



Centurion
UNIVERSITY
*Shaping Lives...
Empowering Communities...*

School: Campus:

Academic Year: Subject Name: Subject Code:

Semester: Program: Branch: Specialization:

Date:

Applied and Action Learning (Learning by Doing and Discovery)

Name of the Experiment : Peer Audit – Contract Security Review

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

Algorithm

1. Choose Contract for Assessment: Pick the deployed or finished smart contract for security evaluation.
2. Manual Code Examination: Examine the Solidity code manually or using analysis tools (such as Remix Analyzer, MythX, or Slither) to find syntax issues and possible security gaps.
3. Detect Security Weaknesses: Look for typical problems including:
 - Reentrancy vulnerabilities
 - Integer overflow/underflow issues
 - Permission control errors
 - Unverified external function calls
4. Execute Security Analysis Tools: Apply Remix IDE's "Solidity Static Analysis" feature to automatically identify vulnerabilities and efficiency problems.
5. Collaborative Review & Record Keeping: Work with team members to validate code functionality, verify corrections, and record discoveries with recommended enhancements.
6. Final Validation: Execute tests again and redeploy the contract to confirm that all detected problems have been fixed.

* Softwares used

1. Solidity
2. Hardhat
3. VS code
4. MetaMask

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** As applicable according to the experiment.
Two sheets per experiment (10-20) to be used.*

* Implementation Phase: Final Output (no error)

Applied and Action Learning

Blockchain Security Audits ensure that smart contracts and blockchain systems are secure, efficient, and error-free before deployment. The process identifies vulnerabilities, improves trust, and maintains compliance through systematic checks.

1. Penetration Testing

- Simulates real-world attacks to find weak points.
- Tests network and contract defense strength.
- Ensures system resistance to hacking.

2. Code Review

- Line-by-line inspection of smart contract code.
- Detects logic errors, bugs, and vulnerabilities.
- Ensures security and functional correctness.

3. Threat Modeling

- Predicts possible attack paths and weak spots.
- Prioritizes high-risk areas for protection.
- Helps design proactive defense strategies.

4. Architecture Analysis

- Reviews overall network and contract design.
- Checks cryptography, consensus, and data flow.
- Confirms secure, scalable, and stable setup.

* Observations

- Peer auditing helped in identifying hidden vulnerabilities and improving the overall security of smart contracts.
- Cross-verification by multiple reviewers ensured accuracy, transparency, and code reliability.
- The audit process enhanced understanding of secure coding practices and strengthened deployment readiness.

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
Total	50		

Signature of the Student:

Name :

Regn. No. :

Signature of the Faculty:

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