Lecture Noted
Information Systems Development (2/2012)
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--Chapter 01--
PAGE 4
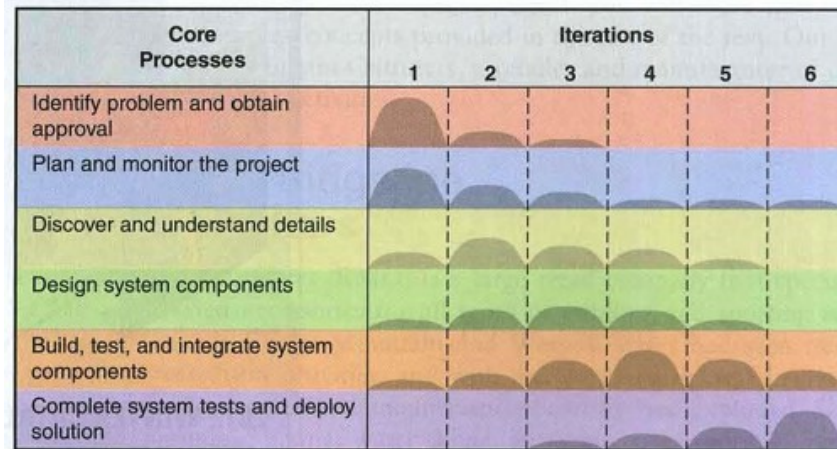SOFTWARE DEVELOPMENT AND SYSTEM ANALSYSIS AND DESIGN
1. Tell student computer is used everywhere
2. Grown up of high technology
   - Laptop
   - iPad
   - Social network (Facebook, Twitter)
   - Mobile working
3. Tell student, from that I said it relating with
   - Computer Software
   - Programs
   - Computer Application   --> WinApp, MacApp, LiunxApp
   - Web Application
   - Mobile Application
     ○ iOS
     ○ Android
     ○ Windows Mobile
4. Ask student "Q: What is system analysis and design and why is it important?"
5. Ask student " Q: What is Information System"
   - The set of computer components keeps data
   - Create, Delete, Update, Search, Display
6. Ask student "How difference between the course of graduate (ITM,IST) and bachelor of computer science and computer engineer.
     ○ Tell student, it is an idea and knowledge include to improve into project (Not only Insert, Delete, Update)

PAGE 5,
7. Tell student, when you crete a house, you will talk your house imagination with an architect
   - Architect
     ○ Draw
     ○ Design
     ○ Get detail and price material to create the house
     ○ Evaluate the house creation price
8. Ask student, WHEN you or your company what to create a software. Two person that first relates with you
   - Software Analysis (SA)
     ○ Understand
     ○ Specific
   - Software Design (SD)
     ○ Describe the details
   - Programmer
   - Software Tester
   - etc.

SYSTEM DEVELOPMENT LIFE CYCLE
9. Tell about, "framework to guide and coordinate" the work of project team called
   ○ "SDLC: System Development Life Cycle"
   ○ Show Figure 1-4

