



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 : Web2 vs Web3 – Debate and Redesign

* Objective/Aim:

To compare the principles, technologies, and limitations of Web2 and Web3, and to explore how decentralized features can be incorporated into existing Web2 applications.

* Apparatus/Software Used:

- 1.Laptop
- 2.PowerPoint for presentation
- 3.Brave browser

* Theory/Concept:

What is Web 2.0?

- 1.**Interactive Web** – Allows users to read, write, and interact with content.
- 2.**User-Generated Content** – Blogs, videos, and social media posts are created by users.
- 3.**Centralized Platforms** – Controlled by companies like Facebook, Google, and YouTube.
- 4.**Ad-Based Monetization** – Platforms earn money by showing ads and using user data.
- 5.**Social Networking** – Enables real-time communication and community building.
- 6.**Limited Data Ownership** – Users don't fully control or own their personal data.

What is Web3.0?

- 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.

* Implementation Phase: Final Output (no error)

Data ownership and privacy

Data Ownership and Privacy

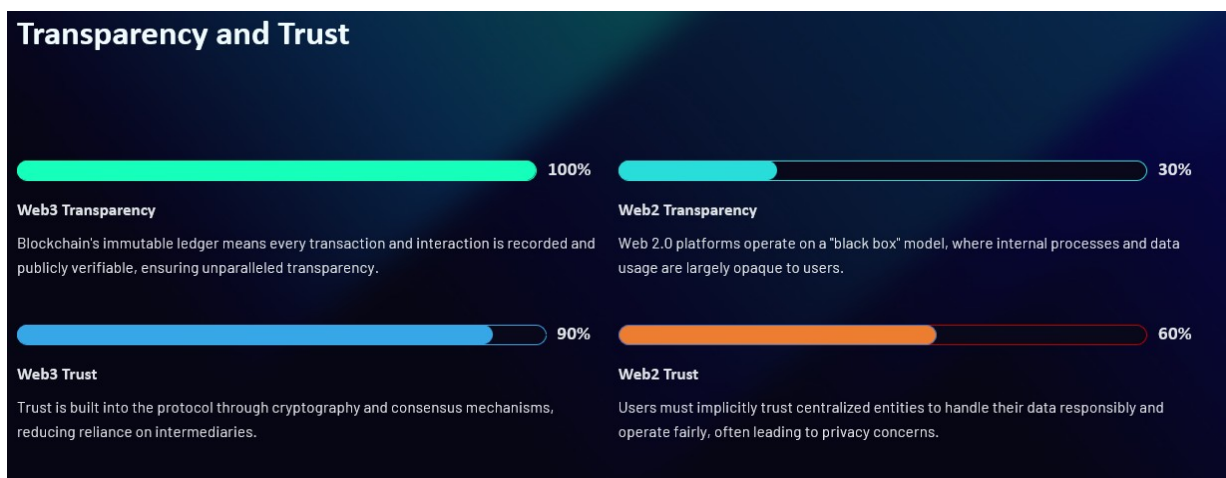
<p>Web 2.0: Centralized Control</p> <ol style="list-style-type: none"> 1.Data Controlled by Platforms – User data is stored and managed by companies like Google, Facebook, etc. 2.Limited User Rights – Users have little control over how their data is collected, stored, or sold. 3.Centralized Storage – 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). 	<p>Web3: User Sovereignty</p> <ol style="list-style-type: none"> 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 contracts. 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.
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Identity and access management

Identity and access Management

<p>Web 2.0: Centralized Identity Providers</p> <ul style="list-style-type: none"> •Centralized Login Systems – Users log in using email/password managed by platforms like Google or Facebook. •Single Point of Failure – If login credentials are compromised, the entire account is at risk. •Data Linked to Identity – Personal data (name, email, location) is stored and linked to user accounts. •Password Management – Requires remembering or storing multiple passwords for different platforms. •Platform Dependency – Access is controlled by the service provider, who can block or ban users anytime. 	<p>Web3: Self-Sovereign Identity (SSI)</p> <ol style="list-style-type: none"> 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.
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Transparency and trust



* Observations

Advantages and disadvantages of web2 and web3

Advantages of Web2.0	Advantages of Web3.0
<ol style="list-style-type: none"> User Interaction – Enables sharing, commenting, and collaboration. Easy to Use – User-friendly platforms accessible to everyone. Massive Reach – Social media connects billions of people globally. Fast Content Sharing – Information can go viral quickly. 	<ol style="list-style-type: none"> User Data Ownership – Users have full control over their data and digital identity. Decentralization – No central authority; reduces censorship and manipulation. Enhanced Privacy & Security – Data is encrypted and shared only with permission. Smart Contracts & Automation – Enables trustless and efficient transactions.
Disadvantages of web2.0	Disadvantages of web3.0
<ol style="list-style-type: none"> Lack of Data Privacy – User data is collected and sold by companies. Centralized Control – Big tech companies control content and services. Censorship Issues – Platforms can remove or restrict content. Ad-Driven Models – Focus on profits over user experience and privacy. 	<ol style="list-style-type: none"> Complex for Beginners – Requires knowledge of crypto wallets and blockchain. Scalability Issues – Slower and less efficient compared to centralized systems. Limited Adoption – Still growing and not widely used in daily life. Regulatory Uncertainty – Legal frameworks are not yet clearly defined.

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:

Page No.....

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