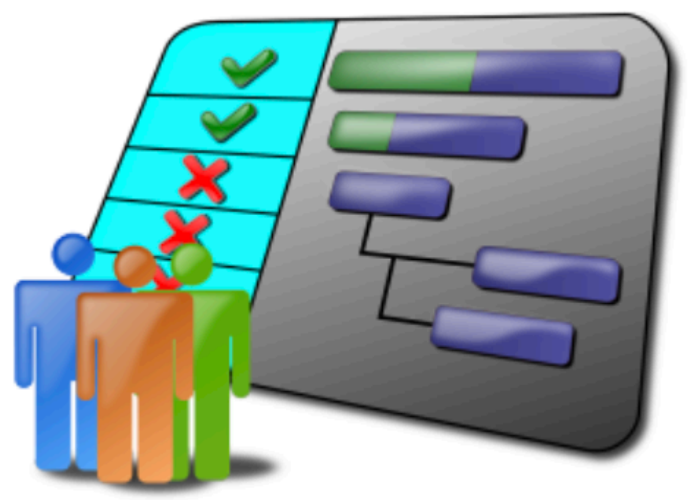
ICT Skills 1 Module Overview

Module Topics

Assignments

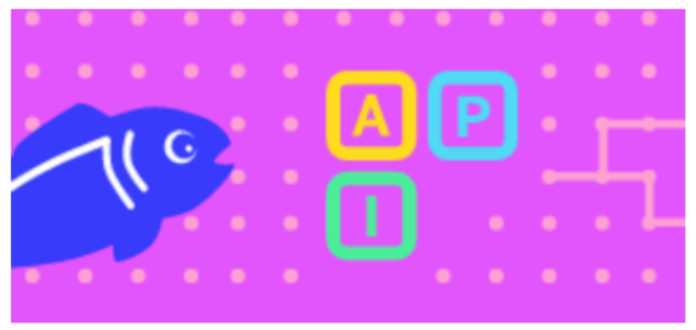
Assignment specification for the module

0: Overview



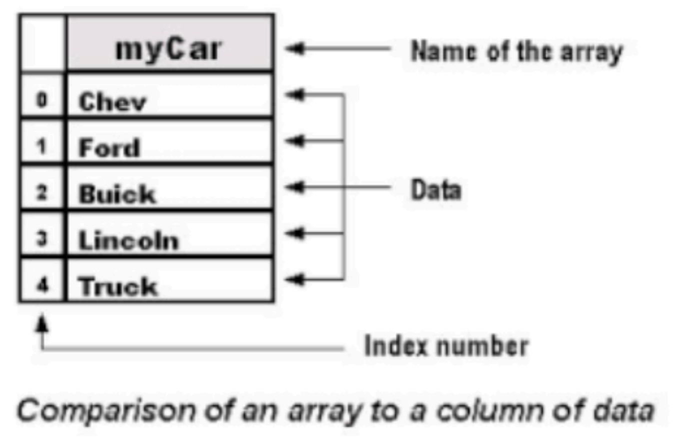
Overview of the module + introduction to the Glitch platform

