Packeted network
  - Can over commit packets to make up for lost ones
  - Data is sent in chunks

Circuited network (circuit-based)
  - Information is sent in a stream of data.
  - This stream sometimes blocks others from communicating.

TCP is connection-based, and thus required a connection to begin with a handshake.

Databases are simply data retrieval tools (collection of tables)
- Remote databases must send queries through packets when interacting, so now we must ensure its method of security

Database encryption
  - Can be applied to the entire database
  - Encrypting the database will severely harm performance
  - Need access to decryption key every time you need data

Inferential attacks - one of the hardest to defend against, because its just as good of a response to say no
  - Ex: I forgot my password page on most sites. It allows you to disqualify usernames by saying, “username not found” thus gaining information on valid usernames or not.
  - Two types
    - Illogical/incorrect queries
    - Preliminary step for attackers, gains information of the database structure
    - Blind SQL injection
    - Allows attackers to infer data present in the system, even when the system is considered secure to not display any information.

SQL Access Control
  - Two commands for managing access rights
    - Grant – allow access
    - Revoke – disallow access
  - Typical access rights
    - Select
    - Insert
    - Update
    - Delete
    - References

Can’t even encrypt keys for data because it ruins performance and they seriously are problems when it comes to inference attacks.