

Midterm Review

INF 551

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Topics

- Storage systems
- File systems
- File formats
- Data modeling

Storage systems

- Key characteristics
 - Capacity
 - Performance
 - Reliability
- Performance
 - Latency (delay, time not spent on data transfer)
 - Bandwidth (maximum rate)
 - Throughout (actual rate)

Storage systems

- Single drive:
 - Tape, hard drive, SSD
- RAID
 - Levels 0, 1, 4, and 5
 - Characteristics and problems

File systems

- Standalone
 - Metadata blocks (superblock, bimap, inodes)
 - Data blocks
 - Access: read and write
- Network file system
 - Message protocols
 - Failure recovery
- Caching, buffering, and issues

File formats

- JSON
- XML
- Unicode
- Conversion between JSON and XML
- XPath

Data modeling

- ER
 - Basic concepts, weak entity sets, is-a
- Relational modeling
 - Schema and instances
- Conversion of models
 - Basic cases
 - Handling many-one relations, weak entity set, is-a

Midterm logistics

- 3/2, Wednesday, in class
- Closed-book & notes
- No calculator needed