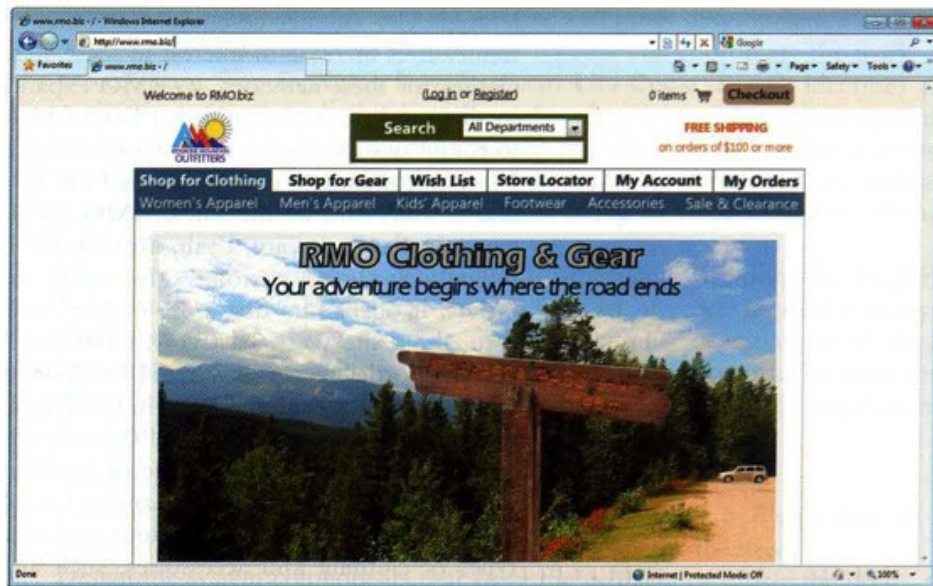| Core Processes	Iterations					
	1	2	3	4	5	6
Identify problem and obtain approval						
Plan and monitor the project						
Discover and understand details						
Design system components						
Build, test, and integrate system components						
Complete system tests and deploy solution						

   ○ It consists with the six core processes
10. Ask student, "Why many development software deliver late?"
   • Feature or many part of software that user do not want to uses
   • The user change his requirements
   • Evaluating total cost incorrectly
   • Estimating creation time incorrectly
   • Just found difficult problems
   • Etc.
11. Ask student, "How to Solve the problem that i was said ?"
   ○ Change user to be Stakeholder
   ○ Get requirements and analysis until understand the user really need
   ○ One technique, if your development company uses Water fall, changing to applied
     ▪ Agile Development

Page 6
INTRODUCTION TO RIDGELINE MOUNTAIN OUTFITTERS
12. Tell student about RMO company
   ○ Large company
   ○ Sale
     ▪ Clothing
     ▪ Accessories for outdoor, sporting activities
   ○ History
     ▪ 1980 – 1990, located Park City, Utah
       • Selling directly to customers via Catalogs, Mail-in, and Telephone orders
     ▪ 1994, expanded 10 outlets to West (Sunset)
       • Web-based sales $200Milion
       • Retail store $67M
       • Telephone+Mail order $10M
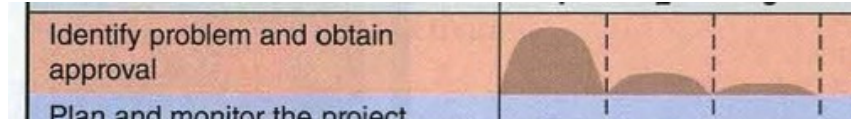   ○ Show Figure 1-2 and 1-3

