

Case Study for Information Management

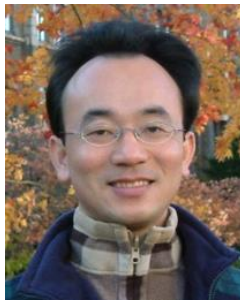
資訊管理個案

Building Information Systems: Electronic Medical Records (Chap. 13)

1031CSIM4C13

TLMXB4C (M1824)

Tue 2, 3, 4 (9:10-12:00) B425



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2014-12-23

課程大綱 (Syllabus)

週次 (Week)	日期 (Date)	內容 (Subject/Topics)
1	103/09/16	Introduction to Case Study for Information Management
2	103/09/23	Information Systems in Global Business: UPS (Chap. 1)
3	103/09/30	Global E-Business and Collaboration: NTUC Income (Chap. 2)
4	103/10/07	Information Systems, Organization, and Strategy: iPad and Apple (Chap. 3)
5	103/10/14	IT Infrastructure and Emerging Technologies: Salesforce.com (Chap. 5)
6	103/10/21	Foundations of Business Intelligence: Lego (Chap. 6)

課程大綱 (Syllabus)

週次 (Week)	日期 (Date)	內容 (Subject/Topics)
7	103/10/28	Telecommunications, the Internet, and Wireless Technology: Google, Apple, and Microsoft (Chap. 7)
8	103/11/04	Securing Information System: Facebook (Chap. 8)
9	103/11/11	Midterm Report (期中報告)
10	103/11/18	期中考試週
11	103/11/25	Enterprise Application: Border States Industries Inc. (BSE) (Chap. 9)
12	103/12/02	E-commerce: Amazon vs. Walmart (Chap. 10)

課程大綱 (Syllabus)

週次	日期	內容 (Subject/Topics)
13	103/12/09	Knowledge Management: Tata Consulting Services (Chap. 11)
14	103/12/16	Enhancing Decision Making: CompStat (Chap. 12)
15	103/12/23	Building Information Systems: Electronic Medical Records (Chap. 13) Managing Projects: JetBlue and WestJet (Chap. 14)
16	103/12/30	Final Report I (期末報告I)
17	104/01/06	Final Report II (期末報告II)
18	104/01/13	期末考試週

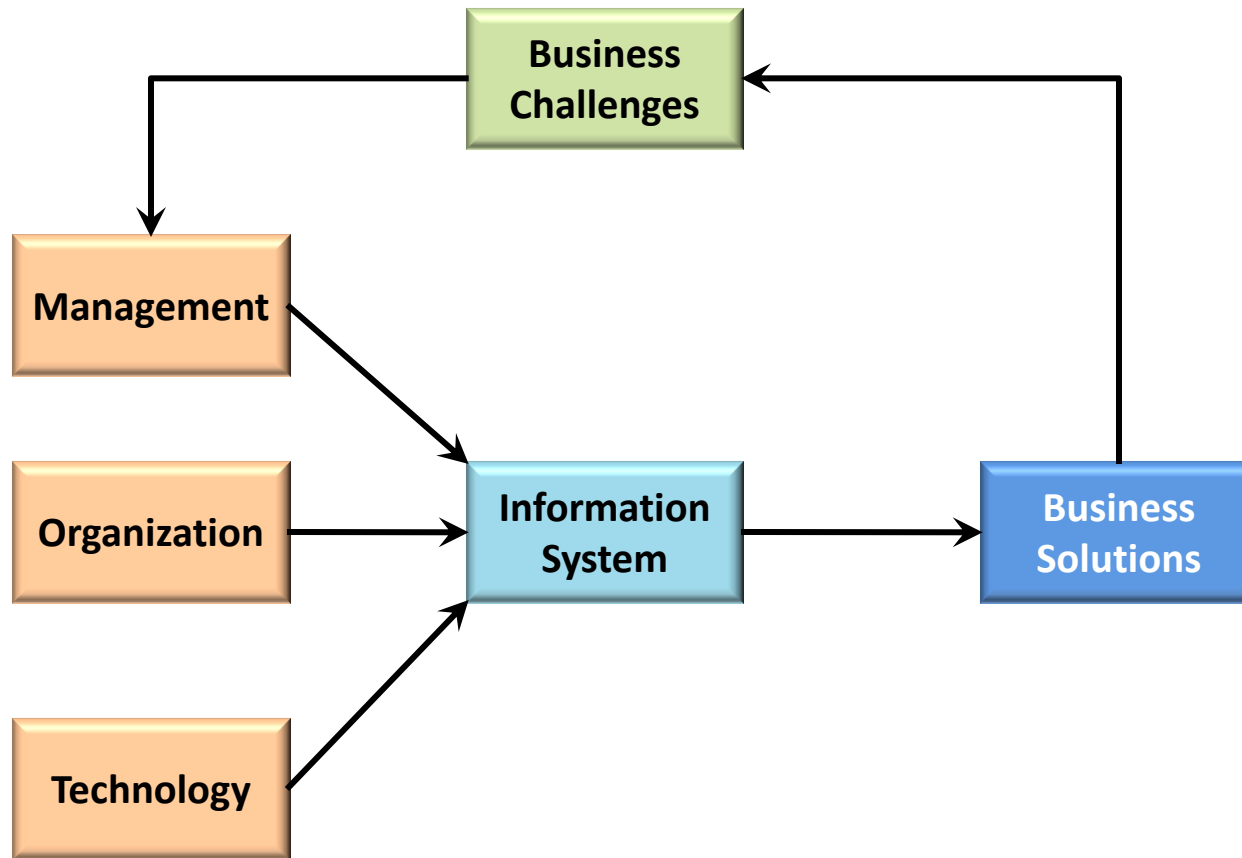
Chap. 13
Building Information Systems:
Electronic Medical Records

