

A.I.S. Class 8: Outline

- PEACHTREE
- Learning Objectives for Chapter 5
- Advanced Information Systems
- Group Work for Chapter 5
- Next time . . . Group Presentation Dates

PEACHTREE

- Compare the assignment requirements with the Appendix
 - ◆ Enter invoices
 - ◆ Enter cash receipts
 - ◆ Print Transaction Register (Journal)
 - ◆ Print Aged Receivables
 - ◆ Prepare transfer to G/L (journal entry)
 - ◆ Enter vendor invoices
 - ◆ Pay invoices and print checks
 - ◆ Create purchase orders
 - ◆ Calculate fixed asset depreciation
 - ◆ Add employees to payroll
 - ◆ Calculate payroll and produce checks
 - ◆ Update General Ledger

PEACHTREE

■ Some lessons

- * Even though this is an old package designed for DOS, it has a wide variety of facilities such as the various discounting arrangements, state taxes etc.
- * It offers a full range of accounting functions
- * Users typically maintain a rich set of client data
- * In many implementations, accounting personnel would be familiar only with parts of the system
- * It implements an accounting model very similar to that described in the Appendix to our textbook

PEACHTREE

■ Some more lessons

- * Although it can be used with no training and little preparation, avoiding and correcting errors both require effort, and training and experience are both good investments
- * Accounting errors cannot be deleted without trace
 - ◆ in the project you could always start again
 - ◆ since this is not realistic in practice, journal entries must normally be used
 - ◆ this is frustrating for students - but is also an important management control over defalcation by employees

PEACHTREE

■ Range: 18 – 47

■ Mean: 39

■ Std. Dev.: 6.1

■ Median: 39

Learning Objectives for Chapter 5

- After studying this chapter you should be able to:
 - ◆ describe and discuss the hierarchy of decision making that occur in transaction processing systems, decision support systems and executive information systems
 - ◆ describe the input, processing and output characteristics of a decision support system
 - ◆ describe the various components of decision support systems
 - ◆ describe the benefits and drawbacks of a decision support system

Learning Objectives for Chapter 5

- ◆ discuss concepts of the data warehouse, data mart, and data mining, which are methods of garnering intelligence from the volumes of data in transaction processing systems
- ◆ explain the characteristics of expert systems
- ◆ differentiate between transaction processing systems, decision support systems, and expert systems
- ◆ explain the various components of expert systems
- ◆ describe the knowledge representation methods used in developing expert systems

Learning Objectives for Chapter 5

- ◆ discuss the process of developing expert systems with specific reference to the knowledge acquisition and system validation steps
- ◆ explain the benefits and drawbacks of expert systems
- ◆ discuss the criteria for identifying applications that might benefit from expert systems technology
- ◆ discuss the accountant's role in expert systems

Advanced Information Systems

- Transaction Processing Systems (TPS)
- Decision Support Systems (DSS)
- Executive Information Systems (EIS)
- Data warehousing, marts and mining
- Expert Systems (ES)

Transaction Processing Systems

- Highly structured decisions
- Routine, fully programmable, repetitive
- Little judgment
- Easy to develop
- Low level employees
- Internal data
- Simple processing rules

Decision Support Systems

- Semi-structured decisions
- Non-routine, partially programmable
- Middle management
- Internal and external data
- Complex rules and models

Executive Information Systems

- Variant of DSS
- User-friendly, GUI-based
- Designed for top executives
- Information rich
- Drill down facilities

Data warehousing, marts and mining

■ Data warehouse

- * repository of historical business transaction data organized to facilitate efficient querying for decision support

■ Data mart

- * repository of data from operational and other sources designed to meet needs of specific users

■ Data mining

- * analysis of data for previously undiscovered relationships

Expert Systems

- Unstructured decisions
- Non-routine, heuristic reasoning
- Top level or middle management
- Internal and external data
- Expert rules

Expert Systems

- User Interface
- Domain Database
- Knowledge Base
- Inference Engine
 - * Forward chaining
 - * Backward chaining
- Explanation facility

Expert Systems

- Knowledge-based systems
- Rule-based expert systems
 - * Expert system shells
 - * AI programming languages
 - ◆ LISP
 - ◆ PROLOG
- Frames, Semantic Nets, Objects
- Case-based reasoning

Expert Systems

■ Knowledge engineering

* Knowledge acquisition

- ◆ Books, Manuals etc

- ◆ Knowledge elicitation

 - ➔ Interviews

 - ➔ Verbal Protocol Analysis

* Knowledge representation

■ Verification and validation

Expert Systems

■ Benefits

- * Scarce human expertise
- * Releases human experts for more difficult cases
- * Improved accuracy of judgments
- * Greater consistency and consensus
- * Training of novices
- * Preserves expertise within a firm

Expert Systems

■ Disadvantages

- * Suitable human experts hard to find
- * Experts disagree
- * Knowledge elicitation difficult and time-consuming
- * Expensive to maintain and modify
- * Potential for deskilling jobs
- * Hard to validate fully
- * User acceptance

Expert Systems - Accounting

- Risk Assessment
- Internal Control Evaluation
- Audit Program Generation
- Financial Disclosures
- Loan Evaluation
- Tax Accrual and Planning
- Financial Planning

Group Work for Chapter 5

- Discussion Questions
- Problems 1 & 3
- Appendix 1 - Automated Purchases and Payments