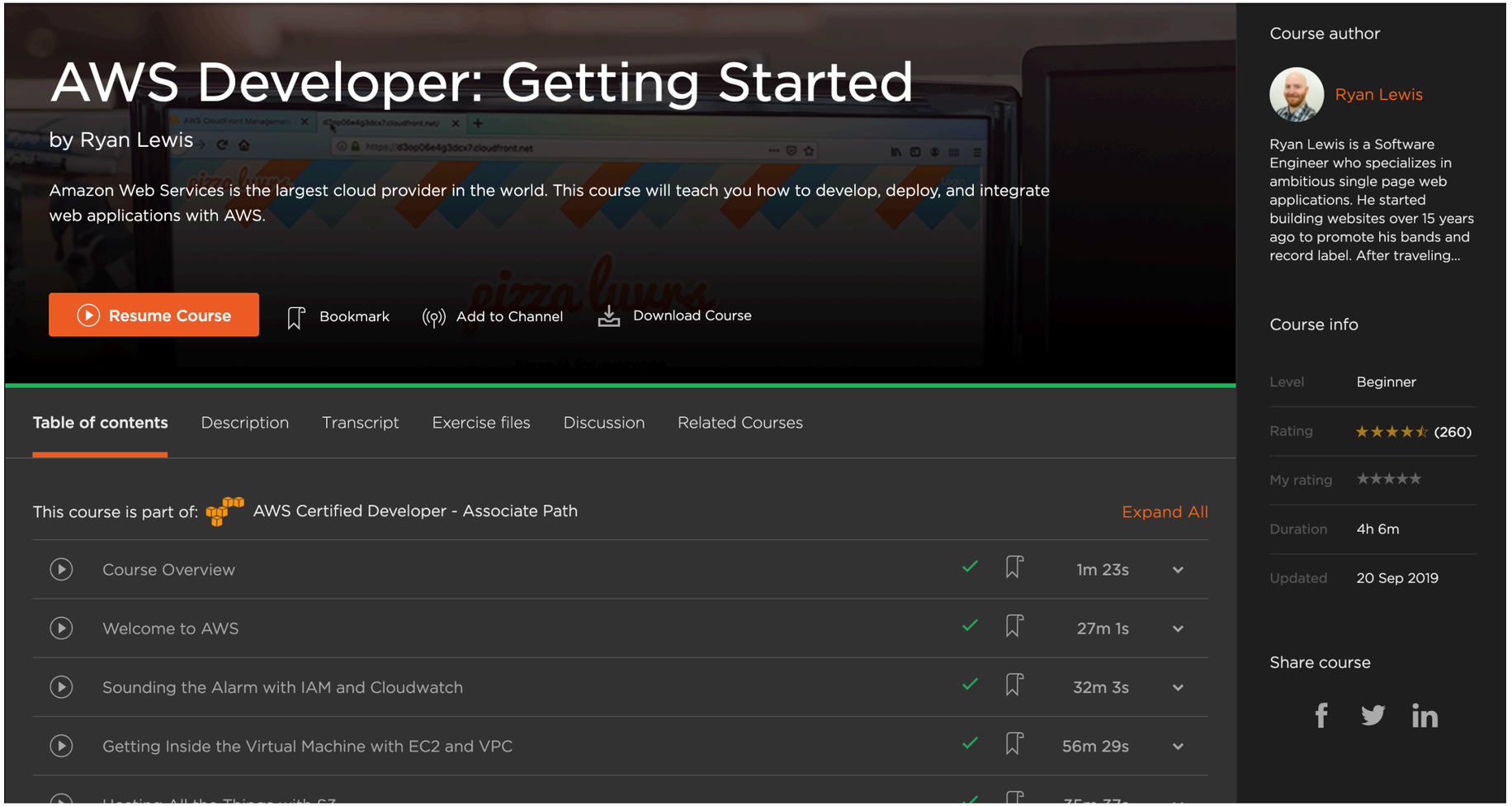
AWS Developer: Designing and Developing

DESIGNING AND DEVELOPING ON AWS

Ryan Lewis
CLOUD ENGINEER
@ryanmurakami ryanlewis.dev

We’re here to level up your proficiency and understanding of AWS

Previously on AWS Developer



AWS Developer: Designing and Developing

Proficient with AWS Services

AWS Developer: Getting Started

Familiarity with AWS Services


aws
Super cool
web app

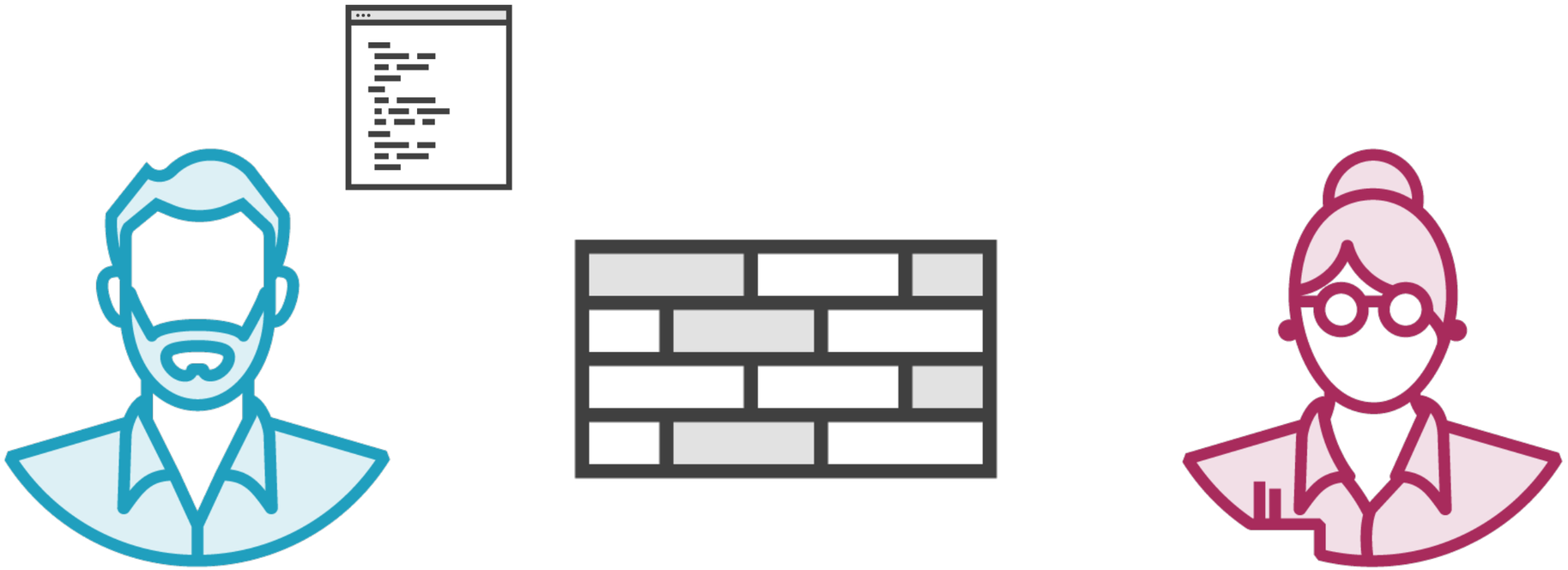
Our Tools