Case Study: Electronic Medical Records

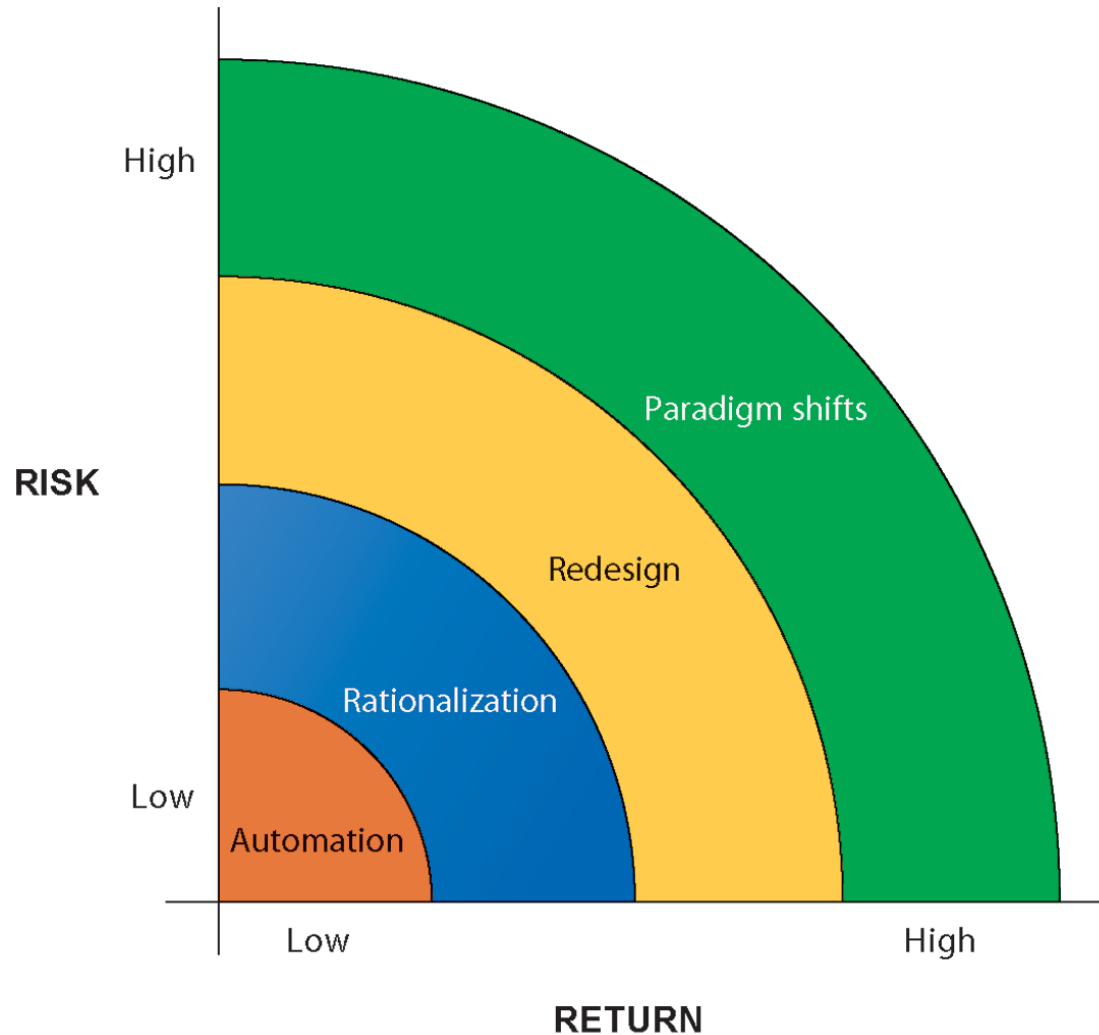
Are Electronic Medical Records a Cure for Health Care? (Chap. 13)

1. What management, organization, and technology factors are responsible for the difficulties in building electronic medical record systems? Explain your answer.
2. What stages of system-building will be the most difficult for building electronic medical record systems? Explain your answer.
3. What is the business and social impact of not digitizing medical records (to individual physicians, hospitals, insurers, patients)?
4. What are business and social benefits of digitizing medical recordkeeping?
5. Name two important information requirements for physicians, two for patients, and two for hospitals that should be addressed by electronic medical records systems.
6. Diagram the "as-is" and "to-be" process for prescribing a medication for a patient if an EMR system is implemented.

