

Tutorial 1 Answer

1. Matching

- c data
- b database application
- l constraint
- g repository
- f metadata
- m data warehouse
- a information
- j user view
- k database management system
- h data independence
- e database
- i enterprise resource planning (ERP)
- r systems development life cycle (SDLC)
- o prototyping
- d enterprise data model
- q conceptual schema
- p internal schema
- n external schema

Tutorial 1 DBS

1. data: facts, text, graphics, images, etc.
2. database application: application program(s)
3. constraint: a rule that cannot be violated by database users
4. repository: centralized storehouse for all data definitions
5. metadata: includes data definitions and constraints
6. data warehouse: integrated decision support database
7. information: data placed in context or summarized
8. user view: logical description of portion of database
9. database management system: a software application that is used to create, maintain, and provide controlled access to user databases
10. data independence: separation of data description from programs
11. database: organized collection of related data
12. enterprise resource planning (ERP): a business management system that integrates all
13. systems development life cycle (SDLC): a structured, step-by-step approach to systems development
14. prototyping: a rapid approach to systems development
15. enterprise data model: a graphical model that shows the high-level entities for the organization and the relationships among those entities
16. conceptual schema: a comprehensive description of business data

17. internal schema: consists of two data models: a logical model and a physical model
18. external schema: consist of the enterprise data model and multiple user views

2. Order 1:M OrderLine
3. Contrast the following term

- *Data dependence; data independence.* With data dependence, data descriptions are included with the application programs that use the data, while with data independence the data descriptions are separated from the application programs.
- *Structured data; unstructured data.* Structured data refers to facts related to objects and events of importance in the user's environment and represent the traditional data that is easily stored and retrieved in traditional databases and data warehouses. Unstructured data refers to multimedia data, such as images, sound and video segments or to unstructured textual data. All these types of data are now stored as part of the user's business environment.
- *Data; information.* Data consist of facts, text, and other multimedia objects, while information is data that have been processed in such a way that it can increase the knowledge of the person who uses it.
- *Repository; database.* A repository provides centralized storage for all data definitions, data relationships, and other system components, while a database is an organized collection of logically related data.
- *Entity; enterprise data model.* An entity is an object or concept that is important to the business, while an enterprise data model is a graphical model that shows the high-level entities for the organization and the relationship among those entities.
- *Data warehouse; ERP system.* Both use enterprise level data. Data warehouses store historical data at a chosen level of granularity or detail, and are used for data analysis purposes, to discover relationships and correlations about customers, products, and so forth that may be used in strategic decision making. ERP systems enable organization's business processes and integrate operational data at the enterprise level, integrating all facets of the business, including marketing, production, sales, and so forth.
- *Personal databases; multitier databases.* A personal database is intended for a single user to manage small amounts of data in an efficient manner, and it resides on a personal computing device (such as a laptop or a smart phone). Multitier databases share multiple (sometimes very large numbers of) users. They house the user interface on client devices and the business logic may be maintained on multiple server layers to accomplish the business transactions requested by client devices.
- *Systems development life cycle; prototyping.* Both are systems development processes. The SDLC is a methodical, highly structured approach that includes many checks and balances. Consequently, the SDLC is often criticized for the length of time needed until a working system is produced, which occurs only at the end of the process. Increasingly, organizations use more rapid application development (RAD) processes, which follow an iterative process of rapidly repeating analysis, design, and implementation steps until you converge on the system the user wants. Prototyping is a widely used method within RAD. In prototyping, a database and its applications are iteratively refined through a close interaction of systems developers and users.
- *Enterprise data model; conceptual data model.* In an enterprise data model, the range and

contents of the organizational databases are set. Generally, the enterprise data model represents all of the entities and relationships. The conceptual data model extends the enterprise data model further by combining all of the various user views and then representing the organizational databases using ER diagrams.

- *Prototyping; Agile software development.* Prototyping is a rapid application development (RAD) method where a database and its application(s) are iteratively refined through analysis, design, and implementation cycles with systems developers and end users. Agile software development is a method that shares an emphasis on iterative development with the prototyping method yet further emphasizes the people and rapidity of response in its process.

4. Answer the following question

- a. Driver's name, address, and birthdate: structured data
- b. The fact that the driver's name is a 30-character field: metadata; fact describing property
- c. A photo image of the driver: unstructured data
- d. An image of the driver's fingerprint: unstructured data
- e. The make and serial number of the scanning device that was used to scan the fingerprint: structured data
- f. The resolution (in megapixels) of the camera that was used to photograph the driver: metadata; fact describing context
- g. The fact that the driver's birth date must precede today's date by at least 16 years: metadata; fact describing context