The Internet of Things (IoT) refers to a network of interconnected physical devices that communicate and exchange data over the internet. These devices include sensors, actuators, appliances, vehicles, and industrial equipment.

A typical IoT system consists of sensors that collect data, connectivity mechanisms that transmit data, and data processing platforms that analyze information. Sensors measure parameters such as temperature, humidity, motion, and pressure.

IoT applications are widespread. In smart homes, IoT devices control lighting, heating, security systems, and appliances. In healthcare, wearable devices monitor vital signs and support remote patient care. Industrial IoT improves manufacturing efficiency through predictive maintenance and process optimization.

Data generated by IoT devices is often processed using cloud computing platforms. Cloud services provide scalable storage and computing power. Edge computing is also used to process data closer to the source, reducing latency.

Security and privacy are major concerns in IoT systems. Many devices have limited computing resources, making them vulnerable to cyberattacks. Implementing encryption, authentication, and secure firmware updates is essential.

As IoT adoption grows, standardization and interoperability become increasingly important. Future IoT developments aim to integrate artificial intelligence and enhance system autonomy.