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# Netflix Clone Deployment

DevSecOps Project

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Hi, I'm

# Muhammad Abdullah Abrar

I am on a journey to become a DevOps Engineer. I am doing a Diploma in DevOps and Cloud Advancement to advance my career and become what I want to. This project is a showcase of my skills and what I can do right now. The skill I have learned all are involved in this particulate project.

Enjoy!!

# Project Introduction

## Netflix Clone Deployment

- End to End DevSecOps Project
- Implementation of GitOps
- Jenkins CI/CD Automation Pipeline
- Resolving Security Threats

# DevSecOps Project Links

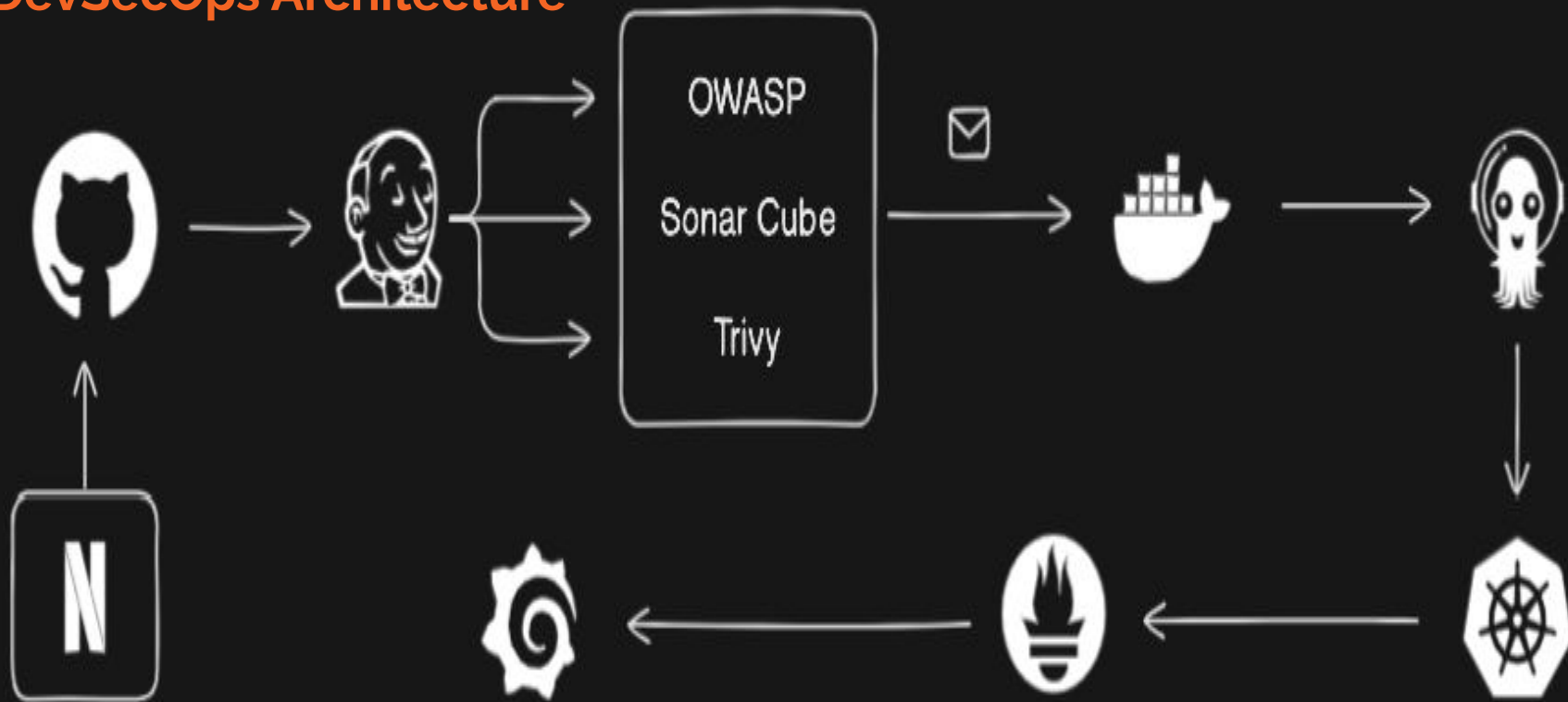
**LinkedIn:**

<https://www.linkedin.com/in/muhammadabdullahabrar/>

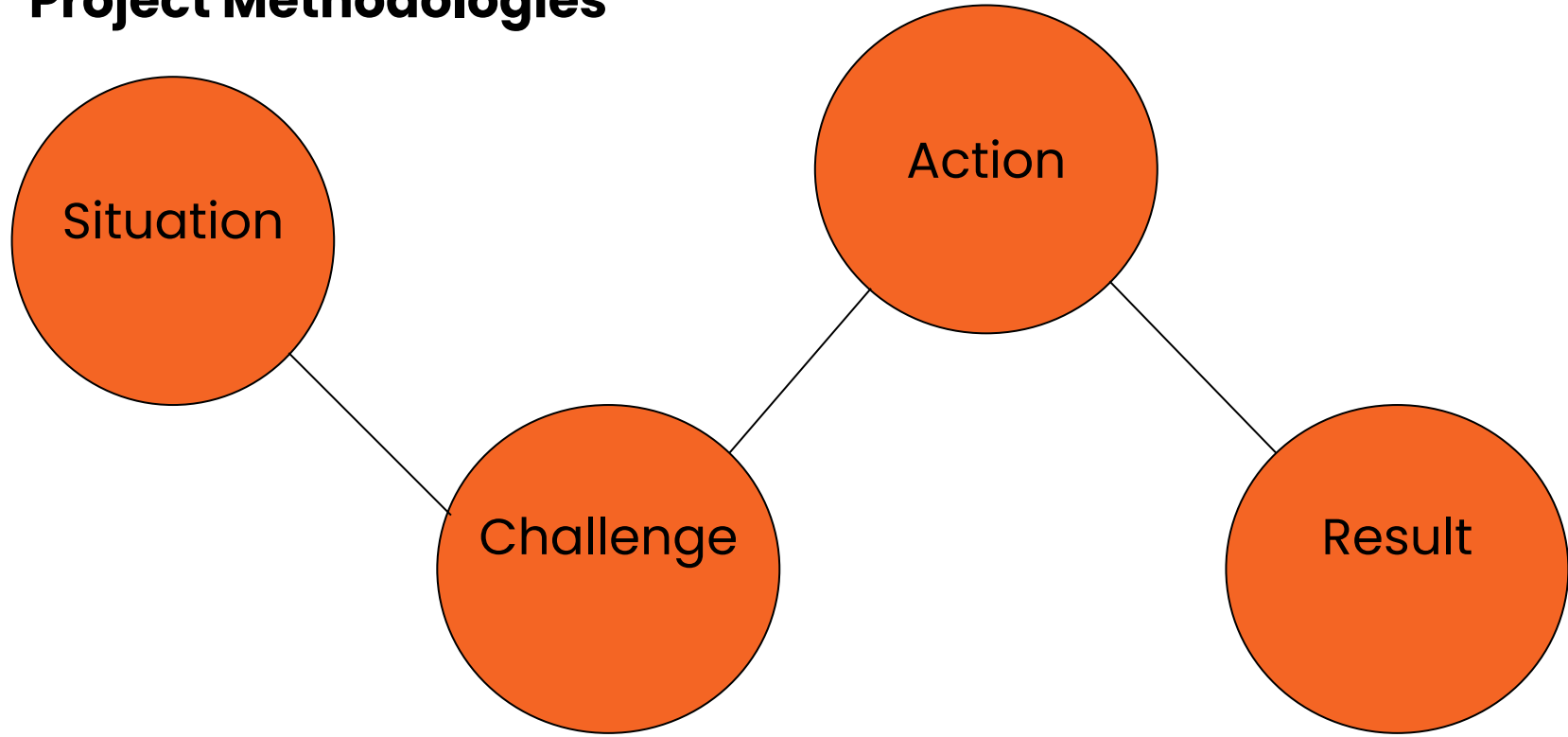
**Github:**

<https://www.github.com/Abdullah-0-3/NetflixCloneK8s>

## DevSecOps Architecture



# Project Methodologies



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## Situation

Creating a seamless CI/CD pipeline for a Netflix clone, ensuring code quality, security, automated deployment, and system monitoring using Jenkins, SonarQube, Docker, Trivy, ArgoCD, Prometheus, Grafana, and OWASP.

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## Challenge

Deploying Netflix Clone ensuring

- High Security and Quality
- Automated CI Pipeline
- Monitoring Logs
- Comprehensive Reports
- Implementation of GitOps



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## Action

- Code Cloning & Analysis
- Dependency Management & Security Checks
- Containerization & Security Scanning
- Notification
- Deployment
- Monitoring

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## Action – Cloning Code & Analysis

- Setting up Jenkins
- Cloning Netflix Repository
- Integrating SonarQube
- Identify Issues
- Check Code Smells
- Potential Bugs

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## Action – Dependency Management & Security Checks

- Installing Dependency
- Performing OWASP Check
- Generating Report of Check
- Check for Security Vulnerabilities
