**OKAFOR HUMPHREY IKECHUKWU**

**2021/HND/33802/CS**

**HND II COMPUTER SCIENCE**

**WEEK 2**

**Question 1**

**In a tabular form distinguish between web1, web2 and web3**

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| **WEB 1** | **WEB 2** | **WEB 3** |
| Static websites with limited interactivity. | User-generated content and active participation.  Personalization and customization. | Decentralization and distributed architectures. |
| Centralized content creation and maintenance. | Social media platforms, blogs, forums, and online communities. | Improved data privacy and user control over personal data. |
| Lack of user-generated content. | Rich user experiences with multimedia content. | P2P networks and decentralized storage. |
| Limited social interaction and collaboration. | Mobile apps and responsive web design. | Machine-readable content for enhanced understanding. |
| Information retrieval-focused browsing experience. | Cloud-based services and web applications. | Smart contracts and decentralized applications (dApps). |
| Examples: Early websites, online directories, basic e-commerce. | Examples: Facebook, Twitter, YouTube, WordPress, online marketplaces. | Examples: Blockchain-based platforms like Ethereum, decentralized social networks like Mastodon, IPFS (InterPlanetary File System). |

**Question 2**

**Discuss at least six web 3 characteristics**

1. Decentralization: Web3 aims to decentralize control and ownership of data and applications. It utilizes technologies like blockchain, distributed ledger technology, and peer-to-peer networks to remove central authorities and intermediaries, enabling greater autonomy and trustlessness.
2. Artificial Intelligence (AI): Web3 incorporates AI technologies to enhance various aspects, such as data analysis, recommendation systems, and personalized experiences. AI algorithms can leverage decentralized data sources while respecting user privacy.
3. Web3 Protocols and Infrastructure: Web3 is supported by a growing ecosystem of protocols, frameworks, and infrastructure that facilitate the development and deployment of decentralized applications. These tools provide the building blocks for creating and interacting with Web3 technologies.
4. User Empowerment and Ownership: Web3 aims to empower users by giving them greater control over their digital assets, identities, and data. Users have ownership rights and can selectively share their data, ensuring they are not solely controlled by centralized platforms.
5. Enhanced Privacy and Security: Web3 prioritizes privacy and security by implementing cryptographic techniques and decentralized identity solutions. Users have greater control over their personal data, and transactions can be conducted with improved privacy protection.
6. Interoperability: Web3 emphasizes interoperability between different systems and platforms. It enables seamless communication and data exchange between various decentralized applications (dApps), protocols, and networks, promoting a more connected and open web.