Elements of Healthcare Database

* Stores patient’s data
* Help medical organizations their role in the larger healthcare system
* Efficient record tracking (large volume)
* Information transfer between different providers
* Record of healthcare quality

MySQL

* Advantages
  + Data Security
  + On-Demand Scalability
  + High Performance
  + 24/7 Uptime
  + Transactional Support
  + Workflow Control
  + Cost efficient
  + Open source
* Disadvantages
  + Not efficient at handling large data sizes
  + Prone to data corruption
  + No check Constraints
  + Poor developing and debugging tools
  + Less high end than competitors

Oracle

* Advantages
  + Reduced operational cots
  + Database merging
  + Secure hybrid cloud environment
  + User security access
  + Data backup
  + Multiple database support
  + Scalability
  + Support multiple operating systems and hardware
  + Most robust tools
* Disadvantages
  + Complexity
  + Expensive
  + Difficult management
  + Hardware intensive

Microsoft SQL

* Advantages
  + Easy Installation
  + Performance efficiency
  + One of the most secure databases
  + Different pricing options
  + Data recovery
  + Microsoft product compatibility
* Disadvantages
  + Cost
  + Incompatible with non-Microsoft products and older hardware

Database Types

* Hierarchical
  + Tree structure
  + Single parent, multiple children
  + Advantages
    - Quick data retrieval
    - Referential integrity
  + Disadvantages
    - Difficulty in inserting unrelated data
    - No support for complex relationships
* Network
  + Many to Many relationships
  + Multiple parents, multiple children
  + Advantages
    - Fast access
    - More complex queries
  + Disadvantages
    - Familiarity of structure required
    - Difficult to update
* Relational
  + Uses tables with key fields
    - Primary key – unique identifier
    - Foreign key – links records across different tables
  + Easy to use
  + Easy modification
  + Advantages
    - Simple
    - Easy data retrieval
    - Data integrity
    - Flexible
  + Disadvantages
    - Slow
    - Unsecure for exposure to the internet
    - Not very good at modeling
    - Does not store large records well
* Object-Oriented Model
  + Data is represented as objects
  + Objects contain data and instructions for what to do with it
  + Advantages
    - Good for modeling
    - Handle various data types
    - Improved performance
  + Disadvantages
    - Expensive
    - Difficult to learn