**Database Development and Application Tutorial 1&2**

1. i. What is the purpose of the largest databases used by e-commerce companies such as Amazon.com?

ii. How do the e-commerce companies use these databases?

| **i. The largest databases used by e-commerce companies are Web-activity databases used to track customer behavior so that they can do more accurate projection and planning.**  **ii. The e-commerce companies’ Web-activity databases are used to determine which Web page items are popular and successful, and to test if certain variations in Web page design will generate more orders.** |
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2. You are trying to justify a computerized data management system to your supervisor. You work in a service industry that deals directly with customers. How could collecting information about your customers provide a competitive advantage? What kind of software would you need to detect trends and make projections about customer activities?

| **To get students to broaden their horizon by looking at the business applications of databases and decision making.**  **Collect info for Strategic planning**  **Type of sw : data warehouse, analytical processing, CRM** |
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3. Explain the relationship between information, data and knowledge. Use a relevant example for each of the following organization:

i. Health care facility

ii. Institution of higher learning

iii. Law enforcement agency

**The objective of this question is for students to demonstrate understanding about various types of data for different business entities. Students should also explain about what information can be derived from data and how this information can be used in decision making.**

**i. Health care facility (e.g hospitals, clinics)**

**Types of diseases, frequency of occurrence, mortality rate**

**ii. Institution of higher learning**

**No. of students, popular courses, pass rate, graduation classification (e.g. 1st Class Hons…), employment within 6 months, etc**

**iii. Law enforcement agency (Police, Customs, Immigration)**

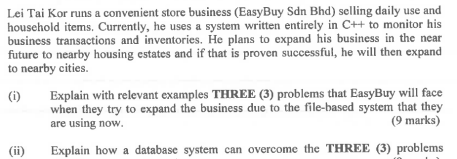
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**Types of crime, smuggling activities, emigration and migration data, etc**

4. How is a file-based system different from a database management system?

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6. What is data redundancy, and which characteristics of the file system can lead to it?

| **Data redundancy exists when unnecessarily duplicated data are found in the database. For example, a customer's telephone number may be found in the customer file, in the sales agent file, and in the invoice file. Data redundancy is symptomatic of a (computer) file system, given its inability to represent and manage data relationships. Data redundancy may also be the result of poorly-designed databases that allow the same data to be kept in different locations. (Here's another opportunity to emphasize the need for good database design!)** |
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7. Explain 5 types of databases with reference to the number of supported users.

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8. What is a DBMS, and what are its functions?

| **A DBMS is best described as a collection of programs that manage the database structure and that control shared access to the data in the database.**  **Current DBMSes also store the relationships between the database components; they also take care of defining the required access paths to those components.**  **The functions of a current-generation DBMS may be summarized as follows:**  ● **The DBMS stores the definitions of data and their relationships (metadata) in a data dictionary; any changes made are automatically recorded in the data dictionary.**  ● **The DBMS creates the complex structures required for data storage.**  ● **The DBMS transforms entered data to conform to the data structures in item** |
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| **2.**  ● **The DBMS creates a security system and enforces security within that system.**  ● **The DBMS creates complex structures that allow multiple-user access to the data.**  ● **The DBMS performs backup and data recovery procedures to ensure data safety.**  ● **The DBMS promotes and enforces integrity rules to eliminate data integrity problems.**  ● **The DBMS provides access to the data via utility programs and from programming languages interfaces.**  ● **The DBMS provides end-user access to data within a computer network environment**. |
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