13. Tell student the SDLC having 6 core processes which this chapter give overview each core process into each day (totally 6 day). For more details, it will be present each chapter later.
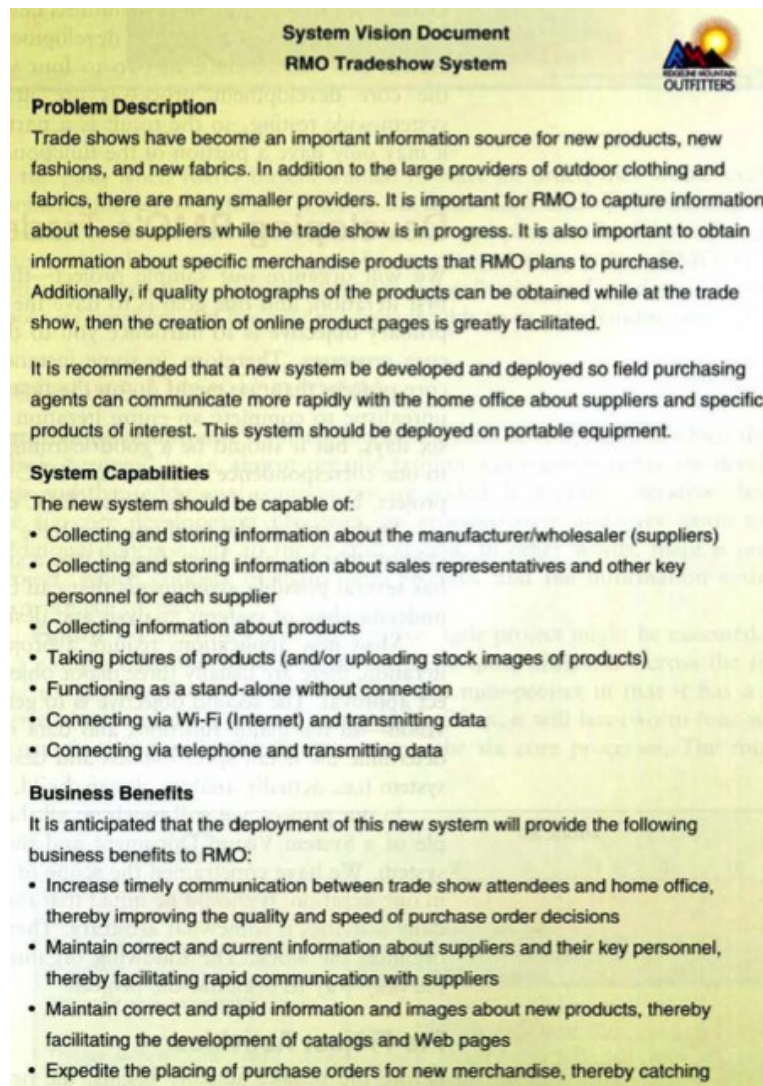   ◦ The case of RMO developing information system will be used demonstration how to develop SDLC.

Page 9
PRE-PROJECT ACTIVITIES
   14. Before developing, we will know about RMO company
      • CORE1 (Identify problem and obtain approval)

      ◦ What is problem
      ◦ Checking the target if we apply IT, it will improve or solve the company's problem.
      ◦ Objectives?
      • Write "System Visual Document" for
      ◦ Identifying benefits to company
        ▪ Estimating beneficial cost is improved
      ◦ Functional capabilities for the system
      • Tell about story in picture

System Vision Document
RMO Tradeshow System

Problem Description

Trade shows have become an important information source for new products, new fashions, and new fabrics. In addition to the large providers of outdoor clothing and fabrics, there are many smaller providers. It is important for RMO to capture information about these suppliers while the trade show is in progress. It is also important to obtain information about specific merchandise products that RMO plans to purchase. Additionally, if quality photographs of the products can be obtained while at the trade show, then the creation of online product pages is greatly facilitated.

It is recommended that a new system be developed and deployed so field purchasing agents can communicate more rapidly with the home office about suppliers and specific products of interest. This system should be deployed on portable equipment.

System Capabilities

The new system should be capable of:

- Collecting and storing information about the manufacturer/wholesaler (suppliers)
- Collecting and storing information about sales representatives and other key personnel for each supplier
- Collecting information about products
- Taking pictures of products (and/or uploading stock images of products)
- Functioning as a stand-alone without connection
- Connecting via Wi-Fi (Internet) and transmitting data
- Connecting via telephone and transmitting data

Business Benefits

It is anticipated that the deployment of this new system will provide the following business benefits to RMO:

- Increase timely communication between trade show attendees and home office, thereby improving the quality and speed of purchase order decisions
- Maintain correct and current information about suppliers and their key personnel, thereby facilitating rapid communication with suppliers
- Maintain correct and rapid information and images about new products, thereby facilitating the development of catalogs and Web pages
- Expedite the placing of purchase orders for new merchandise, thereby catching

- Problem description
  - Trade show have become an importance source for new product and current product. Online web can communicate to customer rapidly and the company many used online to check the interest or need of customer.
- System capabilities
  - Tell student, when we write down in each topic in bullet the SA can keep the requirement quickly.
- Business benefits
  - A lot
  - Ask student, You think about Apply Online store.

