	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology
Subject: CP	
Exp-6	**Date:23-09-25**	**Enrollment No:92200133007**

1. Live Deployment

Platform Selection

- **Chosen Platform:** Vercel.com
- **Reasoning:**
  - Optimized for frontend frameworks (React, Next.js).
  - Easy CI/CD integration with GitHub.
  - Auto-scaling and global CDN.

Deployment Process

1. Created GitHub repository for source code.
2. Linked repository with **Vercel dashboard**.
3. Configured **environment variables** (DB credentials, API keys).
4. Defined build commands:
   - Frontend → `npm run build`
   - Backend API routes deployed as **serverless functions**.
5. Added **custom domain (optional)** and HTTPS via Vercel.

Challenges Faced

- Backend DB connection required configuring **Vercel environment variables**.
- Solved CORS issues between frontend and backend API routes.
- Optimized large bundle sizes to meet Vercel's serverless limits.

2. Monitoring Strategy

Monitoring Setup

- Vercel's built-in **Analytics Dashboard** for performance and request logs.
- Integrated **UptimeRobot** for 24/7 uptime monitoring.
- MySQL DB monitored using **PlanetScale/AWS RDS dashboards** (if applicable).

Key Performance Indicators (KPIs)

1. **API Response Time** – Average < 300ms.
2. **System Uptime** – > 99.5%.

3. **Error Rate** – < 1% failed requests.

Evidence of Monitoring

- Dashboard screenshot (Vercel Analytics).
- Graph of API response time trends.
- Uptime monitoring report (from UptimeRobot).

3. Maintenance Plan

Regular Maintenance Tasks

- **Weekly:** Backup database snapshots.
- **Bi-weekly:** Dependency updates (`npm audit fix`).
- **Monthly:** Security audits and patching.
- **Quarterly:** Load testing and scalability review.

Potential Issues & Mitigation

- **Scalability Limits:** Upgrade to Vercel Pro/Enterprise if traffic increases.
- **Database Failures:** Replication and scheduled backups.
- **Dependency Vulnerabilities:** Use `npm audit` and GitHub Dependabot.

Long-Term Reliability

- Continuous monitoring alerts for downtime.
- Incident response plan with escalation procedure.
- Documentation of known issues and fixes in GitHub Wiki.