

4. _____ is an approach to software development that combines data and procedures into a single object.
5. A(n) _____ is a type of logical database model that organizes data in a treelike structure.
6. A(n) _____ is one that has been in existence for a long time and that continues to be used to avoid the high cost of redesigning it.
7. A(n) _____ is a set of rules and procedures that govern transmission between the components in a network.
8. A(n) _____ is a shared network service that packages data into bundles for transmission but does not use error-correction routines.
9. The method of obtaining relevant information on networks by having a computer broadcast information directly to the users based on prespecified interests is called _____.
10. A(n) _____ is a secure connection between two points across the Internet.

Part III. Short-Answer Questions (15%, 簡答題@3%)

1. There are new technologies developed to protect user privacy, please list three privacy protection tools for such purpose.
2. How do fourth-generation languages and PC software tools differ from third-generation languages?
3. Please list the three basic operations of the relational database.
4. Please briefly distinguish between EDI and ATM.
5. Please list the five layers of Transmission Control Protocol/Internet Protocol.

Part IV. Case Study (個案題, 35%)

Please answer the two questions based on the following real-world case.

The grocery business is gigantic, with annual retail store sales that are estimated at \$650 billion. However, it is a very tough business because the profit margins are tiny, only 1 to 2 percent of sales. Moreover, the industry is very price competitive. Yet Webvan, which was founded in late 1996, chose groceries as the way to establish itself as a Web-based powerhouse. Aside from the tiny profit margin, on-line grocery sales face other problems. Most successful Web retail sales involve delivery several days after ordering via parcel delivery services such as UPS or FedEx. Yet people usually need grocery delivery right away, and the groceries usually include such spoilables as milk, cream, fresh vegetables, and meats.

A number of companies, including Peapod, HomeGrocer.com, Kozmo.corn, and Safeway have struggled to establish on-line grocery businesses. Webvan Group Inc. of Foster City, California (in the Silicon Valley), was the brainchild of Louis Borders, the cofounder of the very successful Borders bookstore chain. Webvans founders and management believed they could succeed where others were faltering by using a different business model. The company carried about 20,000 high-quality grocery items, including fresh fruits and vegetables, meats, and frozen foods, and delivered the orders to customers throughout a large metropolitan region. Webvan had no retail outlets, but instead it operated out of massive regional distribution centers of about 350,000 square feet each.