



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 : Mobile-Ready – Cross-Platform DApp Awareness

Objective/Aim:

To understand how decentralized applications (DApps) are designed to work seamlessly across multiple platforms (mobile, tablet, laptop), and to study how responsive UI, wallet compatibility, and network accessibility impact real-world Web3 usage.

Apparatus/Software Used:

1. Smartphone (Android/iOS)
2. Laptop/PC
3. Mobile Crypto Wallet (MetaMask Mobile / Trust Wallet / Rainbow)
4. Desktop Wallet or Browser Extension (MetaMask, Coinbase Wallet, etc.)
5. Web browser (Chrome/Brave)
6. Internet Connection
7. Responsive Web Design Framework (e.g., TailwindCSS / Bootstrap)
8. Web3 Libraries (Web3.js / Ethers.js)

Theory/Concept:

A Cross-Platform DApp is a decentralized application that functions smoothly on both mobile and desktop, allowing users to perform blockchain transactions anytime, anywhere.

Key Concepts:

Responsive User Interface

- DApp layout adjusts automatically to different screen sizes (mobile, tablet, laptop).
- Ensures usability regardless of device.

Mobile Wallet Integration

- Mobile-ready DApps must support:
- WalletConnect
- Mobile MetaMask deep-linking
- QR-based connection
- This allows a mobile browser or in-app browser to interact directly with the smart contract.

Cross-Platform Compatibility

- A DApp must work on:
- Mobile browsers

Procedure:

1. Open the DApp on a Laptop/PC using a desktop browser.
 - Observe the layout and connect using a wallet extension (e.g., MetaMask).
2. Open the same DApp on your Mobile Device using:
 - MetaMask in-app browser
 - Trust Wallet DApp browser
 - Normal mobile browser with WalletConnect
3. Observe UI responsiveness:
 - Check if buttons resize properly
 - Check navigation, transaction buttons, forms, and tables
 - Ensure no elements overflow on small screens
4. Connect the mobile wallet using WalletConnect QR or deep-link.
 - Verify if the DApp recognizes the connected wallet's address.
5. Perform the same blockchain action on both devices, such as:
 - Sending a payment
 - Fetching account balance
 - Viewing transaction history
 - Interacting with your smart contract
6. Compare performance differences:
 - Mobile vs Desktop speed
 - Display changes
 - Wallet confirmation flow
7. Record the results, especially:
 - Whether the DApp remained fully functional
 - Whether all features were accessible
 - Any UI/UX issues on smaller screens

Observation

- Hash length is always **64 hexadecimal characters** (256 bits).
- A tiny change in input leads to a completely different hash (avalanche effect).

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:
Regn.
Name No.*

Signature of the Faculty: