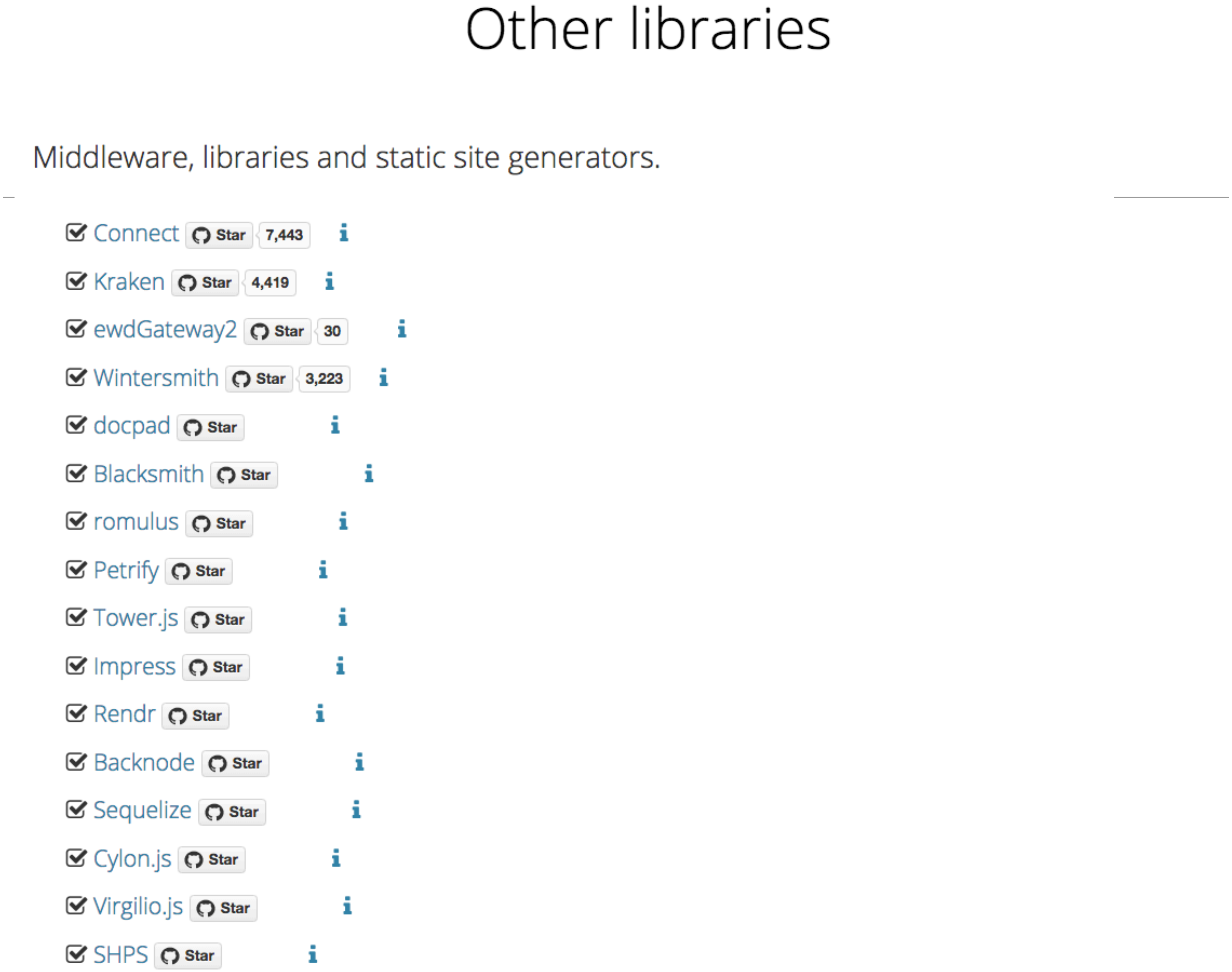
☑ Gugamarket Star 17 ℹ

☑ Nest Star ℹ

☑ microlet Star 0 ℹ

☑ Moleculer Star 374 ℹ

Other libraries



Middleware, libraries and static site generators.

- ☑ Connect Star 7,443 ℹ
- ☑ Kraken Star 4,419 ℹ
- ☑ ewdGateway2 Star 30 ℹ
- ☑ Wintersmith Star 3,223 ℹ
- ☑ docpad Star ℹ
- ☑ Blacksmith Star ℹ
- ☑ romulus Star ℹ
- ☑ Petrify Star ℹ
- ☑ Tower.js Star ℹ
- ☑ Impress Star ℹ
- ☑ Rendr Star ℹ
- ☑ Backnode Star ℹ
- ☑ Sequelize Star ℹ
- ☑ Cylon.js Star ℹ
- ☑ Virgilio.js Star ℹ
- ☑ SHPS Star ℹ