AWS CLI

AWS SDKs

Approaching Cloud Development on AWS

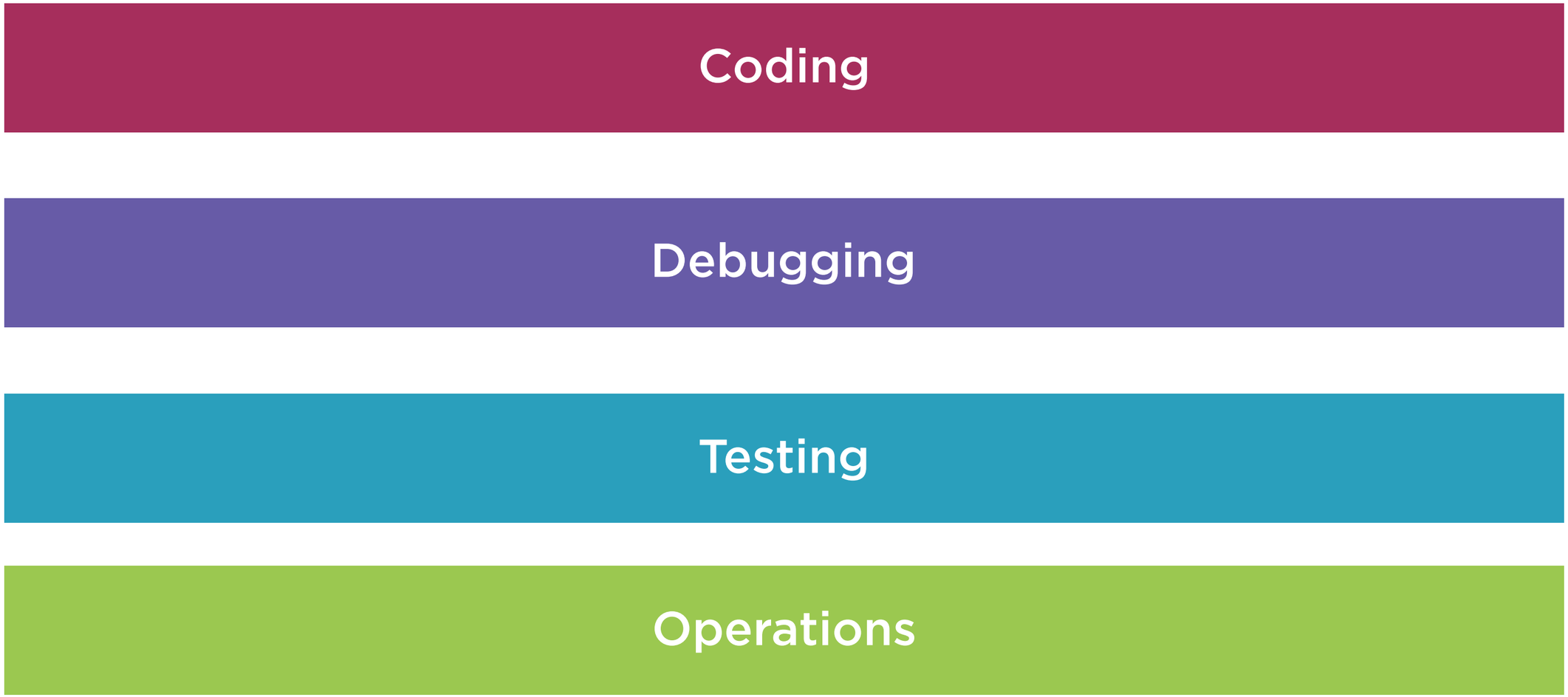
The Dark Ages of Deployment



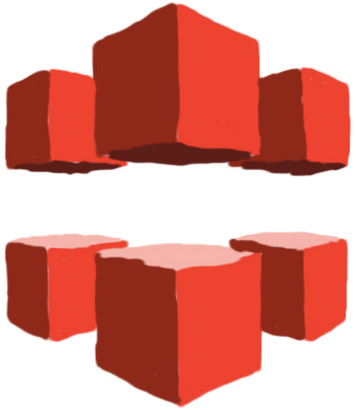
Development

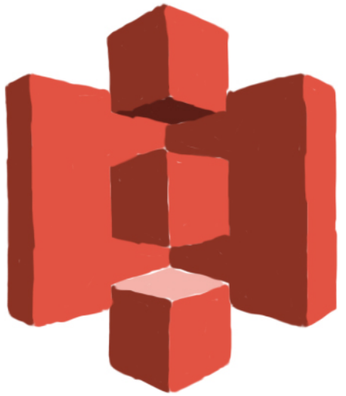
Operations

The Many Hats of a Developer

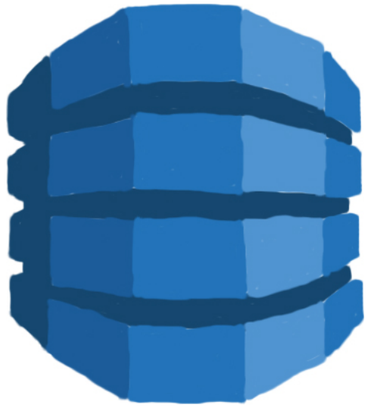


Your Brain on AWS







Cloud Development 101

Start with the Infrastructure

Cloud Development Decisions

Computing

EC2 or Lambda?

Persistence

S3, Elasticache, RDS, or DynamoDB?