Overview of Fundamental MIS Concepts



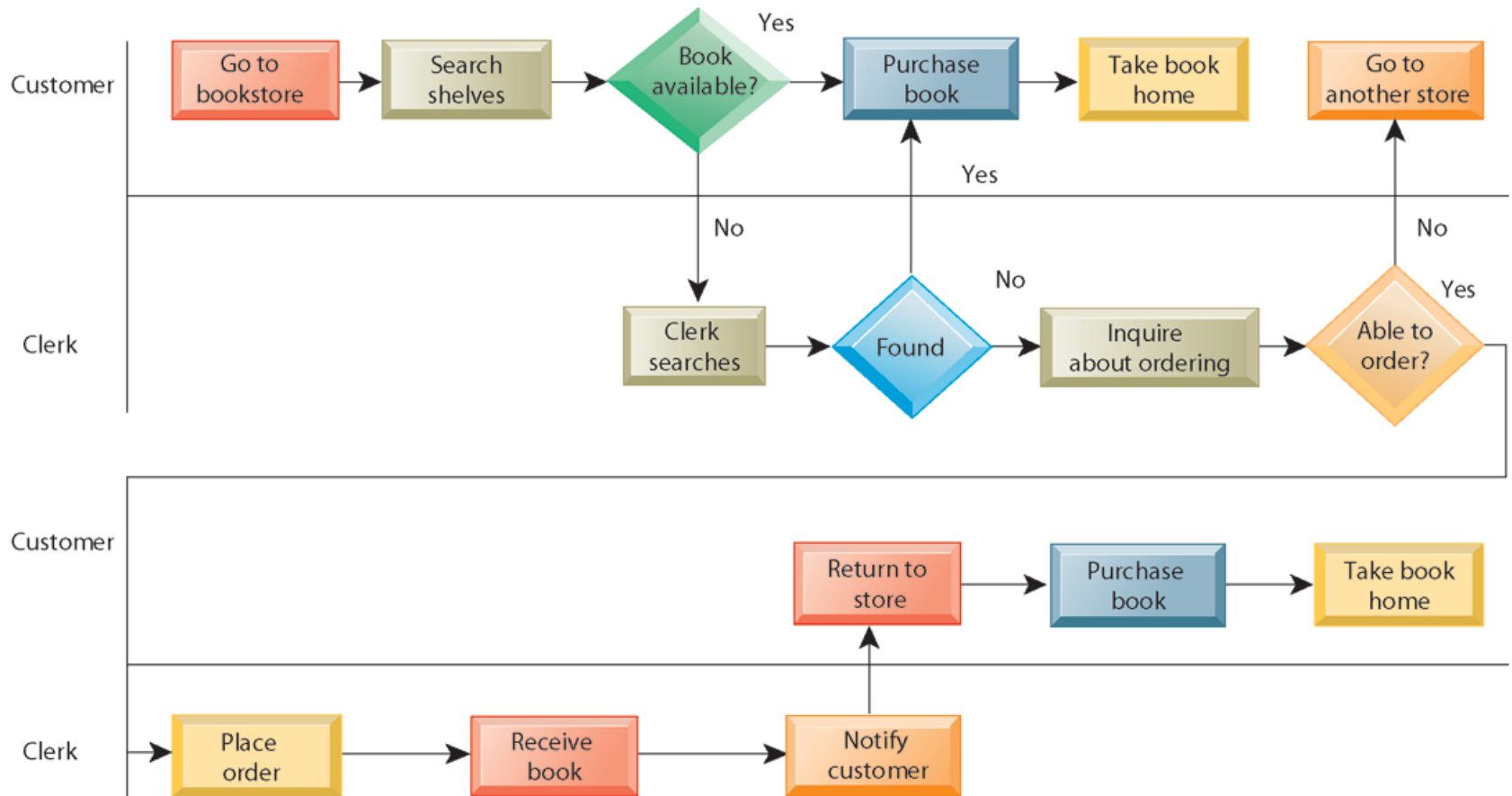
ORGANIZATIONAL CHANGE CARRIES RISKS AND REWARDS



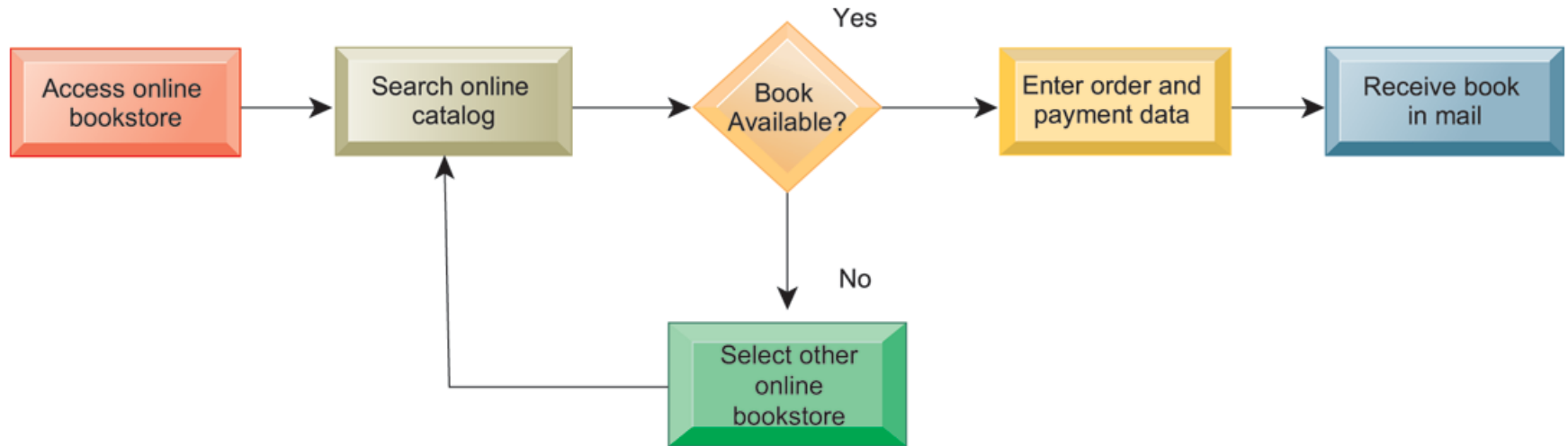
Business Process Management (BPM)

- Business Process Management (BPM)
 - Variety of tools, methodologies to analyze, design, optimize processes
 - Used by firms to manage business process redesign
- Steps in BPM
 1. Identify processes for change
 2. Analyze existing processes
 3. Design the new process
 4. Implement the new process
 5. Continuous measurement

AS-IS BUSINESS PROCESS FOR PURCHASING A BOOK FROM A PHYSICAL BOOKSTORE



REDESIGNED PROCESS FOR PURCHASING A BOOK ONLINE



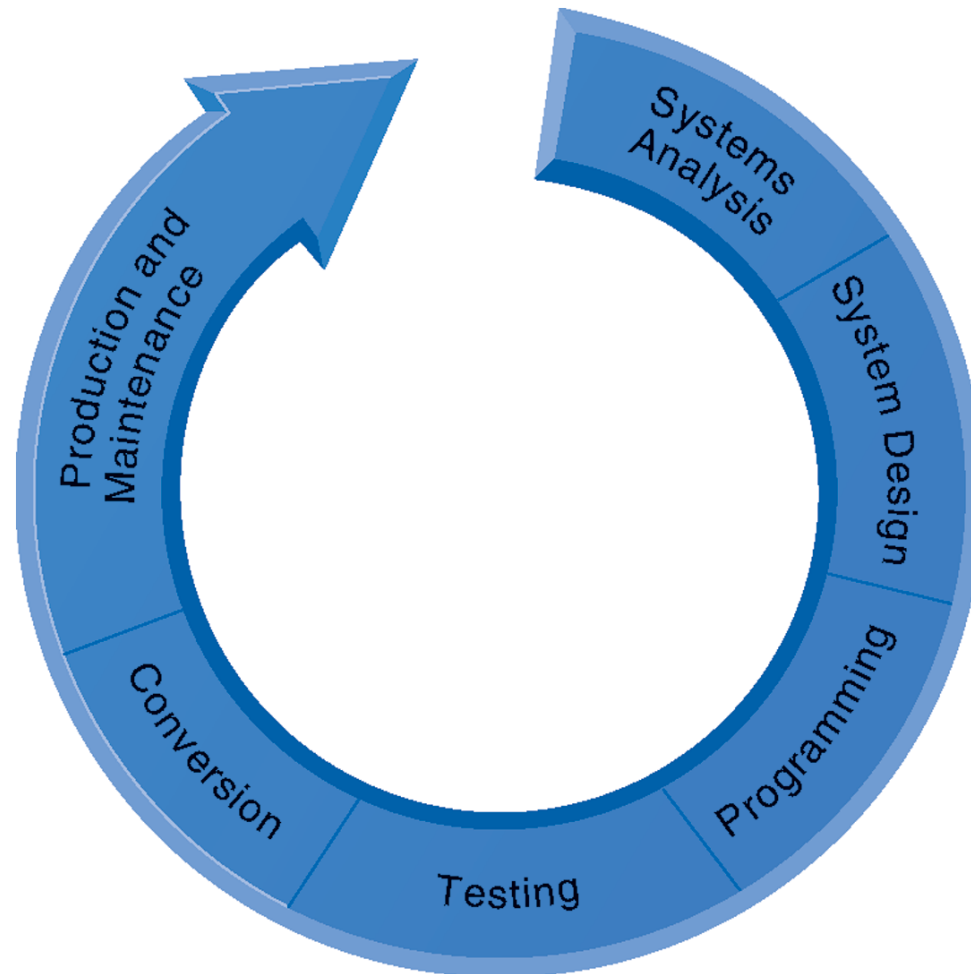
Business Process Redesign

- Variety of tools for BPM, to
 - Identify and document existing processes
 - Identify inefficiencies
 - Create models of improved processes
 - Capture and enforce business rules for performing processes
 - Integrate existing systems to support process improvements
 - Verify that new processes have improved
 - Measure impact of process changes on key business performance indicators

Systems Development (SD)

- Activities that go into producing an information system solution to an organizational problem or opportunity
 1. Systems analysis
 2. Systems design
 3. Programming
 4. Testing
 5. Conversion
 6. Production and maintenance

THE SYSTEMS DEVELOPMENT PROCESS



Systems Analysis (SA)

- Analysis of problem to be solved by new system
 - Defining the problem and identifying causes
 - Specifying solutions
 - Systems proposal report identifies and examines alternative solutions
 - Identifying information requirements
- Includes feasibility study
 - Is solution feasible and good investment?
 - Is required technology, skill available?

