



# Summit 2024

Capstone Project

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**Saiganesh Angadi**

Software Development Engineer

**Prashanth Dey, Mohan Krishna**



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# Introduction

- Deploying the application using terraform, kubernetes
- Task to closely monitor the application.

*Multi cloud deployment, Terraform, Kubernetes*

# **Statement of the Problem**

Why Monitoring ?

## **Objectives**

- To Ensure the application is up and running
- Monitor application to detect anomalies like DDOS attacks and other attacks
- To Ensure the traffic is routed to client safe and sound

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# Review of Related Literature

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Source: *Findings, American times*

**significant findings or idea from existing project here.**

- Visualize incoming traffics to provide accurate metrics through the application or a server

**Ideas from existing literature here.**

- We used Argo CD for Application Deployment to ensure all the deployments are monitored uniformly

# ARGO CD

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- ARGO is for doing continuous Deployment
- Kubernetes to host it and have Grafana and Prometheus
- Frontend, Shopping , Oauth are the applications

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Source: Add your references here.

# Methodology

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## AZ CLUSTER

- Create a Cluster

## ARGO CD

- Download the repository of ARGO CD to Cluster

## Helm Application

- Create HELM Application of your choice needs frontend and backend

## Monitoring

- Include Grafana and Prometheus in the HELM Application routing to FE, API's

## Data Gathering

- Gather Metrics and by Prometheus exported data is collected by Prometheus exporter and Grafana uses Prometheus as a data source

## Data Analysis

- Create dashboards using the incoming metrics from applications

# Scope and Limitations

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**Write the main limits of your research here.**

- Came to know that ARGOCD Consumes a lot of memory to keep track of records of the cluster continuously

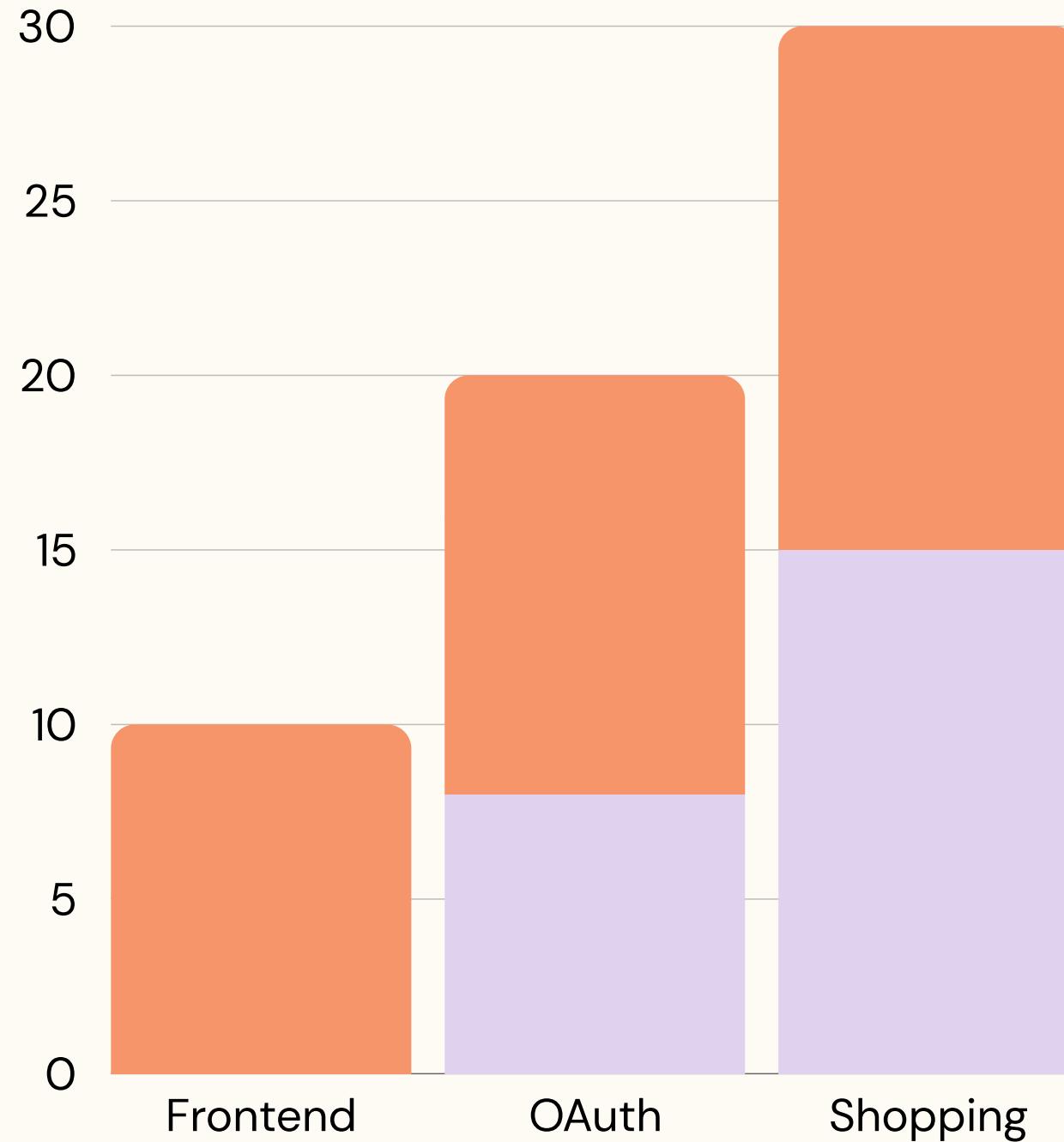
**Write the main limits of your research here.**

- ARGO takes a lot of time searching for a helm application on Directory recursive turned on.

**Write the main limits of your research here.**

- Argo synchronizes timely but upon no traffic the pods are turned into pending states as expected need to find something to trigger it manually

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# Results

**Write a significant observation on your results here.**

- Outstanding and accurate monitoring
- No latency issue on delivering traffic to metrics from apps to Prometheus and Grafana

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# Q&A Session

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Thank you for listening!