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# MVC and Web Applications

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# Express.js

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# What is a web application

A web application is website based software that has both front and back end capabilities.

Can show static files as well as store and manipulate user data.

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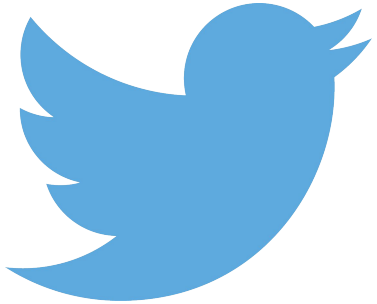
# Static Content Vs Dynamic Content



Static content is content that always stays the same on a website.

Dynamic content is content that is updated based on the actions of users of the web application.

Ex twitter:

The twitter logo, and menu items are static content - no matter when you log in they are the same.

Tweets are always changing and are thus dynamic content.

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# Types of Dynamic content

Items pulled from a database thru a web API.

JS application will utilize a developed API to access a database and either query data to the user's interface, or input data into the database.

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# How do we load dynamic content from?

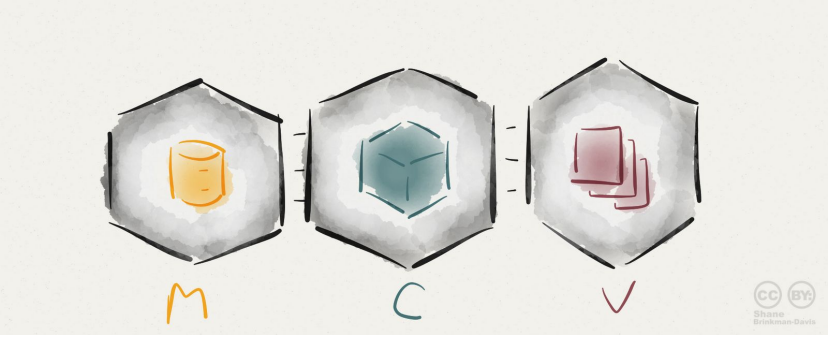
Dynamic content typically comes from one of two places.

The first is a database linked to your site, this is usually done with non-relational databases such as mongodb in the case of JS applications.

The next place is data which is pulled as JSON through third party API’s

We are now going to be setting up a StackOverflow search for our JS page which will generate content based on your search

# What are the parts of a web application?




Web applications typically are developed on what is called MVC frameworks of which Express is one.

MVC frameworks have three parts - Models, Views, and Controllers.

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# Models

Models create the structure of the data we are storing on our database, to be retrieved later.

This creates a structure to the data and allows the application to know what data is what and where to display it.

Example - Typically a user model will have a user name, user email, user profile image etc

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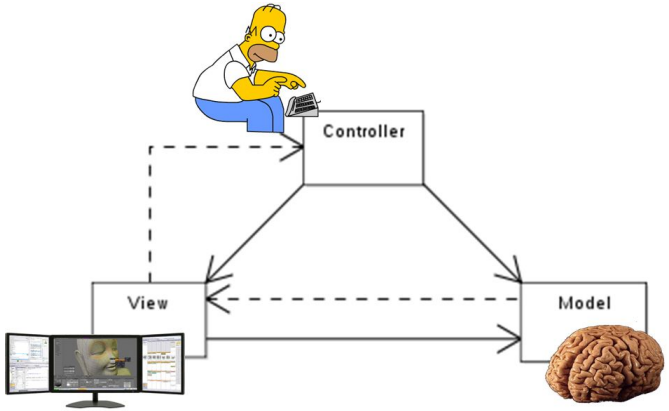
# Controllers




Controllers we have already seen to some extent.

Controllers are code that specifies what data is sent to the views. In our current example a control tells the view which dynamic content to insert into the given template.

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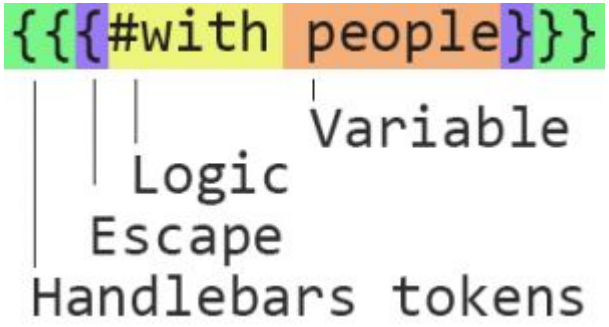
# Views




Views exist as extensions of html, allowing programmers to load html content dynamically, and avoid repeating code by using page templates, and header and footer templates which can then be extended.

In Express common templating engines are Jade and HandleBars, we will be using Handlebars in the following exercises.

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# URL Routing

URL routing functionality allows users to tell their application exactly which controllers and subsequent views are to be triggered and a request is made for a specific url.

When user makes a get request to home page, the home or index function on the controller file, or app.js file is triggered, and the proper view and dictionaries are loaded into the application.