Page 11
- Early, RMO needs a potable system that can be used by purchasing agents
- Technology is grown up quickly, using mobile devices can access web application quickly then using close system in a portable system.

DAY1
RMO-SUPPLIER INFORMATION SUBSYSTEM
Page 11

Plan and monitor the project

15. Planning day consist of works
    • Team reviewing System Document
    • Verifying need of Stakeholder or users
    • Scope of project?
    • What is the problem to be solved?
    • How to Plan the project?
        1. Dividing the system into subsystems --> Called
           "Mini-Project", "Iteration", "Work BreakDown"

Work Breakdown Structure

I. Discover and understand the details of all aspects of the problem.

   1. Meet with the Purchasing Department manager. ~ 3 hours

   2. Meet with several purchasing agents. ~ 4 hours

   3. Identify and define use cases. ~ 3 hours

   4. Identify and define information requirements. ~ 2 hours

   5. Develop workflows and descriptions for the use cases. ~ 6 hours

II. Design the components of the solution to the problem.

   1. Design (lay out) input screens, output screens, and reports. ~ 8 hours

   2. Design and build database (attributes, keys, indexes). ~ 4 hours

   3. Design overall architecture. ~ 4 hours

   4. Design program details. ~ 6 hours

III. Build the components and integrate everything into the solution.

   1. Code and unit test GUI layer programs. ~ 14 hours

   2. Code and unit test Logic layer programs. ~ 8 hours

IV. Perform all system-level tests and then deploy the solution.

   1. Perform system functionality tests. ~ 5 hours

   2. Perform user acceptance test. ~ 8 hours

        2. Tell student, from Work Breakdown, we will see some some works that can be assign together in the same time. Organize and sequence of each task into "Schedule"
   ▪ The book show project finish in six days
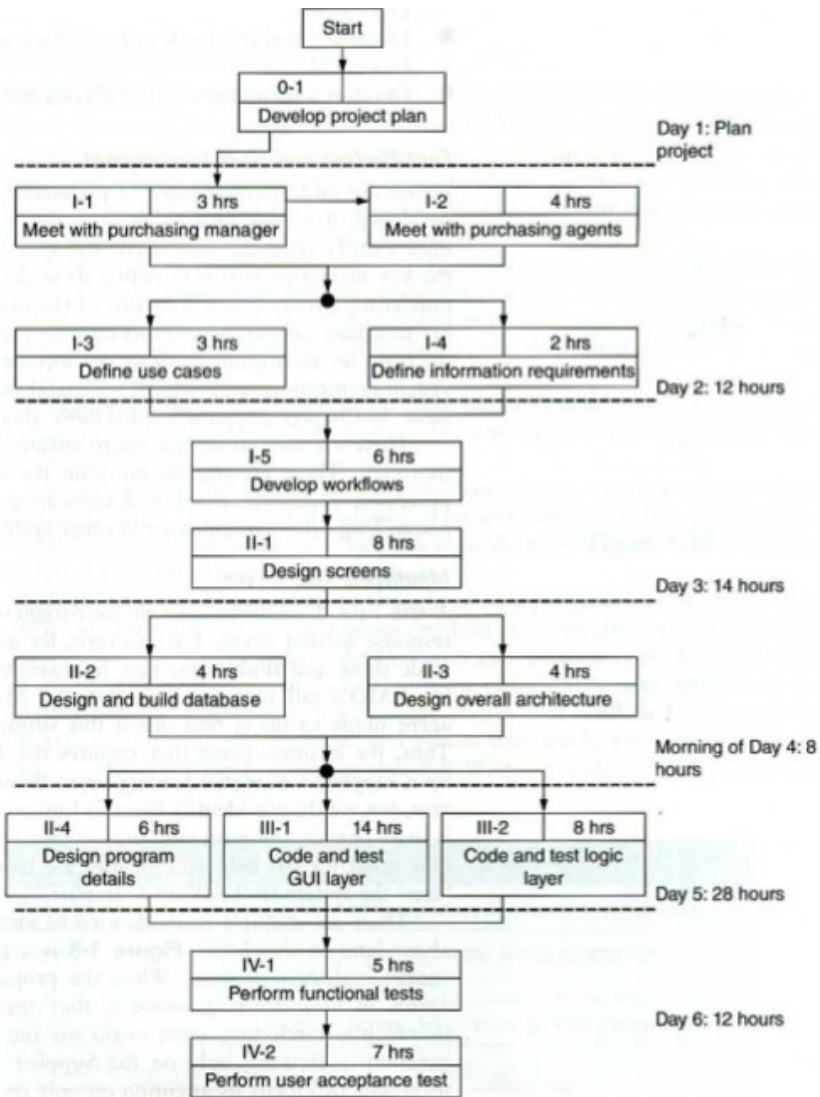
16. Core process 3, Discover and understand details


