

A.I.S. Class 6: Outline

- Group Projects
- Group Work
- Flowcharting
- Learning Objectives for Chapter 7
- Systems Analysis and Design
- CLASSROOM PRESENTATION 1

Group Projects

Stage	Date	Grade
1	9/26	40
2	10/10	50
3	10/26	50
4	11/7	40
5	11/21	40
6	11/30	40
Final	12/12	40

Group Work

- Chapter 6 Problems 2, 5, 6, 7
- Narrative and flowcharts in the Chapter 1 Appendix for manual Purchases

Group Work - Chapter 6 Problem 6

■ Murthy & Groomer's Solution:

a) List the salesperson name and salary for all sales to customers whose balance outstanding is greater than 20000.

```
SELECT SALESPERSONS.S-NAME, SALESPERSONS.SALARY FROM SALESPERSONS,  
CUSTOMERS, SALES  
WHERE CUSTOMERS.CUST-NO = SALES.CUST-NO  
AND SALESPERSONS.SP-NO = SALES.SP-NO  
AND CUSTOMERS.BALANCE > 20000;
```

b) List the names and addresses of all customers who have been sold merchandise by salespersons employed before 1/1/96.

```
SELECT CUSTOMERS.C-NAME, CUSTOMERS.C-ADDRESS FROM CUSTOMERS,  
SALESPERSONS, SALES  
WHERE CUSTOMERS.CUST-NO = SALES.CUST-NO  
AND SALESPERSONS.SP-NO = SALES.SP-NO  
AND SALESPERSONS.DATE-EMPLOYED < #1/1/96#;
```

Group Work - Chapter 6 Problem 7

■ Murthy & Groomer's Solution

a) List the invoice number, item number, item description and selling price on all invoices by salesperson "John Doe."

```
SELECT INVOICES.INVOICE-NO, ITEMS-SOLD.ITEM-NO, INVENTORY.DESCRPTION,  
ITEMS-SOLD.SELLING PRICE FROM INVOICES, ITEMS-SOLD, INVENTORY  
WHERE INVOICES.INVOICE-NO = ITEMS-SOLD.INVOICE-NO  
AND ITEMS-SOLD.ITEM-NO = INVENTORY.ITEM-NO  
AND INVOICES.SALESPERSON = "John Doe";
```

b) List the customer names, invoice numbers, and invoice dates for all invoices where the quantity sold exceeded 100.

```
SELECT CUSTOMERS.NAME, INVOICES.INVOICE-NO, INVOICES.DATE FROM  
CUSTOMERS, INVOICES, ITEMS-SOLD  
WHERE CUSTOMERS.CUSTOMER-NO = INVOICES.CUSTOMER-NO  
AND INVOICES.INVOICE-NO = ITEMS-SOLD.INVOICE-NO  
AND ITEMS-SOLD.QUANTITY-SOLD > 100;
```

Flowcharting

■ Why learn flowcharts?

- ★ They are the primary means used by businesses at present to document information systems
- ★ Professional standards require auditors to document their understanding of accounting systems, and flowcharts are the method of choice for most accounting firms

Flowcharting

- What do we have to learn?
 - ★ The meaning and use of the symbols
 - ◆ skills assessed throughout the class
 - ★ Drawing flowcharts
 - ◆ skills assessed as part of group projects
 - ★ Reading and understanding flowcharts
 - ◆ skills assessed in examinations

Flowcharting

■ PLUS

- ★ Narrative and flowchart combinations are the means by which the authors communicate to us the typical generation and flow of information in traditional accounting systems
 - ◆ assessed throughout the class, by the projects, in the examinations, and by your future employers

Flowcharting

- Accounting Documents
 - ★ what are their names?
- In each case, can you explain:
 - ★ what is its purpose?
 - ★ who creates it?
 - ★ who is it sent to?
 - ★ why do they need it?
 - ★ what do they do with it?
- What are the accounting entries generated?

