DEV1004-A2 Case Study

Subject Code and Name	DEV1004 - DevOps
Assessment Number	2
Assessment Title	Case Study & Proposal
Assessment Type	Individual Report
Words, Size or Duration	1 PDF file written submission
Subject Learning Outcomes	SLO1, SLO2, SLO4
Submission Date / Time	Due by 11:55pm AEST Sunday end of Module 3.
Weighting	35%

Assessment Purpose

Before spending time and resources on a project, it's crucial to understand what technologies a product should be built with and why. This applies to all parts of a software project, including devops.

To solidify your knowledge of modern software development concepts and show your understanding of devops technologies and software architectures, you should be able to appropriately suggest suitable software, services or development techniques to facilitate devops practices in an application.

Assessment Task / Item

For this assessment, you must submit a PDF file with content that meets the requirements to showcase your skills as a software developer.

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Assessment Instructions

Given the provided case study, write a proposal in report format to implement a new DevOps practice. Your proposal should focus on the benefits to the case study organisation, and include:

1. Containerisation
2. Cloud services
3. Continuous integration/continuous delivery (CI/CD)

Report requirements

1. Explain the core concepts of:
    - cloud computing
    - containerisation
2. Identify and explain the devops elements and technologies that:
    - are currently used by the case study organisation, including their containerisation, cloud services & continuous integration/continuous delivery (CI/CD) stack.
    - not used but should be as per your proposal and suggestions.

3. Identify and explain the business functions and impacts that:
    - the current implementation or lack of implementation of devops has on the case study organisation.
    - the proposal and suggested changes would bring to the case study organisation.

4. Create an application architecture diagram (AAD) that depicts your proposed suggestions
    - Write an explanation of the AAD that justifies each change and explains the components of the diagram

The case study is provided on the next page.

Case Study

A Look Inside the Super Cool Computing (SCC) Company

In an era where technology drives creativity and innovation, modern software development companies like Super Cool Computing (SCC) play a crucial role. Specialized in contract work for creative industries such as film, television studios, and game development, SCC is dedicated to delivering high-quality solutions using cutting-edge tools and processes.

Our Mission

SCC's primary goal is to help creative companies share their projects to the world. We do this by easily and effectively creating projects to meet the needs of our clients, big and small. We can keep our services cheap thanks to our small team size - and still get things done quickly and efficiently thanks to fantastic tricks like automation in combination with the team's high skill level at web development.

Website Development Projects

For typical website-only projects, SCC utilizes a combination of Astro, ReactJS and JavaScript to create client websites. Our work is stored online in GitHub, allowing clients to view work progress directly as an "external read-only collaborator" to each project repository. The development team works with these tools to build robust websites designed to promote new movies, television shows, and video games.

Each project involves creating compelling user interfaces that engage audiences and provide a seamless experience. If you want your website visitors to easily book tickets to their local cinema right from the website, we can build that! (Depending on local cinema chains and if they have APIs available, of course.)

Using clever automation processes via GitHub's automation systems and platforms such as Netlify, work is compiled and deployed to client-specific URLs for review at the end of each day, and clients can confirm whether or not things are ready for the general public with a simple email that our own systems automatically process. That email-to-approve process helps move a staged website to the public-facing URL of the project. This process ensures that the best and latest version of the website is live and accessible to users right away without any delay due to time zone differences and minimises the amount of time spent waiting for human input.

Web API Development Projects

In web API projects, SCC develops the servers using either JavaScript, TypeScript, or C#, depending on the client's existing work environment. The web APIs are deployed to virtual machine instances that run 24/7, providing robust and reliable functionality with incredibly high uptime thanks to the Google Cloud Platform.

Our web APIs are powerful, versatile, and customisable to your needs. If you already have an existing API in your business, we can work with it! If you need file handling and storage, we can handle that too!

The web APIs that we make here at SCC are big, powerful beasts. A single web API can cover so many features and functionalities!

Commitment to Quality

In all of our projects, clients can be confident in our work thanks to our suites of automated tests. Developers run tests themselves each day to be sure that their work is on the right track to meeting a client's needs.

Preserved and Secured

On a client's request, we can store the project materials for safekeeping even after the project timeframe has concluded. If your movie is no longer in theatres and no longer needs its website or domain name, but you want to archive your super awesome movie promo website, just ask!