

11 Jun, 2025

This is to certify that

Mr. Surendar E

(Student, B.E. – Computer Science and Engineering)

has successfully completed his Final Year Project titled

**“INTEGRATED DEVOPS ARCHITECTURE FOR MERN STACK WITH ADVANCED
END-TO-END KUBERNETES THREE-TIER PROJECT”**

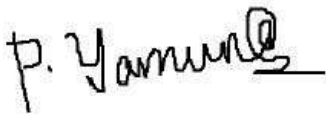
at HCL Technologies Ltd., under the guidance of Yamuna, during the period of [5 Mar, 2025] to [28 May, 2025].

This project involved the design and deployment of a robust and scalable three-tier architecture for a MERN-based web application using advanced DevOps methodologies. It featured full integration of **Git, Jenkins, Docker, Kubernetes, and ArgoCD**, delivering an automated **CI/CD pipeline** with real-time orchestration and deployment monitoring.

A key highlight of the project was the implementation of a custom **MERN-based DevOps Dashboard** that dynamically displays **real-time data from integrated DevOps tools**, providing **visual insights into the application's own build, integration, and deployment workflows**. The dashboard was designed to reflect live status updates, making it both a user interface and a self-monitoring system.

The project demonstrated Mr. Surendar's strong grasp of containerization, pipeline automation, multi-tier Kubernetes architecture, and enterprise-grade deployment strategies. His work reflects technical proficiency, innovation, and professionalism consistent with the standards of a global technology organization.

We acknowledge his dedication and contribution, and we wish him continued success in his professional journey.



Authorized

Lead Engineer - **HCL Technologies Ltd.**