



# Al-Ameen COLLEGE

*Edathala, Aluva*

*Re-Accredited with A Grade*

*Affiliated to MG University, Kottayam, Kerala*

## **INSTITUTIONS' INNOVATION COUNCIL**

### **REPORT ON "DATABASE SECURITY PROBLEMS AND SOLUTIONS"**

#### **CELEBRATING NATIONAL TECHNOLOGY DAY**

The Institution's Innovation Council of Al Ameen College, Edathala organized a session on 11th May 2023 at AIS SPACE, (10 to 1 pm) Al-Ameen College, Edathala. This programme was in association with the IIC -National Technology Day celebration for the year 2022-2023. Database security is of paramount importance in today's digital age, where vast amounts of sensitive information are stored electronically. This report highlights the key problems and solutions associated with database security to safeguard data integrity, confidentiality, and availability.

Ms. Remya B. Nair, Assistant Professor in the Computer Science Department of Al-Ameen College, Edathala conducted the class. The different Database security problems that we face are: Unauthorized Access, Data Leakage, Insider Threats, Weak Authentication and Authorization, SQL Injection and Other Vulnerabilities and Inadequate Encryption. Database Security Solutions include :

- **Strong Access Controls:** Implement robust access controls, including role-based access, to ensure that only authorized users can access specific data. Regularly review and update these controls.
- **Data Encryption:** Encrypt data both at rest and in transit. Use strong encryption algorithms and keep encryption keys secure.
- **Regular Patch Management:** Keep database systems and software up-to-date with security patches to address known vulnerabilities.
- **Database Activity Monitoring:** Implement real-time monitoring to detect and respond to suspicious database activities, including unauthorized access attempts.
- **Two-Factor Authentication (2FA):** Require 2FA for accessing critical databases to enhance authentication security.
- **Vulnerability Scanning and Penetration Testing:** Regularly scan for vulnerabilities and conduct penetration testing to identify and remediate weaknesses before attackers can exploit them.

Database security problems continue to evolve as attackers become more sophisticated. Organizations must remain vigilant and proactive in implementing robust security measures to protect their data assets. By addressing the issues of unauthorized access, data leakage, insider threats, weak authentication, vulnerabilities, and encryption, organizations can significantly enhance their database security posture and mitigate risks to their data and reputation. Furthermore, ongoing training and awareness campaigns are critical to maintaining a strong security culture within the organization. About 41 students participated in the session.



**Al-Ameen COLLEGE**

Affiliated to Mahatma Gandhi University, Kottayam  
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**INNOVATION AND  
ENTREPRENEURSHIP  
DEVELOPMENT CENTRE**



**DEPARTMENT OF COMPUTER SCIENCE**

# **NATIONAL TECHNOLOGY DAY**

## **DATABASE SECURITY PROBLEMS AND SOLUTIONS**

**Resource Person: Remya B nair**  
Assistant Professor

**11<sup>th</sup> May 2023**

**Venue: AIS SPACE**

**Dr. Cini Kurian**  
Principal

**Dr. Kala N**  
IIC President

**Ashina Z**  
Program Convener