1: Introducing Javascript



An introduction to the very basics of the Javascript Language

2: Javascript Arrays

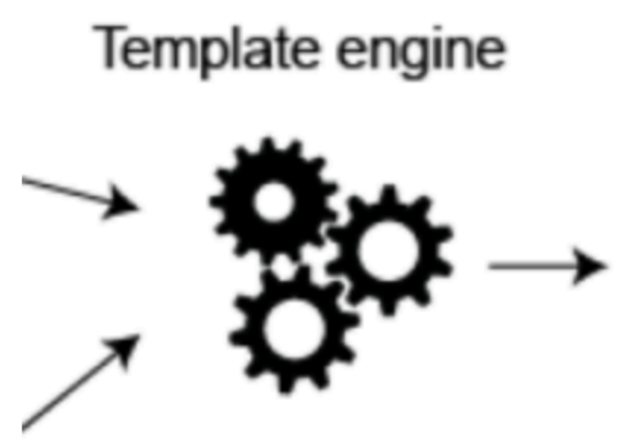


Exploring Javascript arrays in detail

3: Web Applications

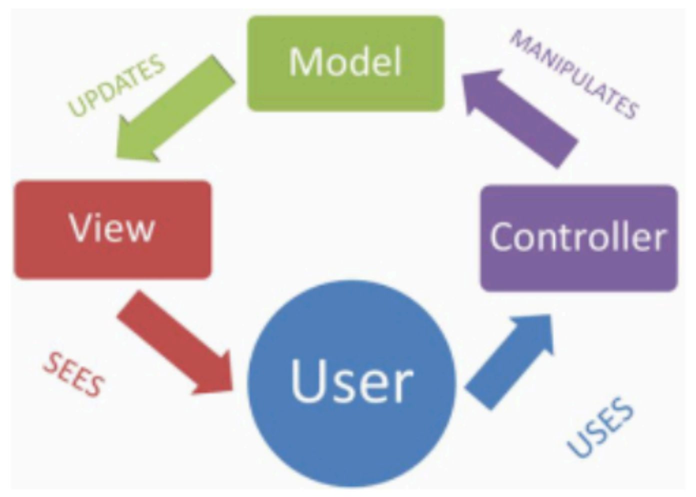
Build your first Glitch app, a simple static playlist web site.

4: Templates & Routes



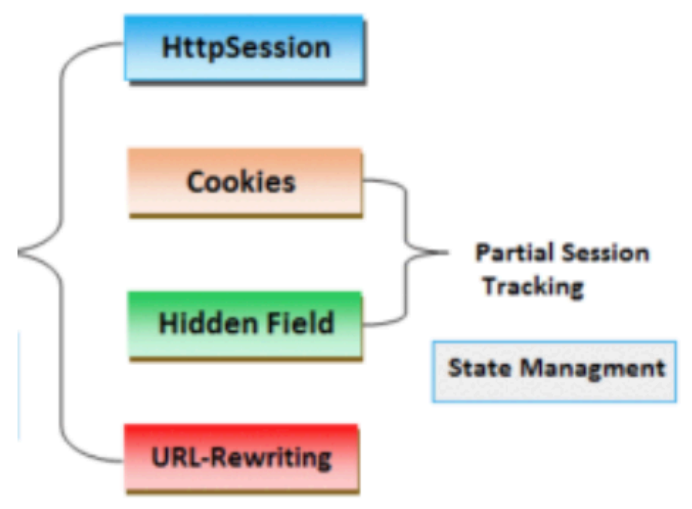
Explore templating in more detail. Enhanced the routing behaviour

5: Model View Controller



Explore MVC as implemented in Playlist

6: Sessions



In order to implement user account management, sessions provide a mechanism for identifying specific users

Introducing Glitch

Introducing Glitch

Welcome to the Gomix BETA

Your Project

Made by Fog Creek

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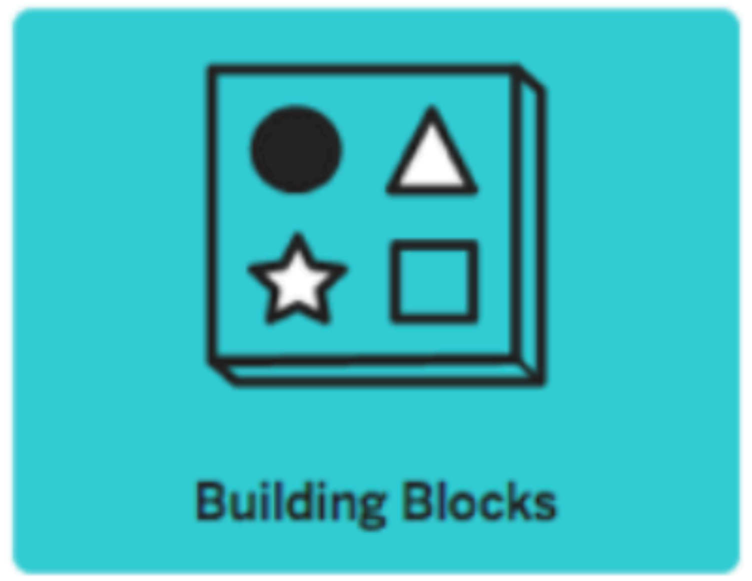
What is is, what role it plays, why was it built.

