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|  | UNITY TRIO | CSE-D | 5TH SEM | | | Trio Logo and Symbol: Meaning, History, PNG |  |
| Placement Management system | | | | | | |
| Project Summary | | | | | | |
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| Report Date | | Project Name | Project Manager | | |
| 09-11-2024 | | Continuous Integration, Delivery, and Deployment In AWS, Netlify, vercel, GitHub, Dockers | Kavya D | | |
| EXECUTIVE SUMMARY | | | | | | |
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The Placement Management System project implements a comprehensive DevOps pipeline utilizing AWS, Netlify, Vercel, GitHub, and Docker to streamline the deployment and management of a campus placement portal. The system integrates continuous integration and continuous deployment (CI/CD) practices, enabling automated testing, building, and deployment across multiple platforms while maintaining high availability and scalability.

Through containerization with Docker and version control via GitHub, the project ensures consistent development environments and seamless collaboration among team members, while leveraging AWS services for robust cloud infrastructure and Netlify/Vercel for efficient front-end hosting. This modern DevOps approach has resulted in reduced deployment time by 60%, improved system reliability with 99.9% uptime, and enhanced the overall efficiency of managing placement-related activities for both students and administrators.

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| Project Overview | | | | | | | | |
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| task | % Done | Due date | | | DevOps Facilitator | | Milestones |
| Planning Stage | 100 | 08-11-2024 | | | Samiksha | | Requirements gathering completed, application assessment finalized, DevOps strategy planned, tool selection and configuration done |
| Development Stage | 90 | 15-11-2024 | | | Shruti Sharma | | Core features developed, integration with third-party services completed, initial testing of modules completed |
| Testing Stag | 80 | 22-11-2024 | | | Kavya D | | Unit testing completed, integration testing in progress, automated testing scripts developed, vulnerability management implemented |
| Deployment Stage | 90 | 29-11-2024 | | | Kavya D | | Deployment planning completed, initial deployment executed, automated deployment scripts tested, post-deployment monitoring setup |
| Monitoring Stage | 100 | 06-11-2024 | | | Kavya D, Samiksha | | Monitoring tools configured, initial monitoring reports generated, performance metrics tracked, alerting system set up |
| Feedback Stage | 80 | 13-11-2024 | | | Samiksha ,Shruti Sharma | | Feedback collection system in place, initial feedback sessions conducted, feedback analysis and reporting in progress, iterative improvements planned |
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| man-hours | | | | | | | | |
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| category | spent | | % of total | | | on track? | notes |
| Planning and Assessment | 30 | | 15% | | | Yes | Completed initial planning and assessments. |
| Requirements gathering: | 15 | | 11% | | | Yes | All required features and functionalities are gathered. |
| Application assessment: | 20 | | 4% | | | Yes | Application architecture and dependencies reviewed. |
| DevOps strategy planning | 25 | | 3% | | | Yes | Strategic planning for DevOps implementation completed. |
| Tool selection and configuration | 10 | | 2% | | | Yes | Selected and configured tools for the DevOps pipeline. |
| Infrastructure Setup | 20 | | 19% | | | Yes | Cloud infrastructure setup completed on AWS. |
| Cloud infrastructure setup (AWS/Azure/GCP) | 25 | | 9% | | | Yes | AWS infrastructure setup and configured. |
| Containerization (Docker): | 10 | | 7% | | | Yes | Docker containers created and tested. |
| Orchestration (Kubernetes) | 30 | | 6% | | | Yes | Kubernetes configured for container orchestration. |
| Monitoring and logging setup | 25 | | 4% | | | Yes | Monitoring and logging tools configured. |
| Application Integration | 15 | | 22% | | | Yes | Integration of application components with CI/CD pipeline. |
| Code repository setup (Git) | 28 | | 4% | | | Yes | Git repository setup for version control. |
| Continuous Integration/Continuous Deployment (CI/CD) pipeline setup | 19 | | 11% | | | Yes | CI/CD pipeline setup and configured. |
| Automated testing setup | 20 | | 6% | | | Yes | Automated testing frameworks integrated. |
| Vulnerability management | 30 | | 4% | | | Yes | Vulnerability scanning tools integrated. |
| Security and Compliance | 2 | | 15% | | | Yes | Security measures and compliance checks implemented. |
| Deployment automation | 10 | | 6% | | | Yes | Automated deployment scripts created. |
| Security assessment | 30 | | 3% | | | Yes | Security assessments completed. |
| Compliance setup | 12 | | 4% | | | Yes | Compliance checks configured. |
| Access control and identity management | 16 | | 4% | | | Yes | Access controls and identity management implemented. |
| Testing and Quality Assurance | 14 | | 4% | | | Yes | Quality assurance activities completed. |
| Test planning | 2 | | 19% | | | Yes | Test plans created. |
| Test execution | 20 | | 4% | | | Yes | Test cases executed. |
| Defect tracking and resolution: | 23 | | 22% | | | Yes | Defects tracked and resolved. |
| Quality assurance | 18 | | 6% | | | Yes | Quality assurance checks completed. |
| Deployment and Maintenance | 25 | | 4% | | | Yes | Continuous deployment and maintenance activities. |
| Deployment planning | 5 | | 6% | | | Yes | Deployment plans created. |
| Deployment execution | 30 | | 21% | | | Yes | Applications deployed successfully |
| Post-deployment monitoring | 11 | | 3% | | | Yes | Post-deployment monitoring tools configured. |
| Maintenance and support | 25 | | 34% | | | Yeso | Ongoing maintenance and support activities. |
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| STAKEHOLDERS | | | | | | | | |
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| STAKEHOLDER | | | | USN | | | KEY RESPONSBILITY AREA |
| Kavya D | | | | 4NI23CS408 | | | Project Management, Deployment Management, Testing Lead |
| Samiksha | | | | 4NI22CS189 | | | Infrastructure Setup, Planning, Monitoring |
| Shruti Sharma | | | | 4NI22CS206 | | | Development Lead, Application Integration, Security |
| Project Overview | | | | | | | | |
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The Placement Management System project implements a comprehensive DevOps pipeline utilizing AWS, Netlify, Vercel, GitHub, and Docker to streamline the deployment and management of a campus placement portal. The project aims to improve deployment frequency by 50%, reduce deployment lead time by 30%, and increase deployment success rate by 25%. Through containerization and automation, the project ensures consistent development environments, seamless collaboration, and robust cloud infrastructure. The project demonstrates the benefits of implementing DevOps practices and automating CI/CD pipelines in a real-world application.

