BASIC TASKS

1. **Definition of data**: Form a computer science perspective, data refers to all numbers,letters,symbols,etc. that can be input into the computer and processed by the computer program, and have certain mean. Form a data science, data refers to qualitative or quantitantive records of things that are meaningful in a certain context in the objective world.(Form class of foundation data science in BiUH)

2. **Definition of information**:Information is a collection of data that has not been cleaned and logically combined to make it available to people.

3**.Different between data and information** :(1） Information is a special collection of data. (2) Data is the basic element of information composition.

4**.Definition of metadata**:Metadata, also known as intermediary data and relay data, is data about data.

5.**why we need metadata:** metadata mainly describing data properties and supporting functions such as indicating storage location, historical data, resource search, file recording, etc.

MEDIUM TASKS

1. **Definition of Data Privacy**:Data privacy is the practice of protecting personal, private or sensitive information, ensuring it's collected with the proper consent, kept secure and used only for authorized purposes, while respecting both individual rights and existing regulations.(come form builtin.com)

Rules:China: Personal Information Protection Law; GDPR (European Union General Data Protection Regulation.

Guidline： ISO 27001; SOC 2

Practices: Regular training and awareness of the importance and privacy of data privacy for employees.

Tools: Encrypt data and enforce controls for secure access.

Different between individuals and businesses

1. Personal data privacy is mainly concerned with protecting sensitive personal information, such as ID number, name, photo, etc., which, if improperly used or leaked, may have an impact on personal privacy, security and social credit system

Enterprise data privacy focuses on the protection of business secrets, customer data, and sensitive information related to business operations

2. In terms of value, personal data privacy is often less valuable than corporate data privacy. For example, A and B are large enterprises and competitors, A has A piece of data about its own enterprise changes, if B company gets this data and uses it, it is likely to change A and B's original position on their track. For individuals, however, the impact is minimal

ADVANCED TASKS

How to keep database security?

We divide into two part :keep data security and keep data base security

In frist part ,we should keep data security. In this condition, we assume that our data was stohlen or database was maliciously attacked by hackers and other technicians.

We should consentrate on data itself.

We can:

1. Encrypt data, such as symmetric encryption or asymmetric encryption
2. Create some spy data (fake data), lure attackers to tamper with, and prompt maintenance personnel
3. Periodically check and back up data

In second part, we should keep database security.

We can:

1. Configure a firewall
2. Monitor the system that stores the database in real time
3.. Limit outside visitors and enhance intrusion detection systems
4. User multi-identity authentication
5. Conduct regular security audits