Glitch Tour



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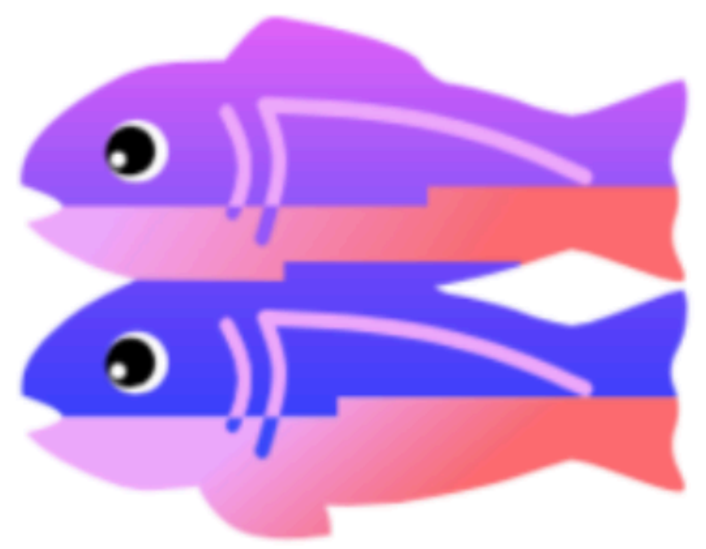
A look at at the components of a glitch project. Also types of project will we build?

Lab-1 Glitch Intro



Create, modify and view your first Gomix project.

Introducing Javascript

JS Introduction

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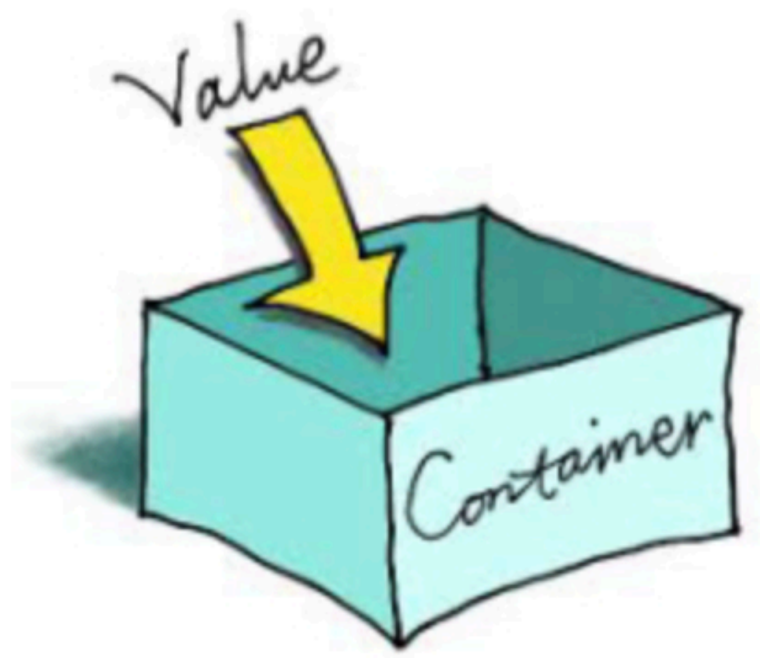
Place javascript in its proper context, and explore its relationship to the browser.

Variables



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Explore the javascript variables, including the basic types, conversion and usage

Const, Let & Objects

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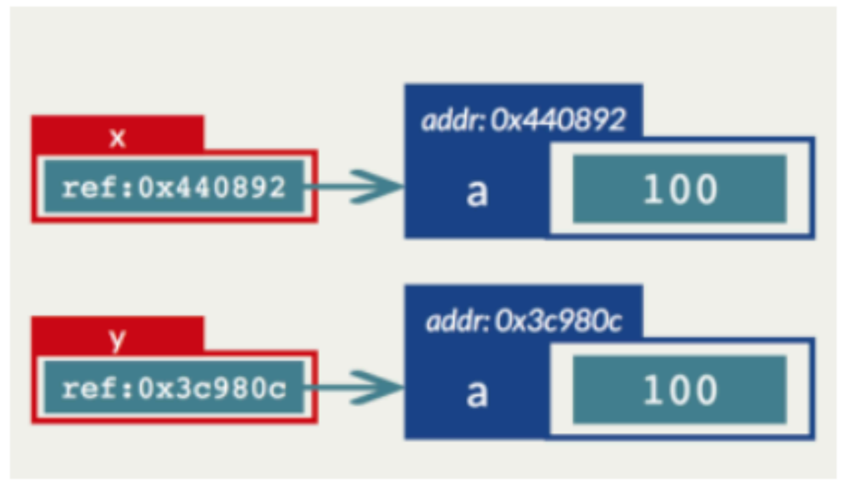
Using const & let. Declaring and using objects.