- Objective of core process 3 are
  - To understand the requirements
  - Create list and diagrams to analysis requirements in deep
    - List of use cases
    - Use case diagram
    - List of classes
    - Class diagram

Use Case	Description
Look up supplier	Using supplier name, find supplier information and contacts
Enter/update supplier information	Enter (new) or update (existing) supplier information
Look up contact	Using contact name, find contact information
Enter/update contact information	Enter (new) or update (existing) contact information
Look up product information	Using description or supplier name, look up product information
Enter/update product information	Enter (new) or update (existing) product information
Upload product image	Upload images of the merchandise product
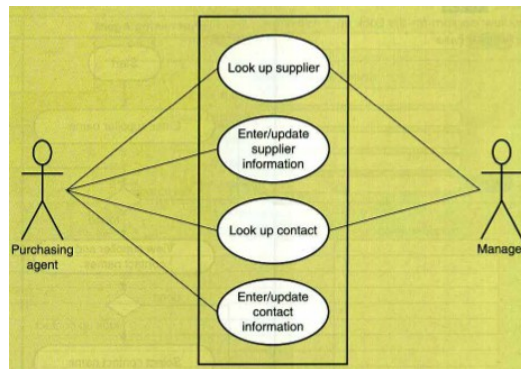
- ○ Point the picture for student understanding relationship between list of use case and the use case diagram.
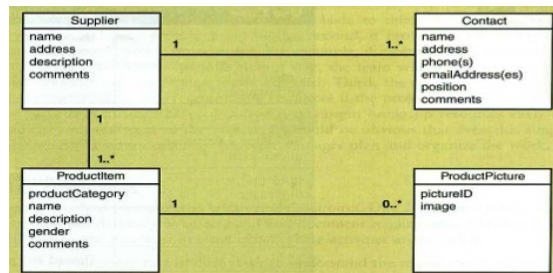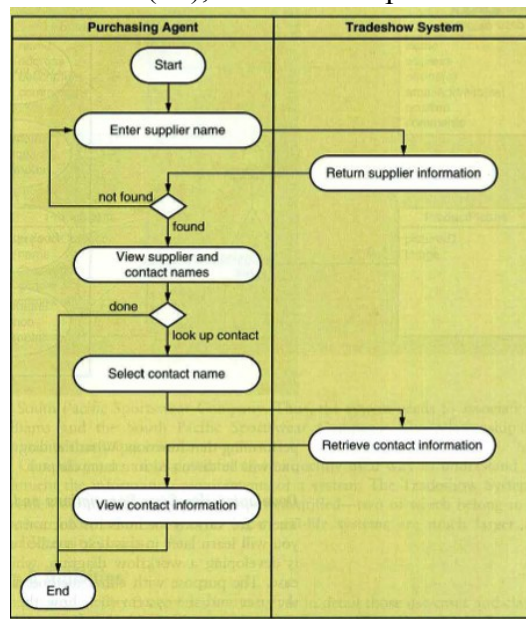

- ○ Point the picture for student understanding relationship between list of classes and the classes diagram.

