BT：

a) In an autonomous campus security system, security robots can patrol, monitor, identify anomalies, report security incidents, and other activities around the campus. They can detect environmental changes such as temperature, smoke, sound, etc., through sensors, and communicate with other robots and central control systems.
b) Middleware may perform the following activities: coordinate communication between robots, data processing and fusion, task assignment, communication with a central control system, manage robot status.

MT：

a) Example: A campus is affected by a typhoon

Data required: Typhoon prediction system data (wind sensor data), temperature sensor data, humidity sensor data, location information, alarm time, building damage prediction data.

Suitable database type: relational database. Here's why:

Dataset: The data structure is relatively fixed, including sensor readings, timestamps, device status, etc., which can be stored in tabular form.

Scalability: While scalable to some extent, a distributed architecture may need to be considered for large-scale campuses.

Data consistency: Relational databases usually have good data consistency guarantees, which are essential for accurate data in emergency situations.

Performance: Relational databases can provide better performance for querying sensor data and device status over a specific period of time.

Security: Data security can be ensured through user rights management.

Maintenance and sustainability: Proven maintenance tools and technical support are available.

b)

决策因素	选择理由
Data set	The data structure is relatively fixed, and relational databases are suitable for tabular storage.

Scalability	Consider a distributed architecture to meet the needs of a large-scale campus.
Data consistency	Accurate data is needed in an emergency, and relational databases have a good guarantee.
Performance	The performance of querying data within a specific time period is good.
Aecurity	Data security can be ensured through user rights management.
Maintenance and sustainability	There are mature maintenance tools and technical support.