Lab-2 JS Intro

Background & Tools, Variables & Boolean Logic

Javascript Variables, Objects & Methods

Variables & Objects Review



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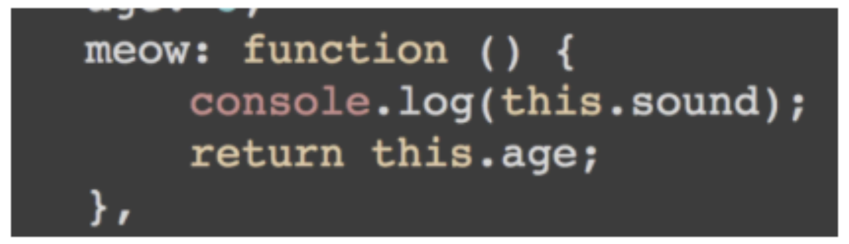
A concise tour of the structure of variables & objects in Javascript

Methods & Arrays Review



```
    meow: function () {
        console.log(this.sound);
        return this.age;
    },
```

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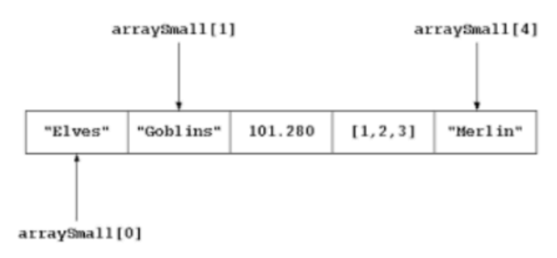
A concise look at methods & Arrays

Javascript Arrays

Arrays: Basics



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Creating, accessing, adding to and removing from arrays.

Array Methods

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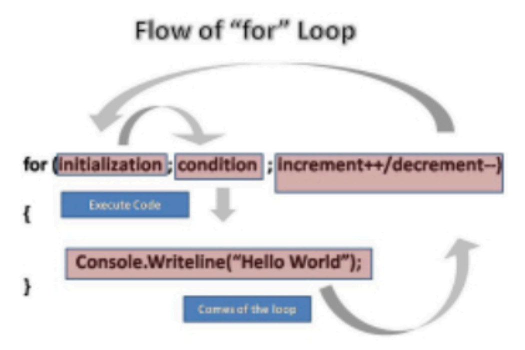
Exploring length, slice, concat, join, indexOf, lastIndexOf

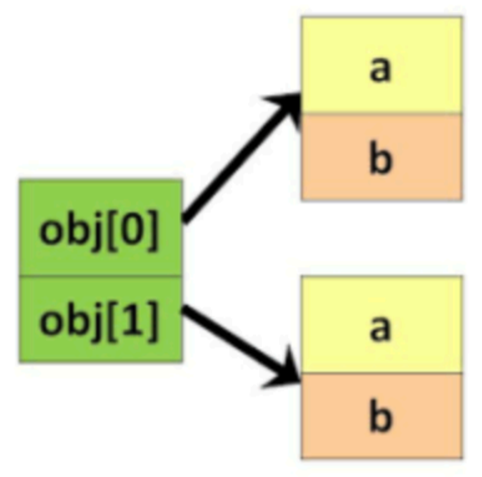
Array Iteration


Flow of "for" Loop
for (initialization ; condition ; increment++/decrement--)
{
Execute Code
Console.Writeline("Hello World");
}
Comes of the loop