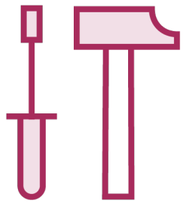
Routing

API Gateway or Route 53 DNS?

Cloud Development Toolbelt

Elastic Cloud Compute

Simple Storage Service



DynamoDB

Simple Queue Service

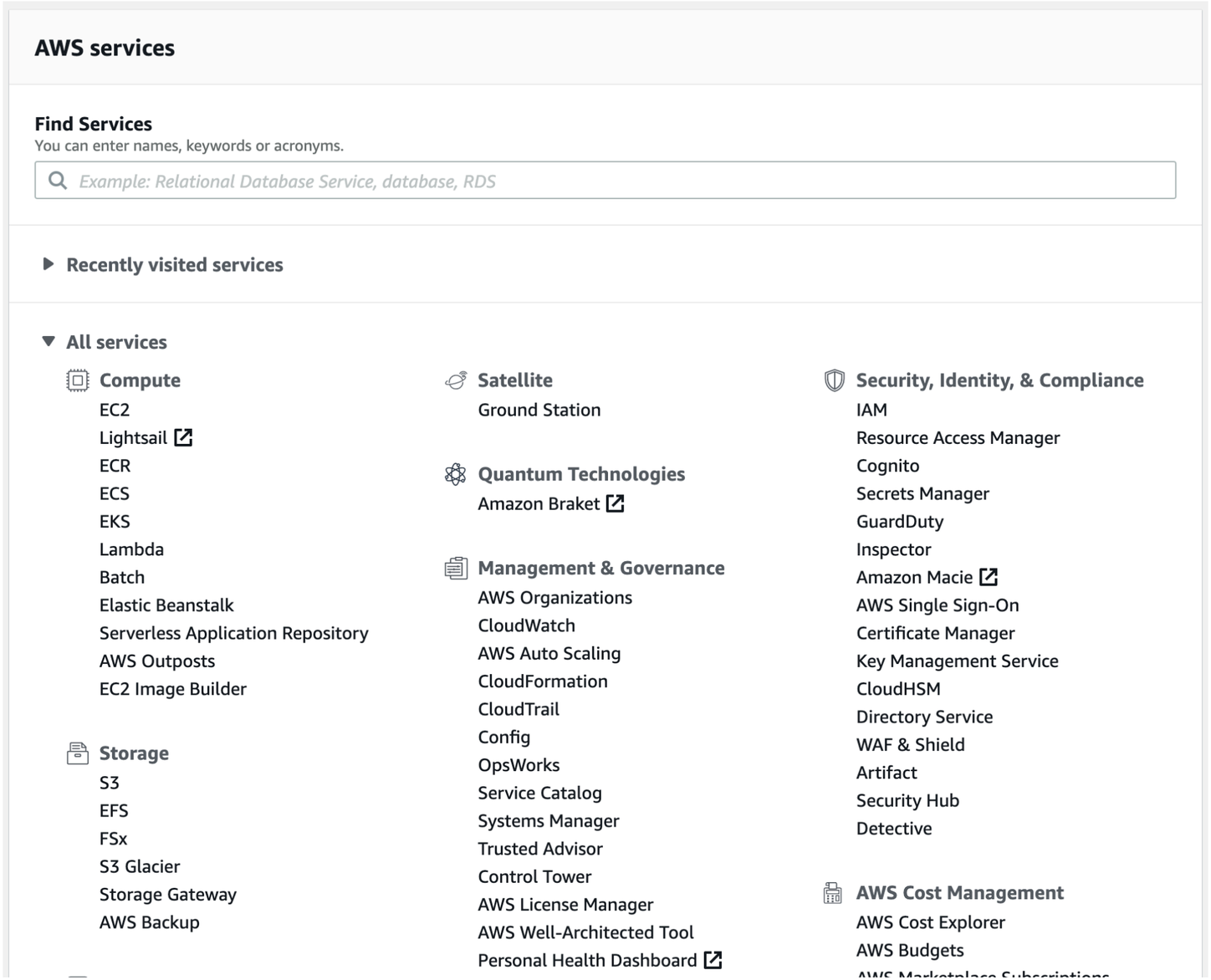
Distributed and scalable combination of code and services

Resilient and Maintainable

A Better Application

Service Domains in AWS

AWS Service Catalog by Domain



AWS services

Find Services
You can enter names, keywords or acronyms.