System Analysis (SA) (cont.)

- Establishing information requirements
 - Who needs what information, where, when, and how
 - Define objectives of new/modified system
 - Detail the functions new system must perform
- Faulty requirements analysis is leading cause of systems failure and high systems development cost

Systems Design (SD)

- Describes system specifications that will deliver functions identified during systems analysis
- Should address all managerial, organizational, and technological components of system solution
- Role of end users
 - User information requirements drive system building
 - Users must have sufficient control over design process to ensure system reflects their business priorities and information needs
 - Insufficient user involvement in design effort is major cause of system failure

Systems Design: Design Specifications

<p>OUTPUT Medium Content Timing</p> <p>INPUT Origins Flow Data entry</p> <p>USER INTERFACE Simplicity Efficiency Logic Feedback Errors</p> <p>DATABASE DESIGN Logical data model Volume and speed requirements File organization and design Record specifications</p>	<p>PROCESSING Computations Program modules Required reports Timing of outputs</p> <p>MANUAL PROCEDURES What activities Who performs them When How Where</p> <p>CONTROLS Input controls (characters, limit, reasonableness) Processing controls (consistency, record counts) Output controls (totals, samples of output) Procedural controls (passwords, special forms)</p> <p>SECURITY Access controls Catastrophe plans Audit trails</p>	<p>DOCUMENTATION Operations documentation Systems documents User documentation</p> <p>CONVERSION Transfer files Initiate new procedures Select testing method Cut over to new system</p> <p>TRAINING Select training techniques Develop training modules Identify training facilities</p> <p>ORGANIZATIONAL CHANGES Task redesign Job redesign Process design Organization structure design Reporting relationships</p>
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Completing the Systems Development Process

- Programming:
 - System specifications from design stage are translated into software program code
- Testing
 - Ensures system produces right results
 - Unit testing: Tests each program in system separately
 - System testing: Test functioning of system as a whole
 - Acceptance testing: Makes sure system is ready to be used in production setting
 - Test plan: All preparations for series of tests

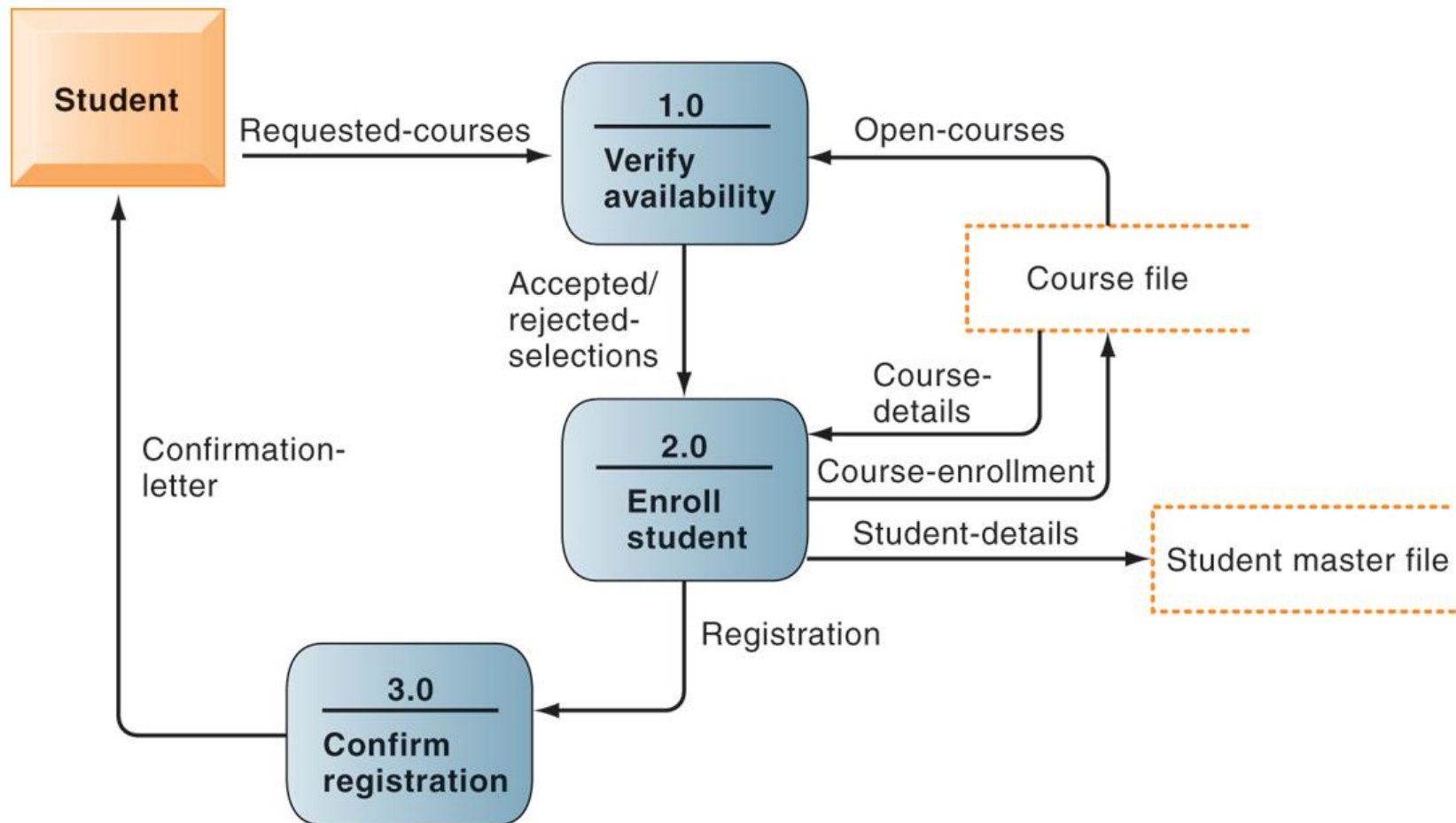
A SAMPLE TEST PLAN TO TEST A RECORD CHANGE

