

## Set B

### Practical 1.

Develop a secure and decentralized land registration smart contract that allows:

- The government authority (land registrar) to register land properties.
- Owners to transfer land ownership to other individuals securely.
- LandRegistrar: The government authority that registers land and approves transfers.
- Owner (User): Person who owns a piece of land and can transfer it.
- Buyer/New Owner: A valid Ethereum address to whom land is transferred.

Functional requirements:

- Only the LandRegistrar (contract deployer) can register a new land property.
- Land properties must include: Land ID, Location (string), Current Owner, Area (in square meters),
- Owner of a land can initiate a transfer to another address.
- LandRegistrar must approve the transfer to finalize ownership change.
- System must prevent unauthorized land registration or transfer.

Submit:

- Source code (.sol file)
- Deployment screenshots (e.g., Remix IDE)
- Sample test transactions (Land registration and ownership transfer)

Tool	Official Installation Link
Node.js & NPM	<a href="https://nodejs.org/">https://nodejs.org/</a>
Truffle	<a href="https://trufflesuite.com/docs/truffle/quickstart/">https://trufflesuite.com/docs/truffle/quickstart/</a>
Ganache	<a href="https://trufflesuite.com/ganache/">https://trufflesuite.com/ganache/</a>
MetaMask (Browser Extension)	<a href="https://metamask.io/download/">https://metamask.io/download/</a>

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### Practical 2.

Develop a decentralized smart contract system to manage patient medical records on the Ethereum blockchain. The contract should allow doctors to create records, patients to access them, and administrators to manage permissions.

- Admin (Hospital or Health Authority): Deployer of the contract, manages doctor and patient registration.
- Doctor: Authorized to create and update medical records.
- Patients: Can view their own medical records only.

### Functional requirements:

- The Admin can register new doctors and patients.
- Only authorized doctors can add or update a patient's medical record.
- Only registered patients can view their own records.
- A medical record should contain: Patient ID (address), Doctor ID (address), Diagnosis (string), Prescription (string), Timestamp
- Ensure access control so that no unauthorized access or modification occurs.

### Submit:

- Source code (.sol file)
- Deployment screenshots (e.g., Remix IDE)
- Sample test transactions (Admin registering doctors and patients, Doctor adding records, Patient retrieving records)

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