System Analysis (Phase-2) – Part 1
Requirement Modeling

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Systems Analysis Phase Overview

- The systems analysis phase includes the four activities:
  - Requirements Modeling
  - Data and Process Modeling
  - Object Modeling
  - Transition to Systems Design

System Requirements Checklist

- System requirements fall into five general categories:
  - Outputs
  - Inputs
  - Processes
  - Performance
  - Controls
Typical examples of system requirements

- **Outputs**
  - The Web site must report online volume statistics every four hours, and hourly during peak periods.

- **Inputs**
  - A data entry person at the medical group must input patient services into the billing system

- **Processes**
  - The human resources system must interface properly with the existing payroll system.

Performance

- The system must be operational 7 days a week, 365 days a year.

Controls

- The system must provide log-on security at the operating system level and at the application level.

Fact-Finding

Fact-finding involves answers to five familiar questions: **Who**, **What**, **When**, **Where**, and **How**.

- **Who**? E.g. Who performs each of the procedures within the system?
- **What**? E.g. What is being done?
- **Where**? E.g. Where are operations being performed?
- **When**? E.g. When is a procedure performed?
- **How**? E.g. How is a procedure performed?

Fact-Finding Techniques

- **Interviews**
  - The interviewing process consists of these seven steps:
    1) Determine the people to interview.
    2) Establish objectives for the interview.
    3) Develop interview questions.
    4) Prepare for the interview.
    5) Conduct the interview.
    6) Document the interview.
    7) Evaluate the interview.
Fact-Finding Techniques

- Document Review
  - Obtain copies of actual forms and operating documents currently in use. Review blank copies of forms, as well as samples of actual completed forms.

- Observation
  - Personal observation also allows you to verify statements made in interviews and determine whether procedures really operate as they are described.

Fact-Finding Techniques

- Questionnaires and Surveys
  - A questionnaire, also called a survey, is a document containing a number of standard questions that can be sent to many individuals.

- Sampling
  - The samples include records, reports, operational logs, data entry documents, complaint summaries, work requests, and various types of forms. Sampling techniques include systematic sampling, stratified sampling, and random sampling.

Interviews vs. Questionnaires

- Advantages of Interview
  - More familiar and personal.
  - React immediately to anything the interviewee says.
  - Watch for clues to determine if responses are knowledgeable and unbiased.
  - Improved human relations.

- Disadvantages of Interview
  - Costly and time-consuming process.
  - Preparation and follow-up work is required.

Interviews vs. Questionnaires

- Advantages of Questionnaires
  - Opportunity to provide input and suggestions.
  - Recipients can answer questions at their convenience.
  - Allows anonymous responses.

- Disadvantages of Questionnaires
  - Preparing a good questionnaire requires skill and time.
  - Question can be misinterpreted.
  - Recipients might view them as intrusive, time-consuming, and impersonal.
Interviews vs. Questionnaires

- As an analyst, you should select the technique that will work best in a particular situation.

Documentation

- You should document your work according to the following principles:
  - Record information as soon as you obtain it.
  - Use the simplest recording method possible.
  - Record your findings in such a way that they can be understood by someone else.
  - Organize your documentation so related material is located easily.

Software Tools

- Many software programs are available to help you record and document information. Some examples are:
  - Case Tools: Use CASE tools for systems development.
  - Word Processing: Create reports, summaries, tables, and forms
  - Spreadsheets: Track and manage numerical data or financial information.
  - Databases: Manage information about events, observations, and samples.
  - Presentation Graphics: Organizing and developing your formal presentation.