Networks:
Packetized networks: messages broken into packets which are then routed to destination
Main problem: No guarantee of QoS
Positive side: Do not need to rely on switched circuits for transmission
IP: “Best effort” delivery. Tries to deliver packet once. Does not retransmit if failure
TCP: Ensures reliable delivery

Databases:
DB: information retrieval system
RBAC ideal for DBs
Relational DB: Info stored as tables, ID is primary key of an entry
Use of primary and foreign keys to retrieve data
Query language used to retrieve data, not Turing complete
SQL injection attacks: Insertion of malicious statement into seemingly innocuous statement
Parameterized input: Pass only prepared statements to DB, helps combat SQL injections
Inference: Use tangential info to acquire target info
Can't reasonably encrypt DB; performance cost too high
SQL attack: most common is bulk extraction of data

Counters:
- Defensive coding
- Runtime prevention
- Detection