PLAY VIDEO

Using for, while and do-while to iterate over an array

Arrays of Objects



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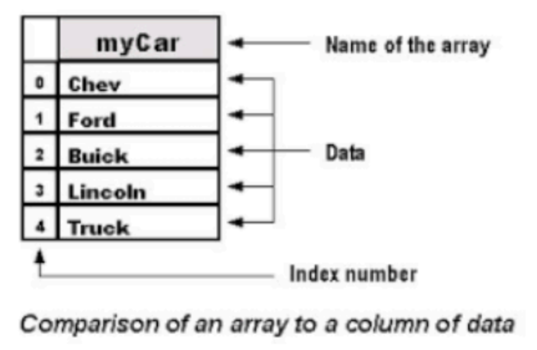
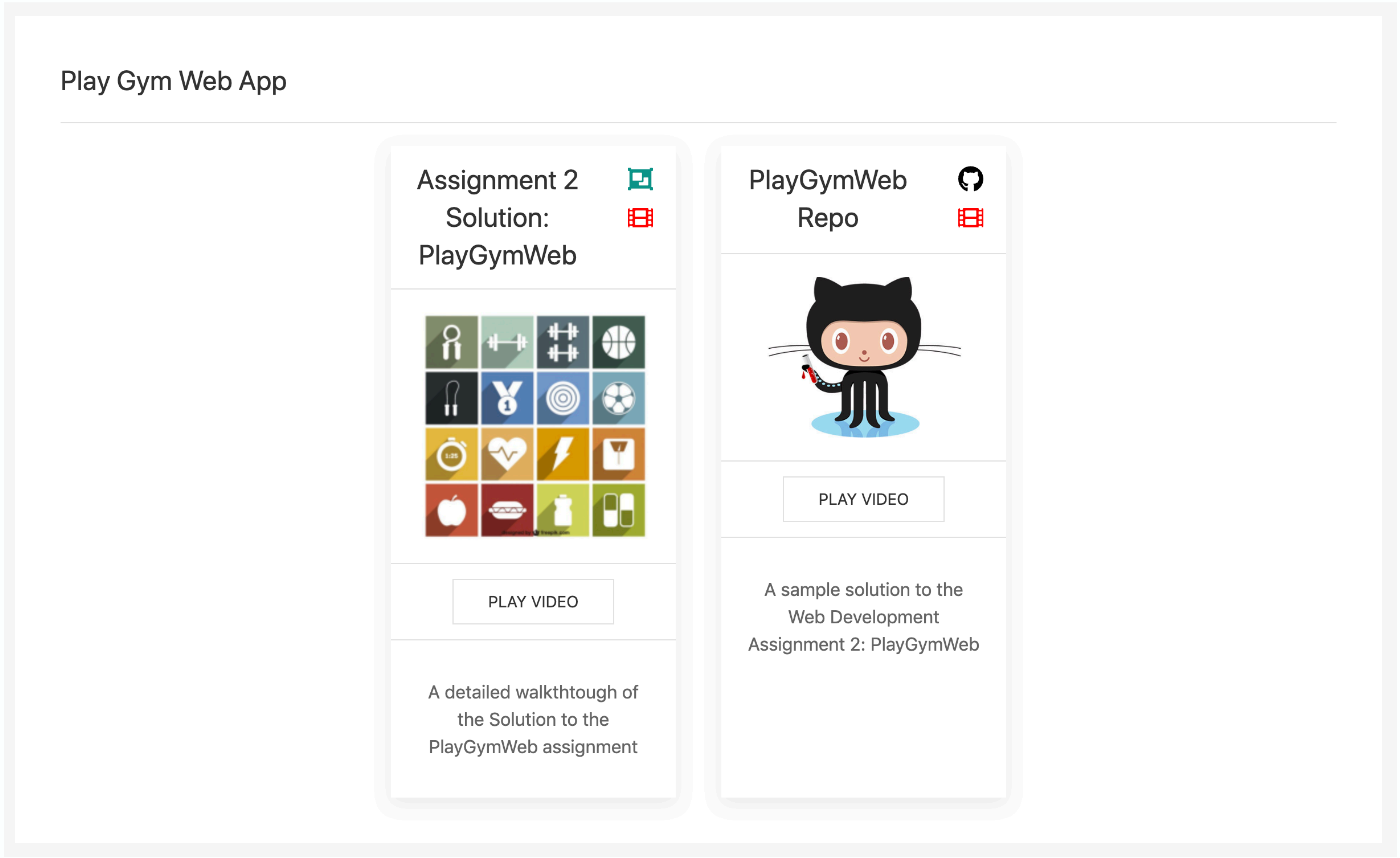
Arrays of more complex data structures, including nested objects.