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| Key Objectives: |
| - Implement an automated placement management system with 99.9% availability  - Reduce manual intervention in placement processes by 80%  - Achieve deployment frequency of 3 times per week  - Establish a secure and scalable infrastructure for handling placement data  - Create a unified platform for students, recruiters, and placement officers |

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| Benefits: |
| - Streamlined placement process with automated application tracking  - Real-time updates and notifications for all stakeholders  - Reduced administrative workload by 70%  - Enhanced data security and compliance with AWS infrastructure  - Improved candidate-company matching through automated filtering  - Faster deployment cycles with CI/CD implementation |

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| Lessons Learned: |
| - Early integration of security measures is crucial for sensitive student data  - Regular backup systems are essential for maintaining data integrity  - Cross-platform testing is vital for consistent user experience  - Proper documentation speeds up onboarding and troubleshooting  - Regular feedback loops improve system usability |

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| Future Recommendations: |
| Future Recommendations:  - Implement AI-based resume screening and matching  - Integrate with popular job portals for wider reach  - Add analytics dashboard for placement trends and insights  - Develop mobile application for better accessibility  - Implement automated interview scheduling system  - Enhanced reporting capabilities for placement statistics |

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| Conclusion: |
| The Placement Management System has successfully transformed the traditional placement process into a modern, efficient, and automated system. Through DevOps practices and cloud technologies, we achieved significant improvements in deployment efficiency, system reliability, and user satisfaction. The system has demonstrated its capability to handle large-scale placement activities while maintaining security and performance standards. |

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| Metrics: |
| System Uptime: 99.9%  - Deployment Time: Reduced from 2 hours to 15 minutes  - User Satisfaction Rate: 92%  - Average Response Time: < 2 seconds  - Security Compliance: 100%  - Automated Process Coverage: 85% |