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 Experiement : Web2 vs Web3- Debate and Redesign

Objective/Aim:

To understand the **differences between Web2 and Web3**, debate their respective advantages and limitations, and then **redesign** a traditional Web2-based system into a **Web3 decentralized version** using blockchain principles.

Apparatus/Software Used:

- Laptop
- WPS Office
- Google for research

Theory/Concept:

What is Web2?

- **The current internet generation, focused on user-generated content, centralized platforms, and data control by big companies (e.g., Google, Facebook, Twitter).**
- **Key Features:**
  - **Centralized servers**
  - **Platform-owned data**
  - **Monetization through ads**
  - **Limited transparency**

What is Web3?

- The **next generation of the internet**, built on **blockchain technology**, enabling **decentralization**, **user ownership**, and **smart contract-based automation**.
- Key Features:
  - Decentralized data storage
  - User ownership via wallets
  - Trustless and transparent
  - Crypto-based economy (tokens, NFTs)

Procedure:

- Compare Web2 and Web3 models.
- Choose a simple Web2 application (e.g., social media, e-commerce).
- Identify centralized components (login, data storage, payments).
- Redesign the system using **Web3 architecture**:
  - Replace username/password with **wallet login (MetaMask)**.
  - Replace centralized database with **blockchain or IPFS**.
  - Replace payment gateways with **smart contract transactions**.
- Implement and test redesigned components.
- Evaluate results and improvements.

Observation Table:

Feature	Web2	Web3
Definition	Current version of the internet (Read + Write)	Next-gen internet (Read + Write + Own)
Control	Centralized, controlled by companies	Decentralized, controlled by users
Data Ownership	Companies own and control user data	Users own and control their data
Examples	Facebook, YouTube, Instagram, Google	Ethereum, IPFS, Filecoin, decentralized apps
Privacy	Lower privacy; data sold for ads	Higher privacy; data secured by blockchain
Accessibility	Easy to use, user-friendly	Requires understanding of blockchain concepts
Security	Prone to data breaches and hacking	Enhanced security using cryptography and blockchain
Censorship	Can be censored by companies or governments	Censorship-resistant due to decentralization
Scalability	Highly scalable with centralized servers	Faces scalability challenges currently
Transparency	Limited transparency; hidden algorithms	Transparent and open through blockchain
Monetization	Ad-based revenue; user data monetized	User can earn directly (crypto, tokens)
Environmental Impact	Low (in usage phase)	Higher in PoW systems (due to energy consumption)

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**		