Example: Relational Database Service, database, RDS

▶ Recently visited services

▼ All services

Compute
EC2
Lightsail
ECR
ECS
EKS
Lambda
Batch
Elastic Beanstalk
Serverless Application Repository
AWS Outposts
EC2 Image Builder

Storage
S3
EFS
FSx
S3 Glacier
Storage Gateway
AWS Backup

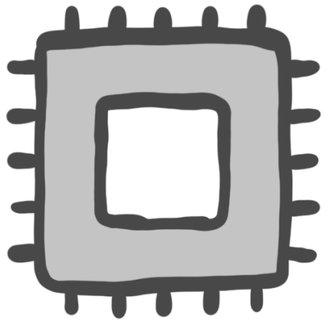
Satellite
Ground Station

Quantum Technologies
Amazon Braket

Management & Governance
AWS Organizations
CloudWatch
AWS Auto Scaling
CloudFormation
CloudTrail
Config
OpsWorks
Service Catalog
Systems Manager
Trusted Advisor
Control Tower
AWS License Manager
AWS Well-Architected Tool
Personal Health Dashboard

Security, Identity, & Compliance
IAM
Resource Access Manager
Cognito
Secrets Manager
GuardDuty
Inspector
Amazon Macie
AWS Single Sign-On
Certificate Manager
Key Management Service
CloudHSM
Directory Service
WAF & Shield
Artifact
Security Hub
Detective

AWS Cost Management
AWS Cost Explorer
AWS Budgets



Compute

Runs code that you provide

Services:

- Elastic Cloud Compute (EC2)
- Lambda
- EC2 Container Service
- Elastic Beanstalk
- Batch

Storage

Stores data

Services:

- Simple Storage Service (S3)
- Elastic File System (EFS)
- Glacier
- Storage Gateway

Database

Provides databases

Services:

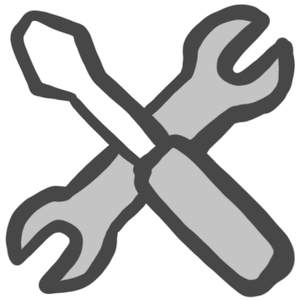
- Relational Database Service (RDS)
- DynamoDB
- ElastiCache
- Redshift

Networking and Content Delivery

Controls networking and routing

Services:

- Virtual Private Cloud (VPC)
- CloudFront
- API Gateway
- Route 53



Developer Tools

Facilitates development lifecycle

Services:

- CodeStar
- CodeCommit
- CodeBuild
- CodeDeploy
- CodePipeline
- X-Ray

Management and Governance

Service management and orchestration

Services:

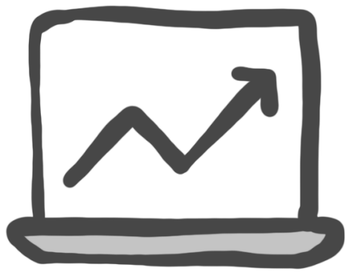
- CloudWatch
- CloudFormation
- CloudTrail
- OpsWorks

Security, Identity and Compliance

Manages service access

Services:

- Identity and Access Management (IAM)
- Inspector
- Certificate Manager
- Directory Service
- WAF and Shield
- Artifact

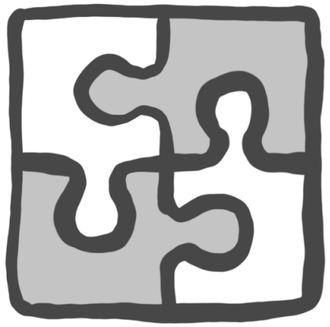


Analytics

Consumes and processes data

Services:

- Athena
- Elastic Map Reduce (EMR)
- CloudSearch
- ElasticSearch
- Kinesis
- Data Pipeline



Application Integration

Integrates AWS services

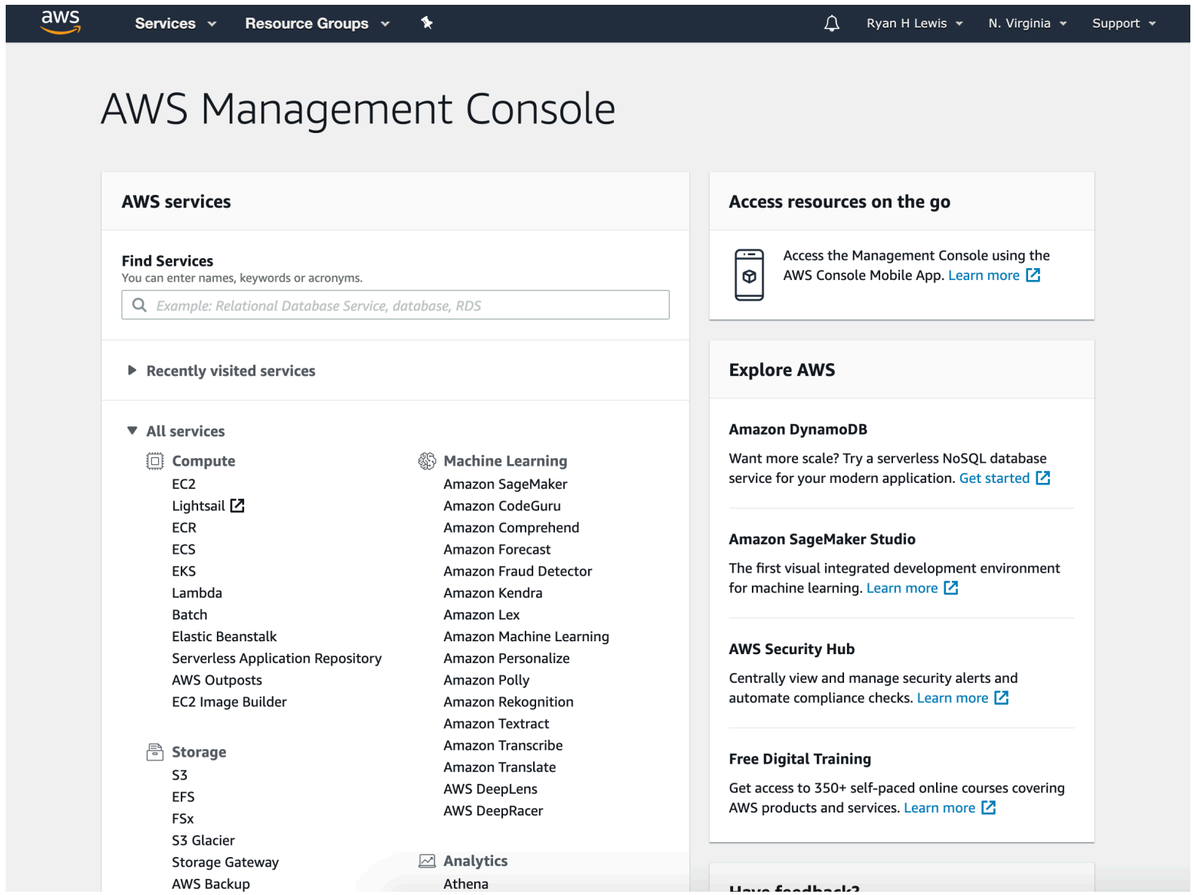
Services:

- Simple Notification Service
- Simple Queue Service
- Simple Workflow (SWF)
- Step Functions

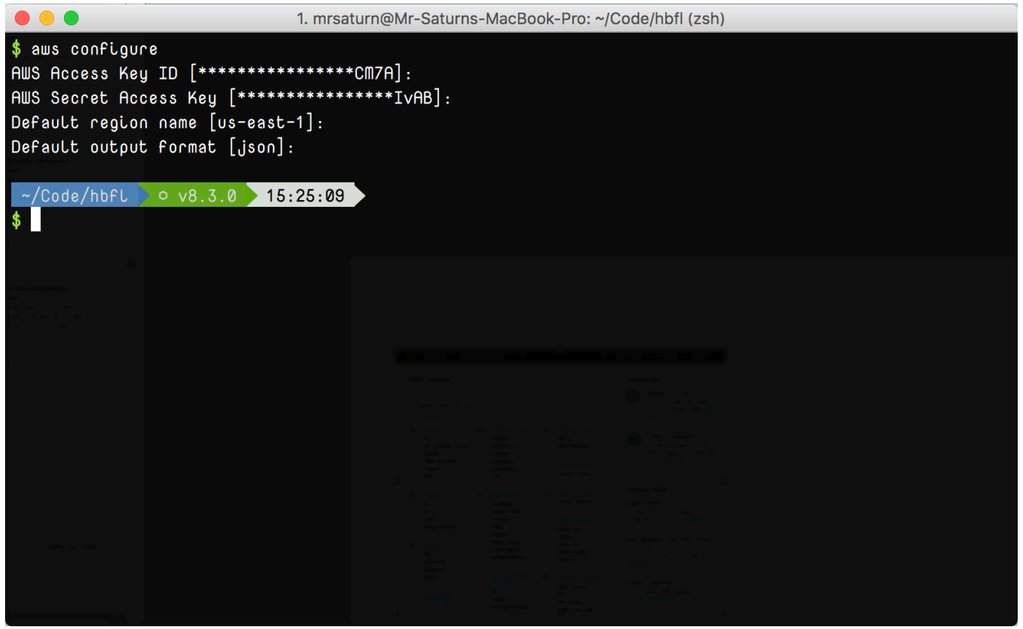
Use AWS Domain types to give you hints to a service's function

SDKs for AWS

AWS Console



AWS CLI



AWS JavaScript SDK Documentation

Class List
Classes | Methods | Properties | Files
Search:

Top Level Namespace
- Services
  - AccessAnalyzer < Service
  - ACM < Service
  - ACMPCA < Service
  - AlexaForBusiness < Service
  - Amplify < Service
  - APIGateway < Service
  - ApiGatewayManagementApi < Service
  - ApiGatewayV2 < Service
  - AppConfig < Service
  - ApplicationAutoScaling < Service
  - ApplicationInsights < Service
  - AppMesh < Service
  - AppStream < Service
  - AppSync < Service
  - Athena < Service
  - AugmentedAIRuntime < Service
  - AutoScaling < Service
  - AutoScalingPlans < Service
  - Backup < Service
  - Batch < Service
  - Budgets < Service
  - Chime < Service
  - Cloud9 < Service
  - CloudDirectory < Service
  - CloudFormation < Service
  - CloudFront < Service
  - CloudHSM < Service
  - CloudHSMV2 < Service

AWS SDK for JavaScript

The official AWS SDK for JavaScript, available for browsers and mobile devices, or Node.js backends

For release notes, see the CHANGELOG. Prior to v2.4.8, release notes can be found at https://aws.amazon.com/releasenotes/?tag=releasenotes%23keywords%23javascript

If you are upgrading from 1.x to 2.0 of the SDK, please see the upgrading notes for information on how to migrate existing code to work with the new major version.

Installing

In the Browser

To use the SDK in the browser, simply add the following script tag to your HTML pages:

```
<script src="https://sdk.amazonaws.com/js/aws-sdk-2.596.0.min.js"></script>
```

You can also build a custom browser SDK with your specified set of AWS services. This can allow you to reduce the SDK's size, specify different API versions of services, or use AWS services that don't currently support CORS if you are working in an environment that does not enforce CORS. To get started:

http://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/building-sdk-for-browsers.html

The AWS SDK is also compatible with browserify.

For browser-based web, mobile and hybrid apps, you can use AWS Amplify Library which extends the AWS SDK and provides an easier and declarative interface.