- Implementing SonarQube Gate Analysis
- Sending Reports

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## Action – Containerization & Security Scanning

- Trivy File System Scanning
- Building Docker Image
- Trivy Image Scanning
- Pushing Build to Docker Hub
- Sending Trivy Logs to Email

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## Action – Notification

- Implementing Email Setup
- Sending Email of Building
- Information of Trivy Scanning
- Check all Logs

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## Action – Deployment

- Setting up ArgoCD
- Figuring Github Repository
- Check Nodes
- Setup Deployments
- Port Forward Service

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## Action – Monitoring

- Setting up Prometheus
- Scraping Jenkins Data
- Import Grafana
- Load Dashboard
- Monitor System Health

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## Result

- CI/CD Pipeline Improved Deployment process by Automation.
- Pipeline generated Logs and Monitor all Security Threats and Issues
- Automated and High Reliability Security and Code Checks
- GitOps Implementation using ArgoCD and Github
- Integration of Monitoring tools and providing Real Time Analysis



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## Skills

- Jenkins
- ArgoCD
- SonarQube
- OWASP
- Trivy
- Docker
- Kubernetes
- Prometheus
- Grafana

## Conclusion

# Netflix Clone Deployment

- Developed a robust CI/CD pipeline using Jenkins for automated code cloning, quality analysis, and security checks.
- Integrated SonarQube for comprehensive code quality analysis and OWASP Dependency Check for vulnerability scanning.
- Utilized Trivy to perform both filesystem and Docker image scans, ensuring security before pushing images to Docker Hub.
- Automated deployment using ArgoCD, leading to efficient and reliable service deployment.
- Implemented real-time system monitoring with Prometheus and Grafana, providing critical performance insights.

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# Netflix Clone Deployment

Thank You!

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