DAY3
Page 16

17. Core process 3 and 4

- • Tell students about core process 3 and 4
  - ○ Perform in-depth fact finding to understanding details (Core3)
  - ○ Understand and documents the details of workflow and organization (Core3)
  - ○ Define the user interface (UI), screen and report of the system will be generated

Day 4
Page 19

   18. Core process 4, Tell students
- Design the database structure (schema)
- Design high-level structure
  - Architecture configuration diagram
  - Package diagrams

Table Name	Attributes
Supplier	SupplierID: integer {key} Name: string {index} Address1: string Address1: string City: string State-province: string Postal-code: string Country: string SupplierWebURL: string Comments: string
Contact	ContactID: integer {key} SupplierID: integer {foreign key} Name: string {index} Title: string WorkAddress1: string WorkAddress2: string WorkCity: string WorkState: string WorkPostal-code: string

SupplierView

lookupSupplier ( )
displaySupplier ( )

ContactView

lookUpContact ( )
displayContact ( )

Supplier

supplierID {key}
name: string
address: string
address2: string
city: string
state: string
country: string
URL: string
comments: string

getSupplierInfo ( )

Contact

contactID {key}
name: string {index}
title: string
waddress1: string
waddress2: string
wcity: string
wstate: string
wpostal: string
wcountry: string
wphone: string
mobilephone: string
email1: string
email2: string
comments: string

getContactInfo ( )

Supplier Subsystem

View layer

SupplierView

lookUpSupplier ( )
displaySupplier ( )

ContactView

lookUpContact ( )
displayContact ( )

Javascript Functions
validateSupplierInput ( )
validateContactInput ( )

php
html/css
javascript

Model layer

Supplier

getSupplierInfo ( )

Contact

getContactInfo ( )

php
sql

19. Core process 5, Programmer write code

```php
<?php
    class SupplierView
    {
        private Supplier $theSupplier;

        function __construct()
        {
            $this->theSupplier = new Supplier();
        }

        function lookupSupplier()
        {
            include('lookupSupplier.inc.html');
        }

        function displaySupplier()
        {
            include('displaySupplierTop.inc.html');
            extract($_REQUEST);    // get Form data
            //Call Supplier class to retrieve the data
            $results = $theSupplier->getSupplierInfo($supplier, $category,
                                              $product, $country, $contact);

            foreach ($results as $resultItem){
        ?>
                <tr>
                    <td style="border:1px solid black">
                        <?php echo $resultItem->supplierName?></td>
                    <td style="border:1px solid black">
                        <?php echo $resultItem->contactName?></td>
                    <td style="border:1px solid black">
                        <?php echo $resultItem->contactPosition?></td>
                </tr>
        <?php }
            include('displaySupplierFoot.inc.html');
        }
    }
?>
```
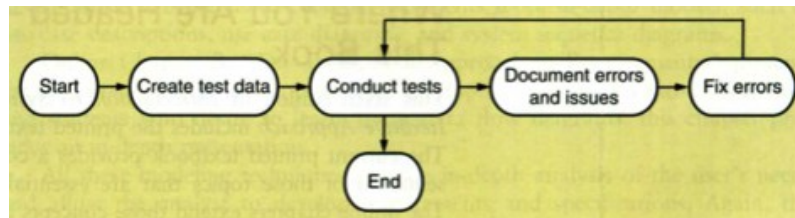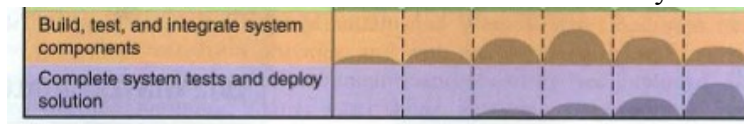
DAY 6
Page 25

20. Core process 6, Software deployment

21. Tell student in core 6 can be started before the later core finically

ACTIVITY
22. I give the example of system from last semester to student to analytical and discussion in 20 minute
    - Present about the system
    - Show problem and your idea for discussion
    - Show requirement of use
    - Estimate cost or time
    - Present at floor in classes
23. Group homework, create the company story and problem
    - Submitting work via website