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

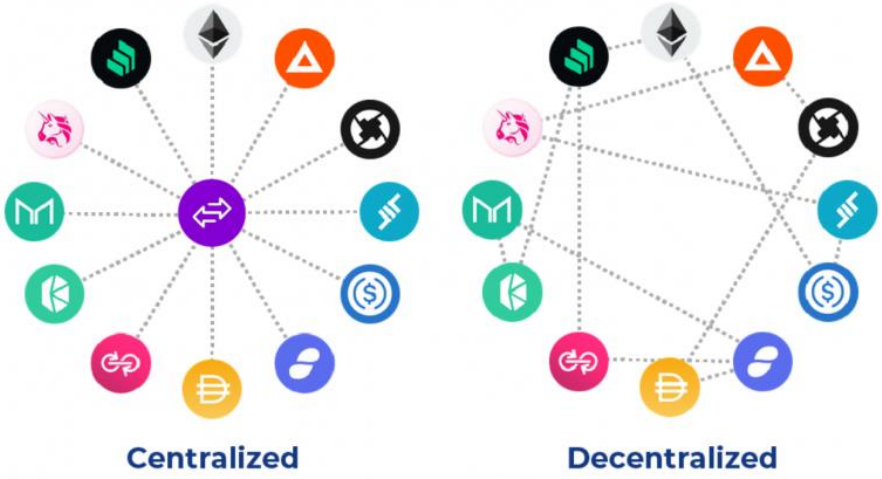
* Implementation Phase: Final Output (no error)

Introduction to Web Evaluation:

1. **Web 1.0** – A read-only web era with static pages and minimal user interaction.
2. **Web 2.0** – Marked by interactive platforms, social media, and user-generated content.
3. **Web 3.0** – Emphasizes decentralization, personal data ownership, and blockchain integration.
4. The internet has progressed from static information sharing to dynamic, user-driven ecosystems.

What is Web 2.o

1. **Interactive Web** – Enables users to read, create, and engage with online content.
2. **User-Generated Content** – Blogs, videos, and social media posts are produced directly by users.
3. **Centralized Platforms** – Managed and controlled by companies like Facebook, Google, and YouTube.
4. **Ad-Driven Monetization** – Revenue is generated through advertisements and the use of user data.
5. **Social Networking** – Facilitates real-time communication and community engagement.
6. **Limited Data Control** – Users have little ownership or authority over their personal information.



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

* Implementation Phase: Final Output (no error)

What is Web 3.o

1. Decentralized Web – No single company controls the system; powered by blockchain.
2. User Data Ownership – Users fully own and control their data and digital identity.
3. Smart Contracts – Automated, trustless transactions using blockchain code.
4. Crypto-Based Economy – Uses tokens and cryptocurrencies for payments and rewards.
5. Privacy & Security Focused – Data is encrypted and shared only with user consent.
6. AI & Machine Learning – Adds intelligence to deliver more personalized experiences.

Advantages and Disadvantages:

Advantages of Web2.0

1. User Interaction – Enables sharing, commenting, and collaboration.
2. Easy to Use – User-friendly platforms accessible to everyone.
3. Massive Reach – Social media connects billions of people globally.
4. Fast Content Sharing – Information can go viral quickly.

Disadvantages of web2.0

1. Lack of Data Privacy – User data is collected and sold by companies.
2. Centralized Control – Big tech companies control content and services.
3. Censorship Issues – Platforms can remove or restrict content.
4. Ad-Driven Models – Focus on profits over user experience and privacy.

Advantages of Web3.0

1. User Data Ownership – Users have full control over their data and digital identity.
2. Decentralization – No central authority; reduces censorship and manipulation.
3. Enhanced Privacy & Security – Data is encrypted and shared only with permission.
4. Smart Contracts & Automation – Enables trustless and efficient transactions

Disadvantages of web2.0

1. Complex for Beginners – Requires knowledge of crypto wallets and blockchain.
2. Scalability Issues – Slower and less efficient compared to centralized systems.
3. Limited Adoption – Still growing and not widely used in daily life.
4. Regulatory Uncertainty – Legal frameworks are not yet clearly defined.

Data Ownership and Privacy:

Web 2.0: Centralized Control

1. Data Controlled by Platforms – User data is stored and managed by companies like Google, Facebook, etc.
2. Limited User Rights – Users have little control over how their data is collected, stored, or sold.
3. Centralized Storage – Data resides on company-owned servers, increasing the risk of breaches.
4. Monetization Without Consent – Companies often use personal data for advertising without full user permission.
5. Frequent Data Leaks – History of data misuse, hacks, and privacy scandals (e.g., Cambridge Analytica).

* Implementation Phase: Final Output (no error)

Web3: User Sovereignty

1.User-Owned Data – Users control their own data through blockchain and decentralized identities.
2.Permission-Based Access – Data is shared only when the user allows it, often through smart contract
3.Decentralized Storage – Uses systems like IPFS or blockchain, reducing centralized breach risks.
4.Encryption by Default – Enhanced security ensures data is protected and less vulnerable.
5.Transparency & Trust – Open-source and public ledgers allow users to verify how data is used.

Identity and Access Management:

Web 2.0: Centralized Identity Providers

1. Centralized Login Systems – Users log in using email/password managed by platforms like Google or Facebook.
2. Single Point of Failure – If login credentials are compromised, the entire account is at risk.
3. Data Linked to Identity – Personal data (name, email, location) is stored and linked to user accounts.
4. Password Management – Requires remembering or storing multiple passwords for different platforms.
5. Platform Dependency – Access is controlled by the service provider, who can block or ban users anytime.

Web3: Self-Sovereign Identity (SSI)

1.Decentralized Identity – Users log in with crypto wallets (e.g., MetaMask) instead of emails or passwords.
2.No Central Authority – Identity is not tied to any one company or platform.
3.Cryptographic Security – Private keys and digital signatures ensure secure and tamper-proof access.
4.Pseudonymity – Users can interact without revealing personal details, protecting privacy.
5.Self-Sovereign Identity – Users have full control over their digital identity and authentication.

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

* Implementation Phase: Final Output (no error)

Transparency and Trust:

Conclusion:

The internet has evolved from static content (Web 1.0) to interactive platforms (Web 2.0) and now toward decentralized, user-controlled systems (Web 3.0). While **Web 2.0** brought connectivity and convenience, it raised concerns over privacy and control. **Web 3.0** aims to solve these issues by giving users ownership, security, and freedom. Understanding this evolution helps us prepare for a more transparent, open, and user-focused digital future.

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 Student:
Name:
Regn No:

Signature of the Faculty:

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