

**جامعـة عـين شمس**

**كلية الحاسبات والمعلومات**

**Project Allocation**

**Project Title: Blockchain based E-voting**

**System**

**Department: Scientific Computing**

**Supervisors:**

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**Students Names:**

**Introduction:**

Recently Voting systems often face issues such as fraud, tampering, and a lack of transparency. These problems can undermine the integrity of elections and diminish public trust. To address these challenges, this project aims to develop a decentralized e-voting platform using blockchain technology. Blockchain ensures that votes are securely recorded, transparent, and tamper-proof. Additionally, AI technology will be integrated to verify voter identities by matching a live facial image with a national ID, ensuring that only verified users can participate in the voting process. This combination of blockchain and AI will provide a secure, private, and reliable solution for modern elections.

* Problem Definition:

Traditional voting systems can be manipulated and lack transparency. Ensuring that only eligible voters can vote, while keeping their identity private, is difficult. A decentralized system using blockchain and AI can provide a secure way for people to vote, ensuring trust and transparency.

* Motivation:

The main motivation is to build a voting system that is secure, private, and transparent. By using blockchain, votes are immutable and can be easily verified. Integrating AI for facial and ID verification ensures that only verified users can vote, preventing fraud and impersonation.

**Objectives:**

The goal of this project is to build a decentralized e-voting system that:

* **Secures voter authentication** through AI-powered verification, where users will take a picture of their face and national ID for validation.
* **Ensures vote security** by storing votes immutably on the Ethereum blockchain.
* **Protects voter privacy** by keeping their identity private and their vote anonymous.
* **Allows voters to change their vote** securely if needed.

## Time Plan:

## November: Research & Planning

## Learning about AI and blockchain technologies. Define the project tasks.

## December: AI Model Development

## Creating and testing models for facial and ID verification.

## January: Frontend Development

## Building the user interface for the voting platform and setting up the backend.

## February: Blockchain Integration

## Developing and launching smart contracts on Ethereum for secure voting.

## March: Testing & AI Improvement

## Testing the smart contracts and improving the AI models based on results.

## April: Final Integration & Deployment

## Combining all parts of the project, optimizing the system, and deploying it.

## Tools:

## Ethereum (Blockchain)

## Solidity

## References:

**1- E-Voting using Blockchain: Moving Away from the Ballot Paper**  
Authors: Somenath Bhattacharyya, Priti Sengupta  
Source: International Journal of Science and Research (IJSR)

**2- Blockchain-Based Electronic Voting: A Secure and Transparent Solution**  
Authors: Andrea Omicini, Michele Marchesi  
Source: MDPI

**3- Principles and Requirements for a Secure E-voting System**  
Authors: Peter Y.A. Ryan, Vanessa Teague  
Source: ResearchGate

**4- E-voting: From Apathy to Adoption**  
Authors: L. Christian Schaupp, Lemuria Carter  
Source: Emerald Insight

**Approvals:**

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