National University of Management
Faculty of Digital Economy
Reflection Task

Course Title: Blockchain Technology
Lecturer: Associate Prof. SEK SocheaT
Name: ThynaJulie Tith
Level: 2nd year
Reflection Task

Write 2 pages:

"How immutability protects Digital Identity"

Immutability means that once something is recorded, it cannot be changed or deleted. In digital identity, this helps protect people's information from being tampered with or faked. This protection is often achieved using **blockchain technology**, which stores data across many computers instead of one central system. This makes it harder for hackers to attack or change the information.

1. Tamper-proof records

In a blockchain, every new piece of data is connected to the previous one like links in a chain. If someone tries to change something, such as a birth date, the link breaks and everyone in the network can see that it's been altered. This keeps identity records safe and trustworthy.

2. Data integrity

An immutable system is like a "write once, read many" record. Once the data is written, no one can secretly change it. This keeps the information correct and reliable. For example, once a verified ID is issued, it stays valid unless it is officially revoked.

3. Securing decentralized identities

Decentralized identity systems use **DIDs** (Decentralized Identifiers), which belong fully to the user, not any company or government. Because blockchain data can't be changed, users have full control over their own digital identities without depending on one authority.

4. Reliable audit trail

Every change or update to an identity is recorded on the blockchain with a time and date. This creates a clear history that anyone can check for proof or audits. It helps ensure that all identity actions are transparent and can be trusted.

5. Preventing identity fraud

Because data on the blockchain is secure and verified through encryption, it's very hard for someone to steal or fake another person's identity. Only the rightful owner can use their credentials, which greatly reduces identity theft.

Even though immutability is powerful, it also brings some problems:

- **Right to be forgotten:** Some laws, like GDPR, say people can ask to delete their personal data. But since blockchain data cannot be erased, systems must keep private data off the blockchain and only store proof or references on it.
- **Key management:** Users control their own private keys. If they lose them, they might lose access to their digital identity forever.
- **Scalability:** Blockchains can be slow when many people use them, causing delays in identity checks.
- **Privacy vs. transparency:** Public blockchains are open to everyone, which can expose private information. Private blockchains are safer but less transparent.

Conclusion

Immutability means that once information is saved, it cannot be changed or deleted. This helps keep your digital identity safe by making sure your personal details stay accurate and secure. No one can alter or remove your identity information without permission, which prevents hackers or fraudsters from stealing or faking who you are online. Because the records are permanent, you

can always prove your identity when needed. This builds trust in online services and makes transactions safer. Immutability also protects your reputation by keeping your information honest and reliable. It acts like a strong shield that guards your identity from being manipulated. Overall, immutability makes digital identity more secure and trustworthy. This is why it is an important part of protecting who you are on the internet**.**