

The background of the slide is a solid dark red color. A large, faint watermark of the Rutgers University seal is visible, centered behind the text. The seal features a sunburst design with the words 'RUTGERS UNIVERSITY' and '1823' around the perimeter.

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**Accounting Information
Systems**

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A.I.S. Class 6: Outline

- **Group Projects**
- **Group Work**
- **Flowcharting**
- **Learning Objectives for Chapter 7**
- **Systems Analysis and Design**
- **Business Transactions**

Group Projects

Stage	Date	Grade
1	9/21	50
2	10/5	50
3	10/19	50
4	11/2	50
5	11/16	50
6	11/30	50
Final	12/9	50

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;
```

Manual Purchases Flowcharts

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 happens to it in the end?
- 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
 - * distinguish between logical, and physical modeling

Learning Objectives for Chapter 7

- After studying this chapter you should be able to:
 - * 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	UML
Entity	Class
Instance	Object
Relationship	Association
Attributes	Attributes

Entity – Instructor : Instance – Dr. Gillett

Class – Instructor : Object – 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

Business Transaction

- A predefined set of activities and/or processes of Persons which is initiated by a Person to accomplish an explicitly shared business goal and terminated upon recognition of one of the agreed conclusions by all the involved Persons although some recognition may be implicit
 - * **Bilateral transaction**
 - The Persons include only the buyer and the seller (or agents acting for them)
 - * **Mediated transaction**
 - A third party mediates between the partners as agreed by them

Business Transaction

- Business transactions pass through five phases:
 - * **Planning**
 - Decide on action
 - * **Identification**
 - Exchange data to establish links
 - * **Negotiation**
 - Identify goods and/or services, and each other
 - * **Actualization**
 - Execute results of negotiation
 - * **Post-actualization**
 - Activities after delivery e.g. warranty coverage, service, etc.

Business Transaction

- Business transactions pass through five phases – examples:
 - * **Planning**
 - Seller publishes Catalog
 - Buyer sends Catalog Request to Seller
 - * **Identification**
 - Buyer send Availability and Price Request to Seller
 - Seller returns Availability and Price Results to Buyer
 - * **Negotiation**
 - Seller sends Order Request to Buyer
 - Buyer sends Offer to Seller
 - Seller send Counter Offer to buyer
 - Buyers sends Order Acceptance to Seller
 - * **Actualization**
 - Seller sends Advance Shipping Notice when goods are prepared for shipping
 - Buyers sends Receiving Report to Seller when inspected goods are accepted
 - Seller sends Invoice to Buyer after goods are shipped
 - Buyer sends Remittance Advice
 - * **Post-actualization**
 - Buyers sends Warranty Invocation to Seller

Persons

- An entity; i.e., a natural or legal person recognized by law as having legal rights and duties, able to make commitments, assume and fulfill obligations and capable of being held accountable for its actions
 - * **Partner**
 - Buyer
 - Seller
 - * **Regulator**
 - * **Third Party**
 - Escrow
 - Mediator
 - Guarantor
 - Notary
 - * **Agent**
 - Person acting for another person in a clearly specified capacity in the context of a business transaction
- A Person may be an individual, an organization, or a public administration

Open-EDI Scenario

- A formal specification of a class of business transactions having the same business goal
 - * Actual operations may proceed along different paths – for example, goods may be returned, or not – and the scenario describes all the possible paths for the transaction
 - * E.g.:
 - Sales
 - Materials acquisition
 - * See ISO 15944-4

Agreements, Commitments and Business Transactions

■ Agreement

- * An arrangement of reciprocated economic commitments between two partners where the abstract specification of terms of trade is incomplete and not subject to legal enforcement

■ Governed

- * An association between an economic agreement and the business transaction whose conduct and phases are subject to that economic agreement