Lab-3 JS Arrays



Comparison of an array to a column of data

Array Basics, Array Methods & Iteration



Play Gym Web App

Assignment 2 Solution: PlayGymWeb

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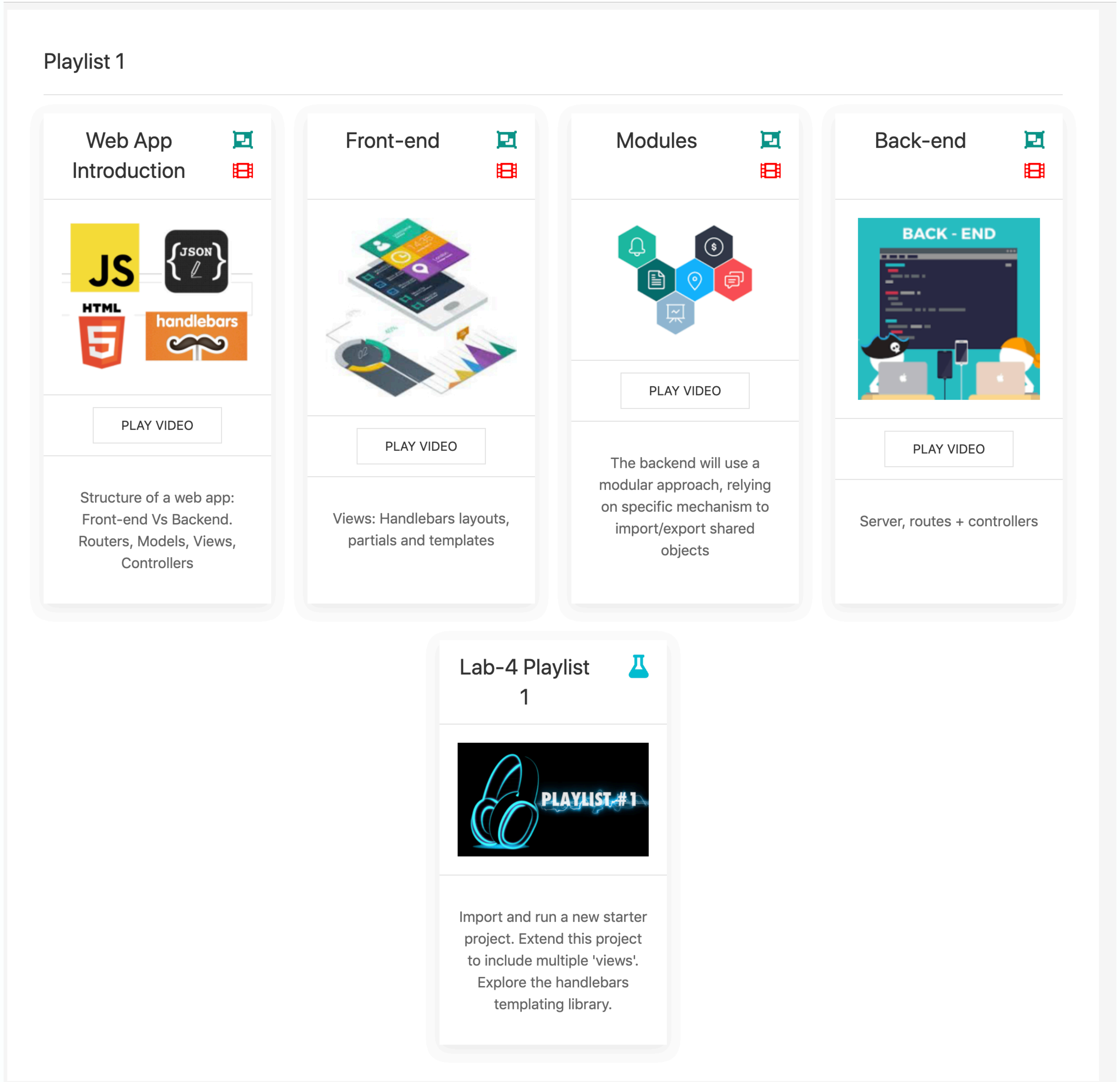
A detailed walkthtough of the Solution to the PlayGymWeb assignment

PlayGymWeb Repo

PLAY VIDEO

A sample solution to the Web Development Assignment 2: PlayGymWeb



Playlist 1

Web App Introduction

PLAY VIDEO

Structure of a web app: Front-end Vs Backend. Routers, Models, Views, Controllers

Front-end

PLAY VIDEO

Views: Handlebars layouts, partials and templates

Modules

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The backend will use a modular approach, relying on specific mechanism to import/export shared objects

