

# **UDBHAV Hackathon 2025: Problem Statements & Project Ideas**

## **Blockchain Domain**

Please choose one problem statement from the following and think of how to work on it. You will be starting to code your project on the 26th of October during the hackathon.

### **1. Digital Certificate Validator**

- Description: Blockchain system for issuing tamper-proof academic certificates and instant QR-based verification by employers.
- Key Features: Smart contracts; QR code generation; verification API; certificate wallet.

### **2. Student Voting System**

- Description: Secure, anonymous student election platform with transparent on-chain vote tallying.
- Key Features: Voter authentication; encrypted ballots; tallied results; audit logs.

### **3. Decentralized Web PKI**

- Description: A system using a public blockchain to map domain names to TLS(Transport Layer Security) public keys, creating a decentralized and transparent alternative to traditional Certificate Authorities (CAs).
- Key Features: On-chain domain registration; secure key lookup; key revocation mechanism; proof-of-concept browser extension for verification.