In Node.js

The preferred way to install the AWS SDK for Node.js is to use the npm package manager for Node.js. Simply type the following into a terminal window:

```
npm install aws-sdk
```

In React Native


<AWS_SDK>

There are officially supported SDKs from AWS and non-supported, open source SDKs from third parties

Officially Supported Server-side AWS SDKs

Java

.NET

C++

Python

Ruby

Go

Node.js

Officially Supported Client-side AWS SDKs

JavaScript

Officially Supported Mobile AWS SDKs

Android

iOS

Xamarin

Unity

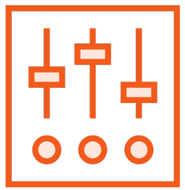
We'll be using the JavaScript SDK

https://docs.aws.amazon.com/AWSJavaScriptSDK/latest/index.html

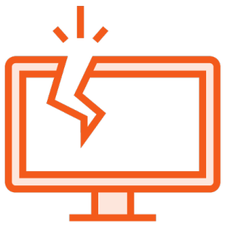
Preparing for the AWS Developer Exam

AWS Developer Associate Certification

Knowledge of AWS services



Options and details of each service



Different problems and scenarios when using each service

Certification Specifics

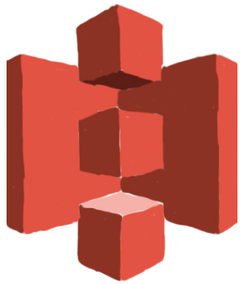
Multiple choice questions

Service specific topic, detail, or limit

Debugging and architecture

Previously Sighted on the Exam

EC2

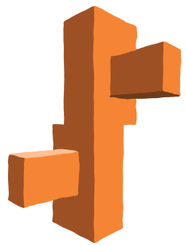


S3

DynamoDB

SQS

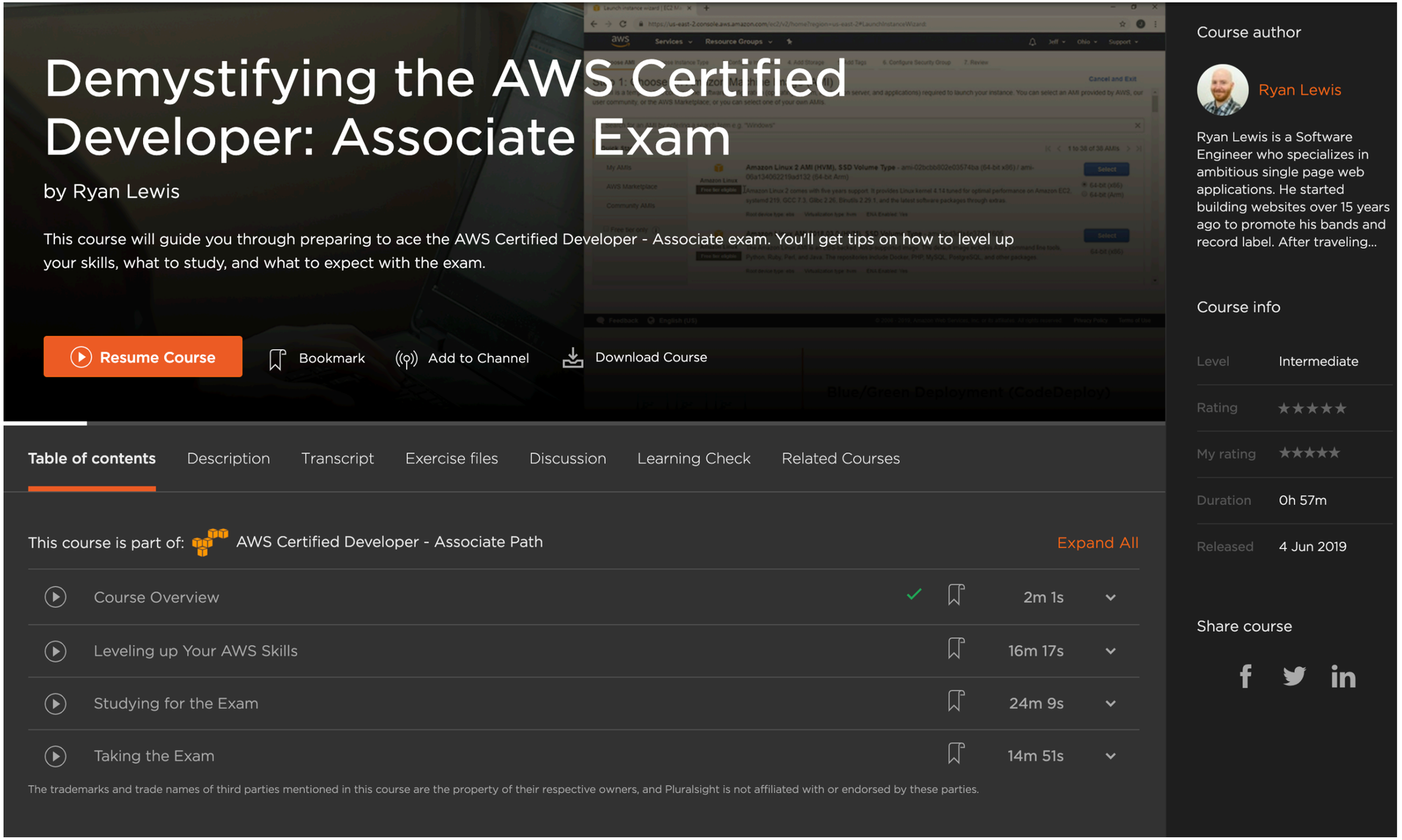
Route 53



Elastic Beanstalk

Not familiar with it?
Use it!

Taking the AWS Certified Developer Exam?