Back-end

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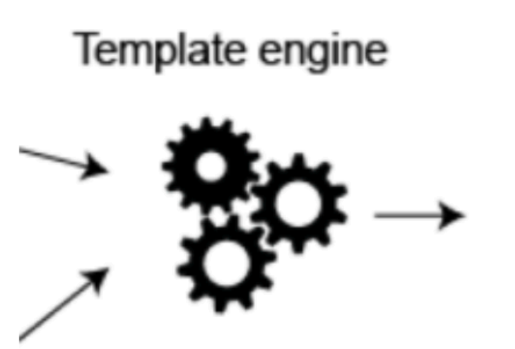
Server, routes + controllers

Lab-4 Playlist 1

Import and run a new starter project. Extend this project to include multiple 'views'. Explore the handlebars templating library.

Templates

Templates



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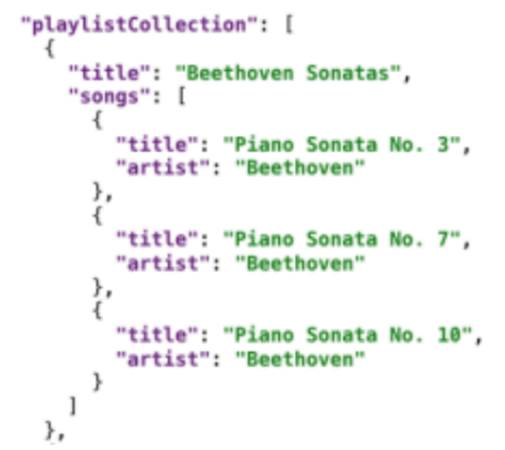
Templates enable dynamic composition of views from layouts, partials and expressions.

Json

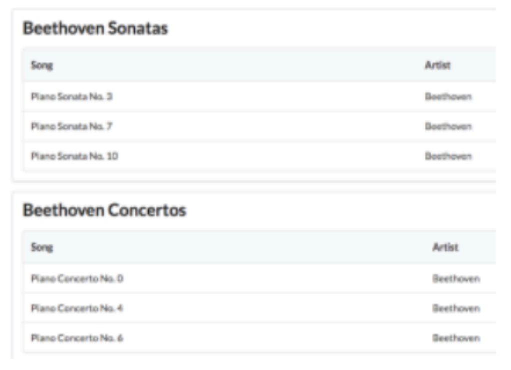


```
"playlistCollection": [
  {
    "title": "Beethoven Sonatas",
    "songs": [
      {
        "title": "Piano Sonata No. 3",
        "artist": "Beethoven"
      },
      {
        "title": "Piano Sonata No. 7",
        "artist": "Beethoven"
      },
      {
        "title": "Piano Sonata No. 10",
        "artist": "Beethoven"
      }
    ]
  },
```

PLAY VIDEO

JSON is notatino for representing javascript objects in a simple literal format.

Dashboard



Beethoven Sonatas

Song	Artist
Piano Sonata No. 3	Beethoven
Piano Sonata No. 7	Beethoven
Piano Sonata No. 10	Beethoven

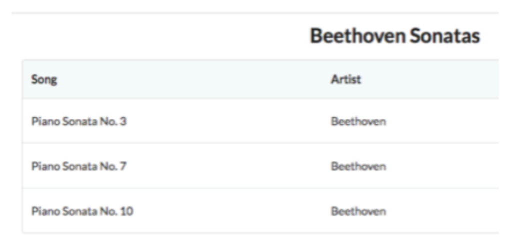
Beethoven Concertos

Song	Artist
Piano Concerto No. 0	Beethoven
Piano Concerto No. 4	Beethoven
Piano Concerto No. 6	Beethoven

PLAY VIDEO

Review thee dashboard controller in detail.

Playlist



Beethoven Sonatas

Song	Artist
Piano Sonata No. 3	Beethoven
Piano Sonata No. 7	Beethoven
Piano Sonata No. 10	Beethoven

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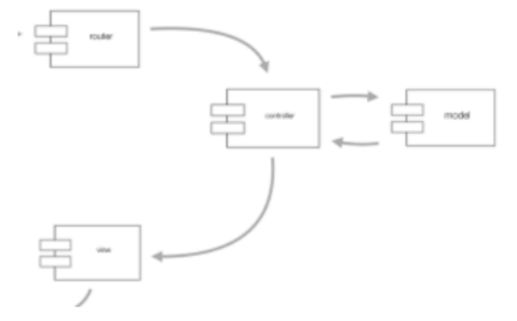
Revise the Dashboard to render playlist without their contents. Use a new playlist view renders individual playlists

MVC



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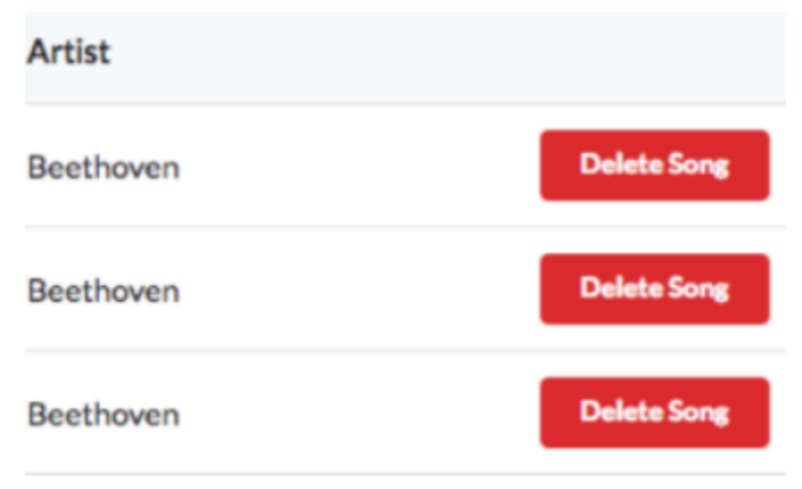
Explore the MVC Pattern in action in Playlist 2

Lab-5 Playlist 2

Refactor the dashboard controller to show summary on of the playlists + link to show playlist details.

Forms

Delete Song


Artist

Beethoven	Delete Song
Beethoven	Delete Song
Beethoven	Delete Song

PLAY VIDEO

How to remove a song from the playlist

Forms Design

PLAY VIDEO

How a form UI is laid out in HTML using Semntic UI

Form Programming

PLAY VIDEO

How to accept user input from a form and process it in a controller

Lab-6 Playlist 3

Enable Songs and Playlists to be added via simple forms.

Sessions

Sessions Introduction

HttpSession
Cookies
Hidden Field
URL-Rewriting
Partial Session Tracking
State Managment

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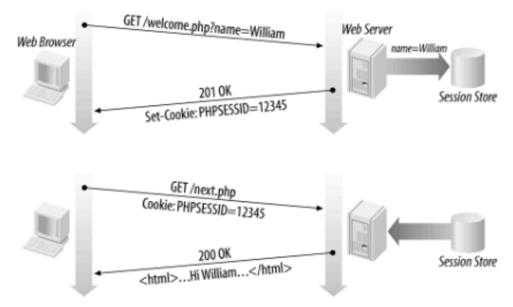
Keeping track of the currently logged in user is a challenge - as HTTP is, by definition 'stateless'. Hidden form fields, url rewriting and cookies are three common techniques for implementing sessions.

Using Sessions



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Explore how we need to refactor the application to support sessions

Sessions UX

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New forms needed to enable the user to signup / login

Webstorm IDE

WebStorm
The smartest JavaScript IDE
Powerful IDE for modern JavaScript development

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A demonstration of importing a glitch application into the WebStorm IDE

Creating Sessions

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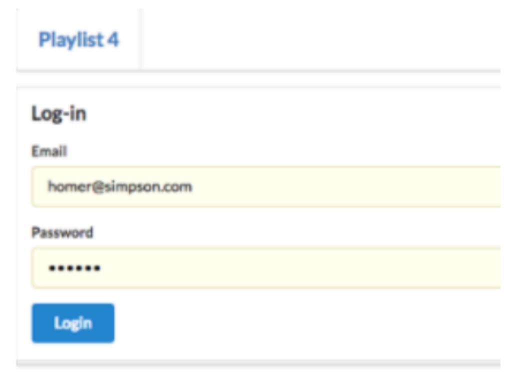
The API to create, access and destroy sessions.

Lab-7 Playlist 4



Playlist 4

Log-in

Email

homer@simpson.com

Password

••••••

Login

Introduce Sessions onto the Playlist application, enabling user accounts and cookie-based authentication.