Procedure		Address and Maintenance "Record Change Series"		Test Series 2		
Prepared By:		Date:		Version:		
Test Ref.	Condition Tested	Special Requirements	Expected Results	Output On	Next Screen	
2.0	Change records					
2.1	Change existing record	Key field	Not allowed			
2.2	Change nonexistent record	Other fields	"Invalid key" message			
2.3	Change deleted record	Deleted record must be available	"Deleted" message			
2.4	Make second record	Change 2.1 above	OK if valid	Transaction file	V45	
2.5	Insert record		OK if valid	Transaction file	V45	
2.6	Abort during change	Abort 2.5	No change	Transaction file	V45	

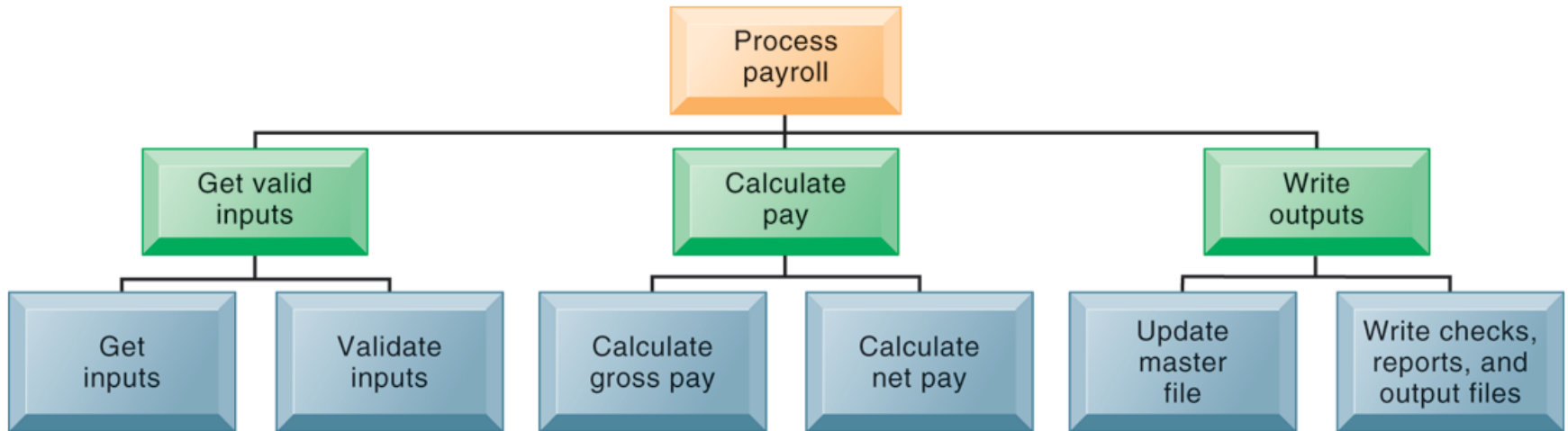
Systems Development

SUMMARY OF SYSTEMS DEVELOPMENT ACTIVITIES	
CORE ACTIVITY	DESCRIPTION
Systems analysis	Identify problem(s) Specify solutions Establish information requirements
Systems design	Create design specifications
Programming	Translate design specifications into code
Testing	Unit test Systems test Acceptance test
Conversion	Plan conversion Prepare documentation Train users and technical staff
Production and maintenance	Operate the system Evaluate the system Modify the system

