Section 6: Data – Study Companion

* Lesson 6.1 – Introduction to the Management of Data
  + Why do we need database management systems?
  + Why do we need database research?
  + How are databases and the World Wide Web interconnected?
* Lesson 6.1 – Database Management Systems
  + How many layers are in a database management system?
  + What is the application layer?
  + How does the application layer work?
  + What is a database table?
  + How is data stored?
  + What are records?
  + What are fields?
* Lesson 6.1 – Activity – Types of Data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Integers | Floating Point Numbers | Characters | Character Strings | Boolean Values |
| Definition |  |  |  |  |  |
| Examples |  |  |  |  |  |

* Lesson 6.1 – Flat-File and Hierarchical Databases & Lesson 6.2 – More Databases
  + - What is a flat-file database?
    - How does a flat-file database store the data?
    - What is a hierarchical database?
    - What is a relational database?
    - What is a unique identifier?
    - What does PK and FK stand for?
    - What are object-oriented (OO) databases?
    - What are NoSQL databases?
    - What are graph stores?
    - What are wide-column stores?
    - What is document-format databases?
    - What are cloud databases?
    - What are data lakes?
    - What are distributed databases?
* Lesson 6.2 – Database Operations
  + - What is an SQL statement used for?
    - How does SQL and the database server interconnect?
    - What does the selection operation do?
    - What does the keyword SELECT do?
    - What does the keyword FROM do?
    - What does the keyword WHERE do?
    - What does the asterisk (\*) mean?
    - What is the union operation?
    - What is the product operation?
    - What is the join operation?
* Lesson 6.3 – Database Management and Administration Tools
  + - What are the DBA responsibilities?
    - Define business intelligence.
    - Name some Database Management Tools.