

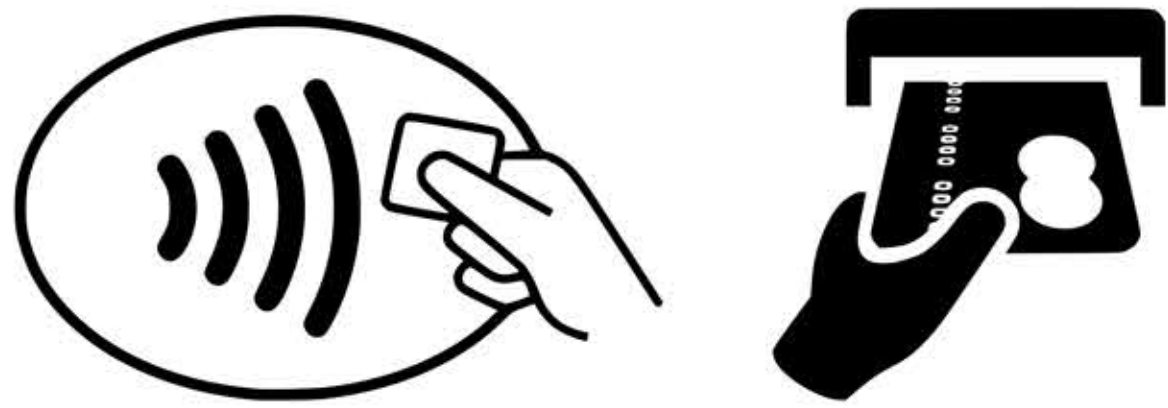
# CloudFormation Stack Tool

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## Who are Barclays?

Barclays is a multinational bank with their headquarters in London, they're responsible for many banking innovations such as pioneering contactless payments and creating the world's first ATM!



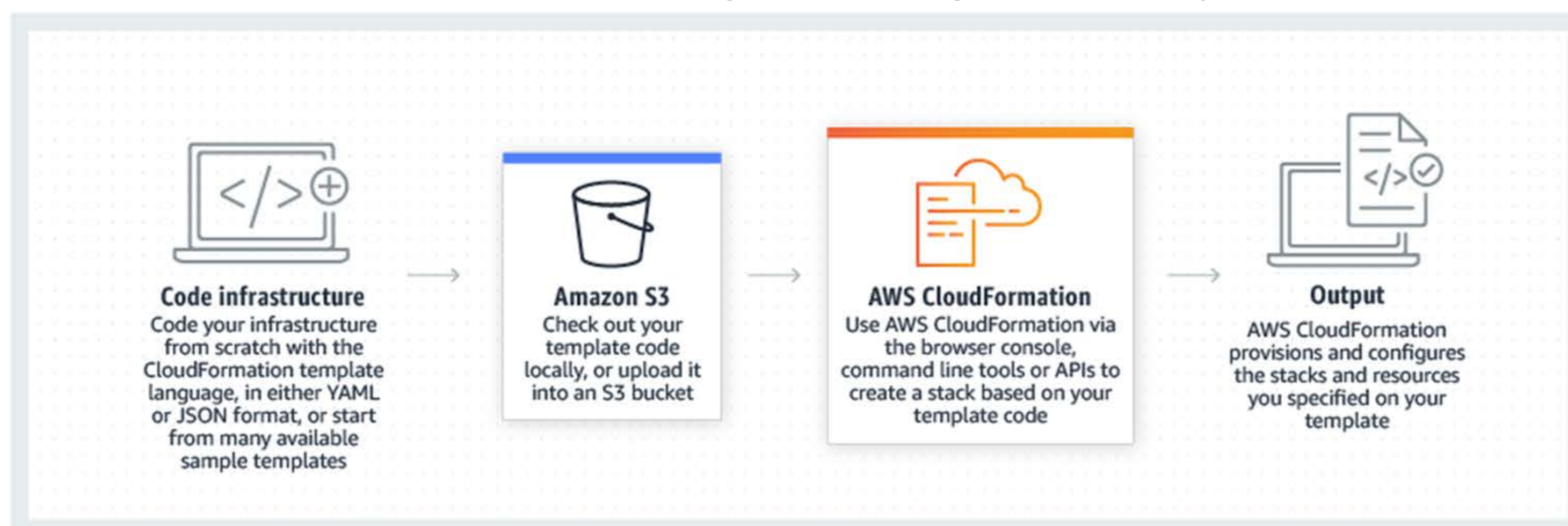
## What did I do?

During the course of my internship I worked within Barclays Wealth Processing division in a team of three other interns. We worked on an AWS service which would calculate the latencies between different services and applications by using their logs. We achieved this by combining many AWS services such as; Lambda, CloudWatch, DynamoDB, SQS and of course CloudFormation.



## What is CloudFormation?

CloudFormation is an AWS service which allows developers to provision and configure AWS infrastructure, which can be made up of many of the services AWS offers and even some third-party ones. It works by providing a template for the product which describes all the resources and how they connect with each other. CloudFormation then takes this template and handles the provisioning and configuration for you.



## Problem Statement

CloudFormation handles a lot of the work for the developer as it deploys the a product stack based on the developers configuration. However when you make updates to the stack CloudFormation doesn't automatically update the existing stack so developers need to manually provision new resources and update configurations. Also when a developer has finished with testing a stack they might want to move on to the next step, such as going from development to production environments, normally the developer would have to manually update the configuration of the next environment to be that of the tested stack.

## Implementation

To keep the tool minimal and simple to use I propose a small command line interface which would utilise the AWS SDK such as Boto3 for Python or AWS SDK for Java. Using these libraries you could implement the automations which can solve the two problems described above.



scan to learn more



## Usage for Stack Promotion & Change Provisioning

### Stack Promotion

To promote a stack using this tool the developer will provide the id of the stack to be promoted along with id of the stack to be updated, the developer may also provide a whitelist of parameters which do not need to be updated, such as environment specific parameters for example database configurations.

### Change Provisioning

To update an existing stack with an updated configuration the developer will simply provide the tool with id of the existing stack and the location of the updated template, the tool will perform drift analysis which will tell it what resources need to be added and what needs to be updated. It'll then go and apply the required updates.