Learning Objectives for Chapter 7

- After studying this chapter you should be able to:
 - ◆ generally describe what causes the motivation for systems development
 - ◆ describe the nature of the systems life cycle
 - ◆ describe the systems development life cycle
 - ◆ describe the steps in the systems development life cycle
 - ◆ explain the tasks involved in systems analysis, systems design, systems implementation, and systems operation and maintenance

Learning Objectives for Chapter 7

- ◆ distinguish between logical, and physical modeling
- ◆ discuss the role of data modeling using ER diagrams and process modeling using data flow diagrams in the database design process
- ◆ describe project management techniques, with specific reference to Pert and Gantt charts
- ◆ discuss alternative to the traditional systems development life cycle such as CASE, RAD, JAD, and prototyping
- ◆ explain the main steps involved in the process of selecting and acquiring an accounting software package

Why develop systems?

- Unfulfilled user requirements regarding facilities, timeliness, user-friendliness etc.
- New technology may permit innovative solutions, greater efficiencies or lower costs
- Competition

Systems Life Cycle

■ Creation

- ★ SDLC

■ Startup

- ★ Implementation, error correction

■ Maturity

- ★ Stable system, routine maintenance

■ Decline

- ★ Dissatisfaction and changed requirements

Systems Development Life Cycle

- Systems Analysis
- Systems Design
- Systems Development
- Systems Implementation
- Systems Operation and Maintenance

Systems Analysis

- Requirements analysis
 - ★ Interviews, surveys, user observation etc.
- Systems survey
- Feasibility analysis
 - ★ Economic
 - ★ Technical
 - ★ Organizational

Systems Design (Logical)

- Logical (conceptual) modeling
 - ★ Data modeling
 - ◆ ER, EER, REA techniques - Chapter 8
 - ★ Process modeling
 - ◆ Data flow diagrams (DFDs)
- Model integration
 - ★ Will be trivial using our methods
 - ★ Built into Object-Oriented designs (UML)

ER v. UML

■ ER

Entity

Instance

Relationship

Attributes

UML

Class

Object

Association

Attributes

Entity – Instructor : Instance – Dr. Gillett

Systems Design (Physical)

- Creating the physical model
 - ★ Mapping REA models and DFDs to RDBMS
 - ★ Establishing relations (tables), keys, links, forms, reports etc.
- Documenting the physical model
 - ★ Modern development tools provide some documentation automatically
- Feasibility analysis

Systems Development

- Creation of data structures
- Detailed programming
- Testing
- User training
- Feasibility analysis

Systems Implementation

- Data conversion
- Systems conversion
 - ★ Sudden switch conversion
 - ★ Parallel conversion
 - ★ Phased-in conversion
- Documentation

Systems Operation and Maintenance

- Operation
- Maintenance
 - ★ Corrective
 - ★ Perfective
- Post-implementation review

Project Management

- Many development projects involve large numbers of people working over extended periods of time
- Clearly, system developments require proper project management
- A variety of techniques may be used
 - ★ PERT
 - ★ Gantt charts

Alternatives to SDLC

- Note that other authors and classes may offer variants of the traditional SDLC
- There are also proprietary variant methodologies such as SSADM
- Computer Assisted Software Engineering (CASE & ICASE)

User Involvement

- Critical success factor
- Rapid Application Development (RAD)
- Joint Application Development (JAD)
- Prototyping
 - ★ Elicit user requirements
 - ★ Build initial prototype
 - ★ Test and demonstrate to user
 - ★ Refine prototype until user satisfied
 - ★ Build working system (re-implement)

Software Package Acquisition

■ Accounting Software Packages

- ★ **Low end packages**

- ◆ \$100 - \$300
- ◆ Little configuration or customization

- ★ **Mid-range packages**

- ◆ \$5,000 - \$15,000

- ★ **High end packages**

- ◆ \$Ms
- ◆ ERP systems
- ◆ Implemented with consultancy support

Selecting Accounting Software Packages

- Requirements analysis and criteria specification
 - ★ Package features
 - ★ Support options
 - ★ Vendor quality
- Information collection
- Evaluation of alternatives and package/vendor selection

CLASSROOM PRESENTATION

■ Group Project Stage 1