RUTGERS

Rutgers Business School
Newark and New Brunswick

33:010:458
Accounting Information Systems

Dr. Peter R. Gillett

Associate Professor
Department of Accounting, Business Ethics and Information Systems
Rutgers Business School–Newark and New Brunswick

A.I.S. Class 26: Outline

- Final Examination
- Sheldon Shirts
- Learning Objectives for Chapter 5
- Advanced Information Systems
- Group Work for Chapter 5

Final Examination

- Common Examination
- 4:00 – 7:00 on December 17, 2008
- Beck Auditorium
- The examination will be designed to last 167 minutes
- You will have 13 minutes extra to finish, to fill in Scantron forms, and to turn work in at the front desk After this there will be a 6 points per minute penalty
- Be sure to write your name & ID where required
- BE SURE TO TURN YOUR PAPERS IN ON THE CORRECT PILES FOR YOUR EXAMINATION!!!

Final Examination

- The Final Examination will have the following sections (points estimated):
  - A: Multiple Choice Questions – 50 x 3 points
  - B: System Flowcharting – 10 x 2 points
  - C: REA Modeling – 120 points
  - D: Abbreviations and Terminology – 10 x 2 points
  - E: Short Questions / Problems – 70 points
  - F: Relational Databases and ACCESS – 6–8 questions, 120 points altogether

Sheldon Shirts

- Stage 7 – December 10
  - * Produce Final Report on the project as described in the original assignment note
  - * Remove Stage 6 printed materials only – leaving Stages 1–4, 7
  - * For Stage 7, print & file Final Report as above, together with revised versions of:
    - Sales Revenue
    - Accounts Receivable (12/31/2006 & 3/31/2007)
    - Credit balances (12/31/2006 & 3/31/2007)
    - Aged Debts 3/31/2007
    - Prior Revenue written off by credits
    - Total Cash Receipts
    - Back Orders by Customer
    - Sales Analyses
      - Month
      - Product
      - Type of customer (D, M, X)
    - Returns Report
      - Show, by month & overall, total value shipped, value and % of resulting returns, value and % of credit notes issued
  - * Combine databases, including tables, forms, queries, macros and reports, for all cycles & print the allocated report for each of the cycles
  - * Submit databases via Digital Dropbox using previous naming conventions

Sheldon Shirts

- Accounting Issues
  - Does February Revenue include March Credit Notes?
  - Credit Balances report should show Customers whose overall balance is negative, removed from Accounts Receivable. In this respect, it is like the Accounts Receivable report, but showing the negative balances
  - A credit balance for a given shipment should be netted against debit balances for other shipments , and included in Accounts Receivable and Aged Debts, if the net customer balance is positive
  - Aged Debts?
  - Analyses should be analyses and should NOT include lists of transactions – analysis of Sales Revenue by customer type should be a three or four line report!
  - Reports should have parameterized Start and End Dates

Sheldon Shirts

- ACCESS Issues
  - Outer Joins
  - Nz(X)
    - returns 0 if X is null, and X otherwise
    - effectively the same as:
      - IIF(IsNull(X),0,X)
  - Summarization of multiple transactions
  - Total lines that include percentages
    - % for total is NOT total of percentages!!!
  - Age Days: DateDiff("d",[InvoiceDate],[End Date])
  - 0-30: IIf([Age Days]<=30,[Outstanding Balance],0)
  - 31-60: IIf([Age Days]>30 And [Age Days]<=60,[Outstanding Balance],0)
  - 61-90: IIf([Age Days]>60 And [Age Days]<=90,[Outstanding Balance],0)
  - 0ver90: IIf([Age Days]>90,[Outstanding Balance],0)

Sheldon Shirts

- Report these specific amounts and reconcile:

Accounts Receivable 3/31/2007	309548	
Less: Credit Balances 3/31/07	(29400)	
		280148
Account Receivable 12/31/2006	82452	
Less: Credit Balances 12/31/2006	(0)	
		(82452)
		197696
Cash Receipts 1st Quarter 2007		663372
		861068
Sales Revenue 1st Quarter 2007	862256	
Less: Reversal of prior year Revenue	(1188)	
		861068

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
  * 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

Learning Objectives for Chapter 5

- After studying this chapter you should be able to:
  * 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
  * 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