System Development Methods

CT00046-3-2

System Development Planning

Part 2

Topic & Structure of the Lesson

- Requirement Engineering
  - Stages
- Review Facts Finding Methods
- System Requirement Specifications (SRS)

Learning Outcome

- At the end of the module, you should able to:
  - Explain the purpose, structure and scope of modern Information System Development Methodologies and select and justify appropriate methods of analysis, design and implementation for a particular component or application, be it traditional, multimedia or web based.

Key Terms you must be able to use

- If you have mastered this topic, you should be able to use the following terms correctly in your assignments and exams:
  - Explain Requirement Engineering stages
  - Discuss the benefits and setbacks of various Facts Finding Methods
  - Create various System Requirement statements.
  - Risk Management

Information System Requirements

- Requirements
  - A guideline of what the new IS should do to archive its objectives.
- High Level Requirement.
  - Overall goal of the system.
  - Determined at initial planning stage by the analyst
- Low Level Requirements
  - More detailed functions
  - Determined by gathering requirements from varies sources.
  - Later tuned into **Systems Requirement Specifications (SRS)**

Quick Quiz

- What would happen if you don't collect enough / accurate information before you start your project?
  - **Discuss the problems that you would face later.**

Requirement Engineering

Main Activities … a review

- RE - Process of gathering, analyzing and finalizing requirements for the project.
  - AKA; Requirement Gathering, System Investigation.
- Requirement Elicitation (Requirement gathering)
  - Collect data about the old system and the new system to be built
- Requirement Compilation
  - Gathering / merging the collected data into one location
- Requirement Validation and Analysis
  - Narrowing / filtering, keeping only important and achievable requirements.
- Output
  - **System Requirement Specification (SRS)**

Requirement Engineering (RE)

- Basically asking the following questions to gather facts; WHO, WHAT, WHERE , WHEN, HOW , WHY.

- Popular RE Techniques;
  - Interview
  - Questionnaires / Survey
  - Observation
  - Document Review
  - Data Mining
  - Brainstorming
  - Focus Group
    - A focus group is a group interview inv
      demographically similar people or par
      common traits/experiences.
  - etc

Quick Quiz

- If you are creating a new website for APU;
  - **Who would you interview?**
  - **Who would you send your questionnaires?**

System Requirement Specifications (SRS)

- Structured collection of information that contains the finalized requirements of a system
- Contains finalized requirement for System Design
- Popular Requirement groups;
  - Functional Requirements
  - Non-Functional Requirements
  - Architecture Requirements
  - Business Requirements
  - System / Technical Requirements
  - User / Stakeholders Requirements
  - Security Requirements
  - User Interface Requirements, etc

Risk Management
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- Process of identifying potential risk to the project / products and getting prepared for it.

- Many projects failed due to;
  - Developer did not identifying all risks
  - Developer Ignoring risks
  - Developer did not prepare 'backup plan' for risk
  - Developer did not monitor risk.

Risk Management Process

Risk Management Model

- Risk is the product of **Probability vs impact**
  (Risk = Probability X Impact)

		Probability		
		Low	**Medium**	**High**
Impact	**Severe/Critical**	Substantial management required	Must monitor and manage risks	Extensive management crucial
	Moderate	May accept risks but monitor them	Management effort useful	Management effort required
	Limited/Minor	Accept risks	Accept risks but monitor them	Monitor and manage risks

Risk Management Strategies

- Risk Transfers
  - Accept that the risk **MAY** happen. Transferring the risk to a vendor or customer (who are aware of the risk but willing to face it if it comes).
- Risk Avoidance
  - Accept that the risk **MAY** happen and taking alternative path to avoid the risk from happening.
  - Original design may change.
- Risk Reduction
  - Accept that the risk **WILL** happen and taking additional steps to reduce the risk form occurring.
  - May increase cost and delay in delivery time.
- Risk Acceptance
  - Accept that the risk **WILL** happen and implement total solution.
  - Costly and time consuming.

Summary of Main Teaching Points

- RE Stages
- Fact-finding techniques
- SRS
- IT Risk Management

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Question & Answer

Next Session

- System Analysis – Methods and Tools

Tutorial

1. Individual Work;
   a) For EACH Requirement Gathering Methods, explain a situation where it CAN BE USED and NOT SUITABLE TO BE USED.
   b) Design a simple **questionnaire** (using the Likert-scale format) to find out the effectiveness of Webspace-2 in APU.
2. Group work;

   Webspace-2 was built on various requirements.
   a) Write 2 requirement statements for each TYPES you studied here, for Webspace-2
   b) Identify the RISKs involved of you are given a project to upgrade Websapce-2. Show the risk in the Risk Analysis Table.