Requirements determination involves studying the existing system and gathering details to find out what are the requirements, how it works, and where improvements should be made.

## Major Activities in requirement determination

### Requirements Anticipation

* It predicts the characteristics of the system based on previous experience, which include certain problems or features and requirements for a new system.
* It can lead to an analysis of areas that would otherwise go unnoticed by the inexperienced analyst. However, if shortcuts are taken and bias is introduced in conducting the investigation, then requirement anticipation can be half-baked.

### Requirements Investigation

* It is studying the current system and documenting its features for further analysis.
* It is at the heart of system analysis where analyst documenting and describing system features using fact-finding techniques, prototyping, and computer-assisted tools.

### Requirements Specifications

* It includes the analysis of data, which determine the requirement specification, description of features for the new system, and specifying what information requirements will be provided.
* It includes an analysis of factual data, identification of essential requirements, and selection of Requirement-fulfillment strategies.

## What is planning? Why is it required?

Planning is the process of setting goals, developing strategies and outlining the programs to accomplish the goal. Planning the information system in the business is very important in today’s competitive environment as –

* To make the system growing and retain in the competitive environment.
* Information is a very important resource, equally important as cash, personnel etc. for any company and has to be managed properly.
* Large financial resources are committed to the information system.

## Steps in the initial investigation

1. Problem Definition – It is the process of identifying the need of the user, which led him to request for the system change.
2. Background Analysis – It is the process of getting basic information about the company or organization i.e. how it really works?, What people are involved in it?, etc. It helps the system analyst to prepare the organization chart with the list of people and their functions.
3. Fact-finding – After obtaining the background information, analyst start gathering the data like input, output and cost of the existing system. Information can be gathered by following tools –
   1. Review of written documents.
   2. On-site observations
   3. Interview and questionnaires
4. Fact Analysis – After the collection of data, it must be organized and evaluated so that report can be prepared for the final approval from the user.
5. Determination of Feasibility – After organizing data and fact analysis, feasibility is evaluated and determine that any alternative proposal is possible or not for the customer’s Project.

## Fact Finding Method of System Analysis

Fact-finding means learning as much as possible about the present system. The tools used in information gathering or fact-finding are as follows –

### Review of Written Documents

In all organizations, documents such as forms, records, reports, manuals, etc. are available which help in determining how the present system runs. The process of fact-finding includes collection and evaluation of all possible documents. Unfortunately, most manuals are not up to date and may not be readable. The analyst needs to find out how the forms are filled out, what changes needed to be made and how easy they are to read.

### On-Site Observation

The purpose of on-site observation is to get as close as possible to the real system under evaluation. It is the process of recognizing and noting people, objects and occurrences to obtain information. As an observer, the analyst must follow a set of rules. He/she must listen than talk and not give advice or pass a moral judgment, must not argue and show friendliness towards others. The following questions can serve as a guide for on-site observations:

* What kind of system is it? What does it do?
* Who runs the system? Who are the important people in it?
* What is the history of the system?

### Interviews

An interview is a face-to-face interpersonal situation in which a person called the interviewer asks questions designed to gather information about a problem, from the person being interviewed. The analyst or interviewer can schedule interviews with key personnel of the organization. The analyst also needs to conduct detailed interviews with all the people who will actually use the system.

Interviews help gather vital facts about the existing problems, such as lack of quality control or security, etc. Interviewing needs a friendly atmosphere so that the interviewer can ask questions properly, obtain reliable and correct answers and record the answers accurately and completely.

### Questionnaires

A questionnaire is a tool that has questions to which individuals respond. A questionnaire has the following advantages:

* It is economical and requires less skill than an interview.
* It is useful in a situation to know what proportion of a given group approves or disapproves of a particular feature of the proposed system.
* It is useful to determine the overall opinion before giving any specific direction to the system project.
* It is more reliable and provides high confidentiality of honest responses.
* It is appropriate for electing information for statistical data collection.

## Strategies for determining information requirements

There are three general approaches for getting information regarding the user’s requirements. They are:

### ASKING

This strategy obtains information from users by simply asking them about the requirements. It assumes a stable system where users are well informed and can overcome biases in defining their problem. There are some key asking methods.

1. Questions – These may be open-ended or closed. An open-ended question allows the respondent to formulate a response. A closed question requests one answer from a specific set of responses.
2. Brainstorming – It is a technique used for generating new ideas and obtaining general information requirements, appropriate for getting non-conventional solutions.

### GETTING INFORMATION FROM EXISTING INFORMATION SYSTEM

There are two methods in extracting information from an already existing system

1. Data Analysis – Determining information from an existing application is called the data analysis approach.
2. Decision Analysis – This method breaks down a problem into parts, which allows the user to focus separately on the critical issues.

### PROTOTYPING

The third strategy for determining user information requirements is used when the user cannot establish information needs accurately before the information system is built. The reason could be the lack of an existing model on which to decide requirements or a difficulty in visualizing candidate system. This iterative approach first set up the initial requirements and builds a system to meet these requirements. As users gain experience, they request additional requirements or modifications and the process continues. Prototyping is suitable for environments where it is difficult to formulate a concrete model for defining information requirements. Prototyping strategy is appropriate for determining high uncertainty information requirement.