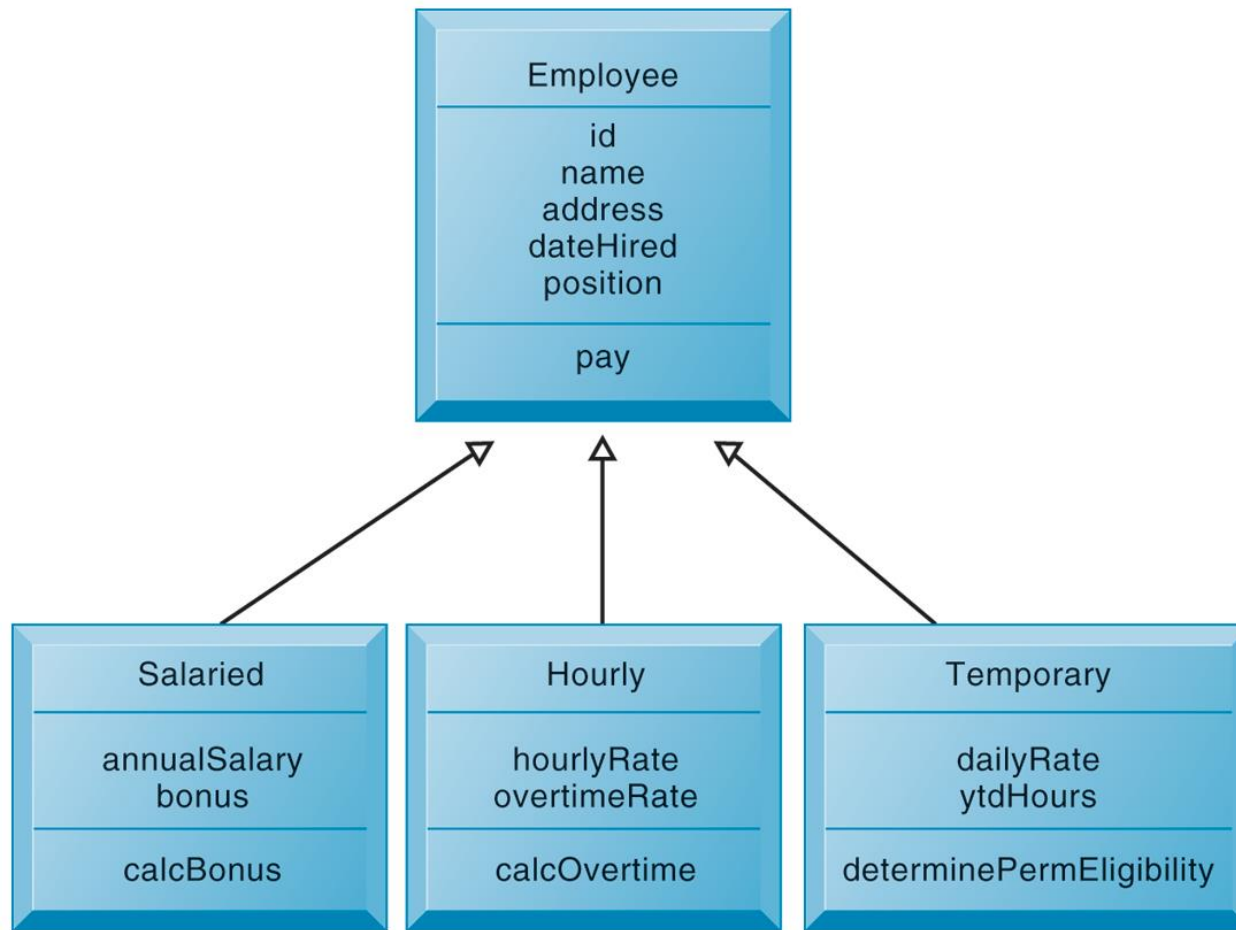
DATA FLOW DIAGRAM FOR MAIL-IN UNIVERSITY REGISTRATION SYSTEM



HIGH-LEVEL STRUCTURE CHART FOR A PAYROLL SYSTEM



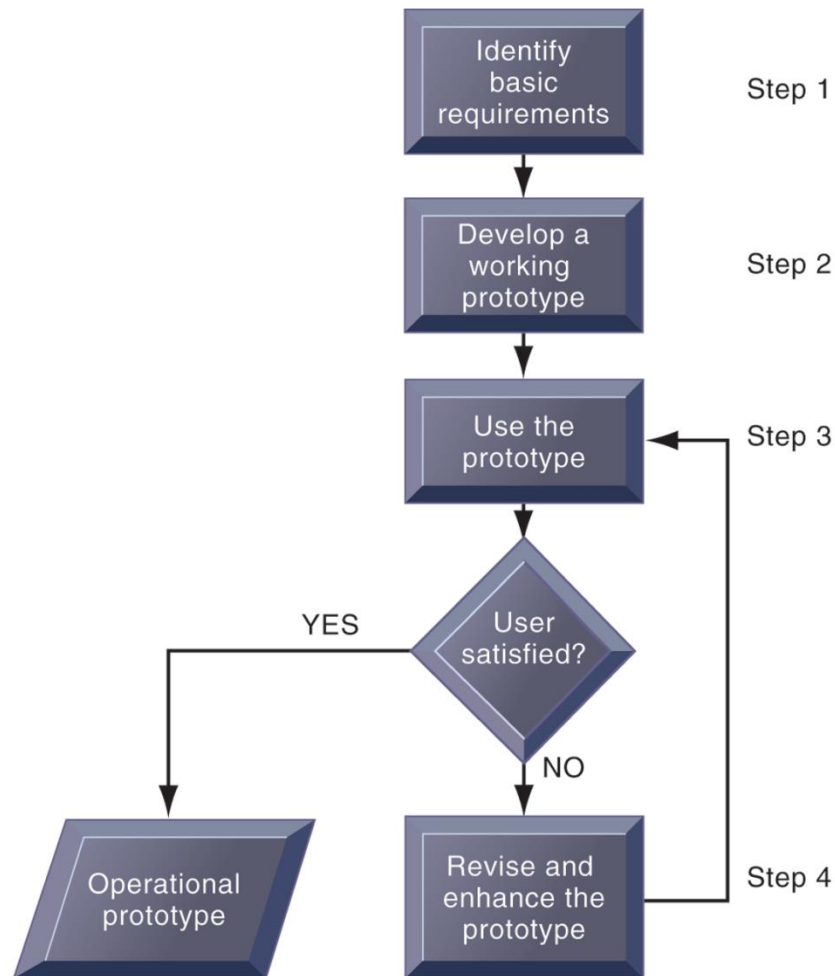
CLASS AND INHERITANCE



Alternative Systems-Building Methods

1. Traditional systems life-cycle
2. Prototyping
3. End-user development
4. Application software packages
5. Outsourcing

THE PROTOTYPING PROCESS



TOTAL COST OF OFFSHORE OUTSOURCING

TOTAL COST OF OFFSHORE OUTSOURCING				
Cost of outsourcing contract	\$10,000,000			
Hidden Costs	Best Case	Additional Cost (\$)	Worst Case	Additional Cost (\$)
1. Vendor selection	0%	20,000	2%	200,000
2. Transition costs	2%	200,000	3%	300,000
3. Layoffs & retention	3%	300,000	5%	500,000
4. Lost productivity/cultural issues	3%	300,000	27%	2,700,000
5. Improving development processes	1%	100,000	10%	1,000,000
6. Managing the contract	6%	600,000	10%	1,000,000
Total additional costs		1,520,000		5,700,000
	Outstanding Contract (\$)	Additional Cost (\$)	Total Cost (\$)	Additional Cost
Total cost of outsourcing (TCO) best case	10,000,000	1,520,000	11,520,000	15.2%
Total cost of outsourcing (TCO) worst case	10,000,000	5,700,000	15,700,000	57.0%

Application Development for the Digital Firm

- Rapid Application Development (RAD)
 - Joint Application Design (JAD)
 - Agile Development
- Component-based Development and Web Services
 - Component-based Development
 - Web Services and Service-Oriented Computing

Rapid Application Development (RAD)

- Process of creating workable systems in a very short period of time
- Utilizes techniques such as:
 - Visual programming and other tools for building graphical user interfaces
 - Iterative prototyping of key system elements
 - Automation of program code generation
 - Close teamwork among end users and information systems specialists

Joint Application Design (JAD)

- Used to accelerate generation of information requirements and to develop initial systems design