Taking a Hamster to the Races

Creating an AWS Billing Alarm

Create a new account or use an existing one

Objective

Create a Billing Alarm

Before We Start

AWS CLI

Download and install AWS CLI

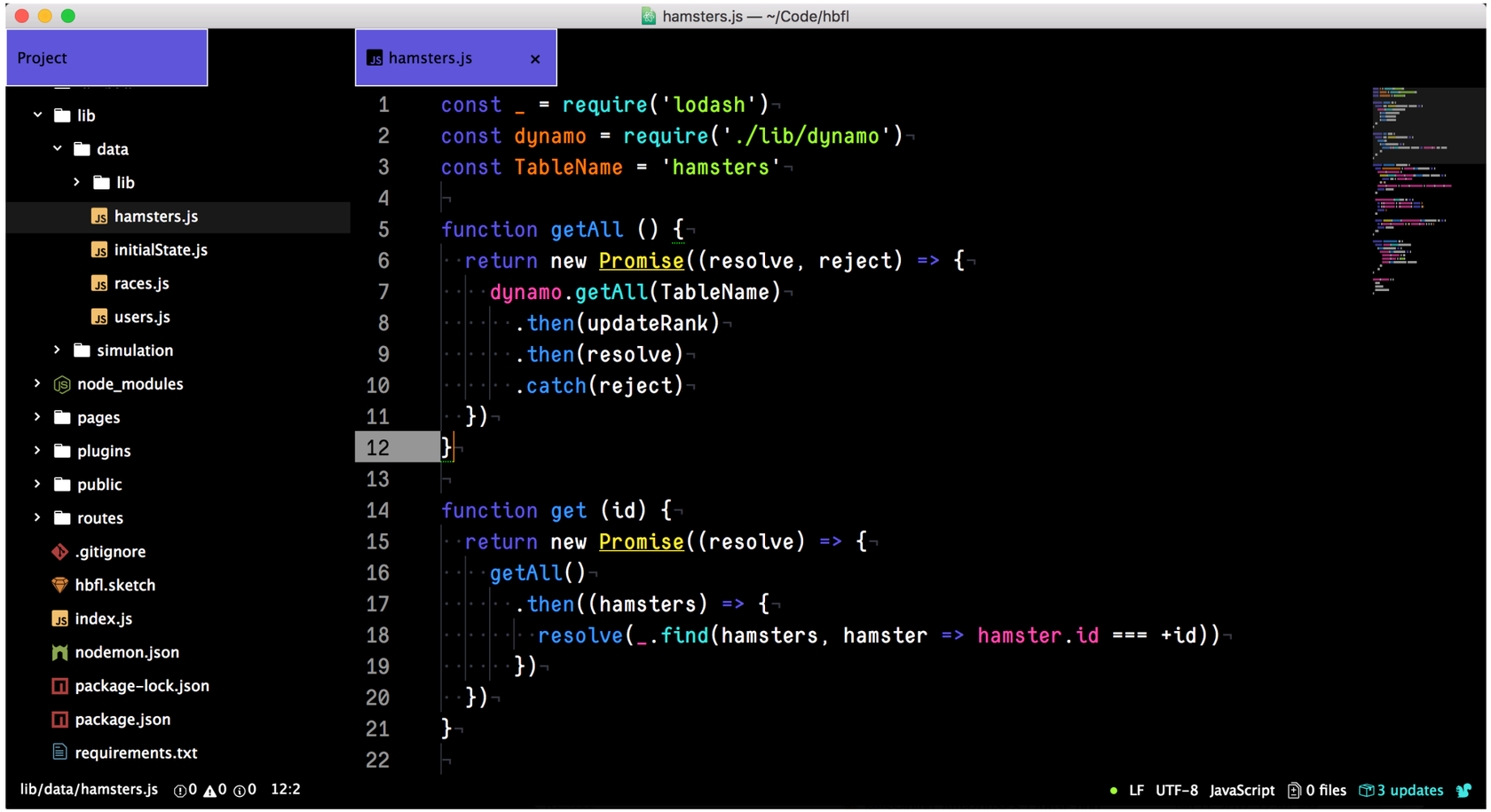
Configure with a user's access key and secret

Ensure permissions for all services used in course

Code Editor

Try Atom!

