

# Complex Systems and DevOps: Deliverable 2

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## Course Details

**Course Name:** Complex Systems and DevOps **Course Code:** 62582  
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## Link to GitHub Project

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## 1. Introduction

### Project Scope and Objectives

**Problem Statement and Solution Overview**

**Methodology**

## **I. Analysis**

### **2. Domain Analysis**

**User Stories and Requirements**

**System Architecture Overview**

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## **II. Implementation and DevOps Practices**

### **4. Backend Development**

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**REST API Design with Siren Hypermedia**

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## Cloud Deployment

### Google Cloud Setup

### Netlify Frontend Deployment

**Monitoring and Maintenance** A key principle in DevOps is the ability to act based on metrics. To do this we use Micrometer metrics, a common monitoring facade which is vendor neutral, alike SLF4J is for logging. We use the Prometheus format as Quarkus provides a convenient library for combining these, `quarkus-micrometer-registry-prometheus`. To display and view these metrics we use Dashbuilder which allows easy visualization of the metric data via a YML format. Quarkus also has minimal config library for this, named `quarkus-dashbuilder`.

We have also looked into setting up a centralized logging system, but due to time constraints were unable to implement it in time for the writing of this report.

Another clear improvement is monitoring if our frontend server is up or overloaded. ### 7. Conclusion

## Project Outcomes

### Future Improvements

### Lessons Learned