- Brings end users and information systems specialists together in interactive session to discuss system's design
- Can significantly speed up design phase and involve users at intense level

Agile Development

- Focuses on rapid delivery of working software by breaking large project into several small sub-projects
- Subprojects
 - Treated as separate, complete projects
 - Completed in short periods of time using iteration and continuous feedback
- Emphasizes face-to-face communication over written documents, allowing collaboration and faster decision making

Component-based Development

- Groups of objects that provide software for common functions (e.g., online ordering) and can be combined to create large-scale business applications
- Web services
 - Reusable software components that use XML and open Internet standards (platform independent)
 - Enable applications to communicate with no custom programming required to share data and services
 - Can engage other Web services for more complex transactions
 - Using platform and device-independent standards can result in significant cost-savings and opportunities for collaboration with other companies

Case Study: JetBlue and WestJet

JetBlue and WestJet: A Tale of Two IS Projects (Chap. 14)

1. How important is the reservation system at airlines such as WestJet and JetBlue? How does it impact operational activities and decision making?
2. Evaluate the key risk factors of the projects to upgrade the reservation systems of WestJet and JetBlue.
3. Classify and describe the problems each airline faced in implementing its new reservation system. What management, organization, and technology factors caused those problems?
4. Describe the steps you would have taken to control the risk in these projects.

資訊管理個案

(Case Study for Information Management)

1. 請同學於資訊管理個案討論前
應詳細研讀個案，並思考個案研究問題。
2. 請同學於上課前複習相關資訊管理相關
理論，以作為個案分析及擬定管理對策的
依據。
3. 請同學於上課前
先繳交個案研究問題書面報告。

References

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