Download at
atom.io

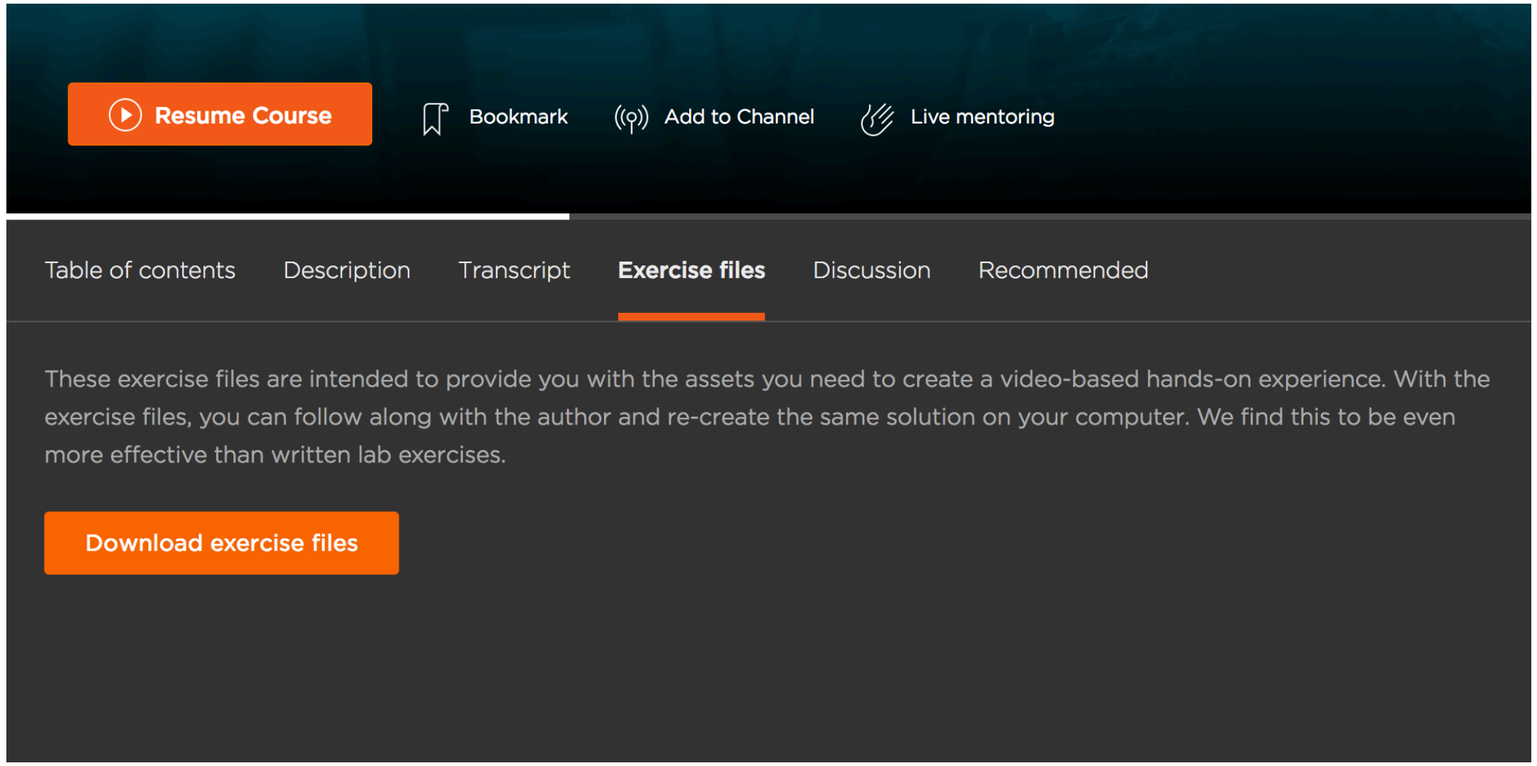


Node.js and npm

Download at nodejs.org

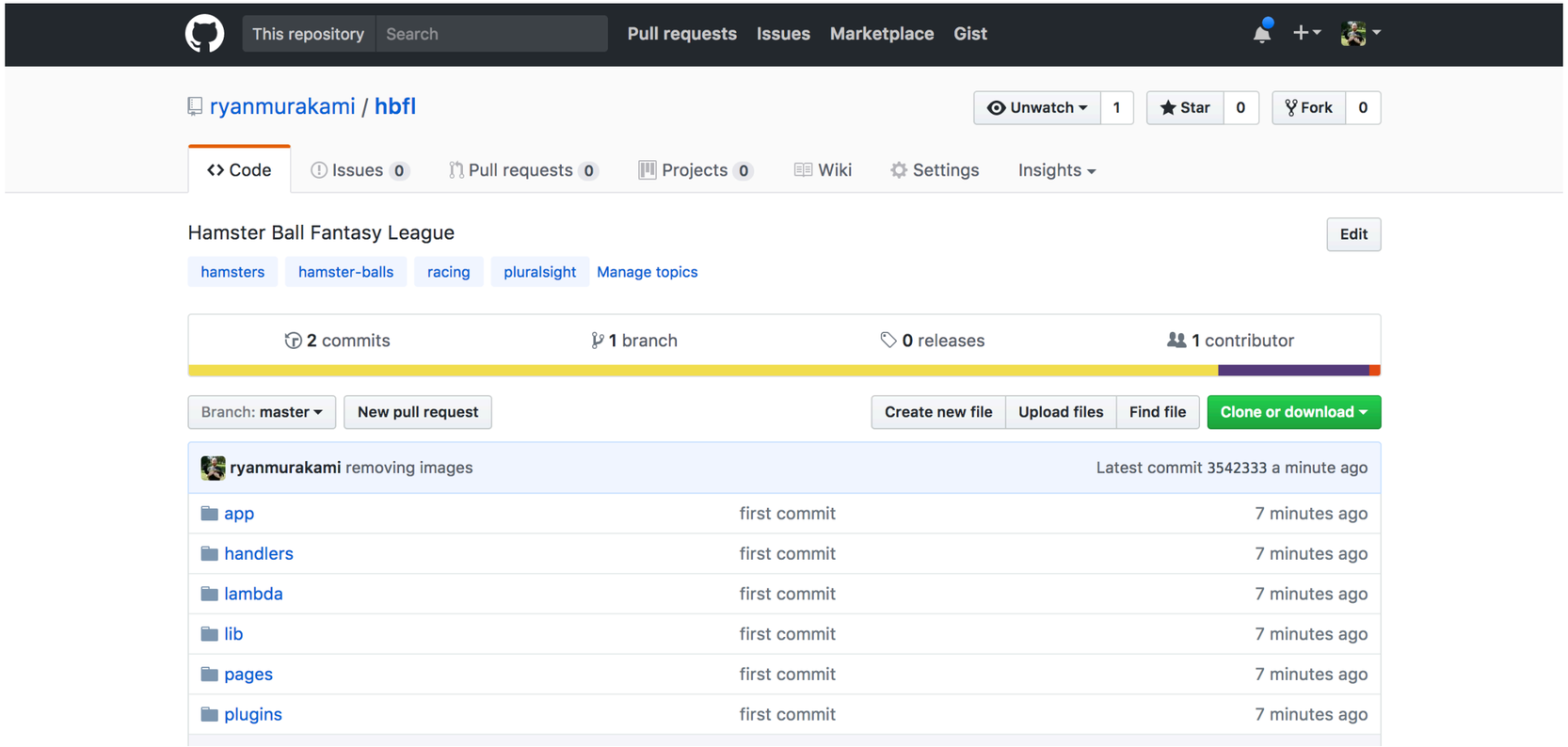
They come packaged together

Download the Demo Project



Exercise Files in Pluralsight

Download the Demo Project



Github Repository: github.com/ryanmurakami/hbfl

Let’s dive deeper into the world of Amazon Web Services