



Lesson 3

Systems Analysis and Requirements:

Pure Consciousness is the Field of All Possibilities

The Importance of System Analysis



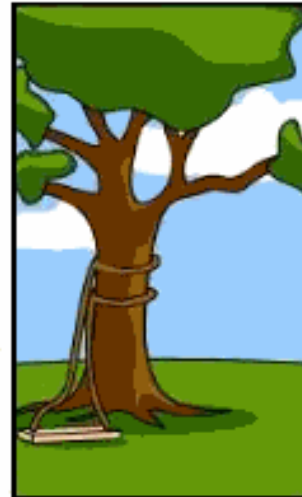
How the customer explained it



How the Project Leader understood it



How the Analyst designed it



How the Programmer wrote it



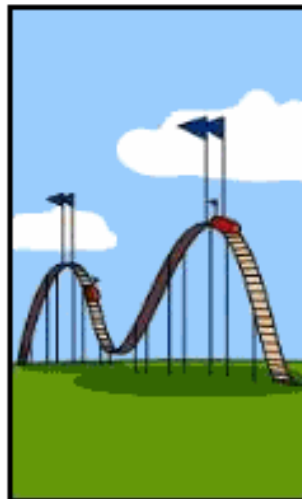
How the Business Consultant described it



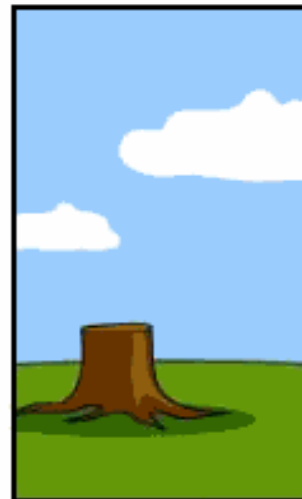
How the project was documented



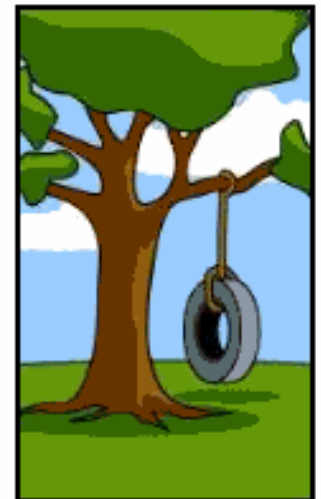
What operations installed



How the customer was billed



How it was supported



What the customer really needed

Main Points

1. To build a good software system that meets the needs of stakeholders, it is not enough to make use of best practices for design and implementation. It is also necessary to obtain a clearly formulated set of user requirements. To achieve this aim requires significant interaction with the users and other stakeholders.
2. Likewise, to be a maximally effective developer, one must be able to apply best practices and abstract principles, but at the same time do so in the midst of – and not divorced from – the problem domain.

Problem Analysis

- First step in a project is to understand the problem to be solved or the opportunity to be realized. This is accomplished by System Analysts in conjunction with stakeholders
- This step is known as Problem Analysis. Performing this analysis requires sufficient knowledge of the domain. The problems to be solved must be agreed upon by all stakeholders of the system.

Stakeholders

- A Stakeholder is anyone who represents an interest group whose needs must be satisfied by the project. The role may be played by anyone who is (or potentially will be) materially affected by the outcome of the project.
- Different projects may have widely varying stakeholders, and stakeholders may belong to seemingly unrelated groups. Determination of the stakeholders for a project requires careful consideration for each project.

Example Stakeholders

- Customer or customer representative,
- User or user representative,
- Investor,
- Shareholder,
- Owner,
- Board member,
- Production manager,
- Buyer,
- Designer,
- Tester,
- Documentation writer

Problems → Needs → Features

- **Problems** to be solved are typically reformulated as ***user needs***, and from these, an initial set of ***features*** for the new system are listed.
- Each of these steps of refinement moves in the direction of a concrete specification of requirements for the system. In fact, the goal of System Analysis is ultimately a Software Requirements Specification.
- The difference between Problems, Needs, and Features is a matter of both detail and orientation. Every problem should be mapped to one or more needs, and every need should be mapped to one or more features that would meet the need.

Problems → Needs → Features



| Problem | Need | Feature |
|---|---|--|
| Each Compro entry has a projected number of students entering in the FPP and MPP track. | Compro entries must be sized by number of students and entered into the schedule. | Schedule Admin must be able to add or delete entries to the schedule DB and enter a projection for the number of students in the MPP and FPP tracks. |

Vision Document

- Main artifact emerging from Problem Analysis
- Vision Document:
 1. problem statement
 2. **key needs and features**
 3. business case for the project
 4. clarify the scope of the project
 5. **provide a list of the stakeholders.**

Our vision document will focus on items 2 & 5 above.

Vision Document

From RUP:

- The Vision Document defines the stakeholders' view of the product to be developed, specified in terms of the stakeholders' ***key needs and features***. Containing an outline of the envisioned core requirements, it provides the contractual basis for the more detailed technical requirements.
- The Vision document is a primary goal of the Inception phase of development.

Needs And Features → Requirements

- Today we determine what are the needs and features for MUMSched. Assignment 1
- Tomorrow we will convert the Needs and Features to Requirements. Assignments 2 and 2.1
- Based on our Needs and Features we will determine the Use Cases which make up our System Requirements Specification.
- Requirements differ from needs and features: Requirements are ***testable***.

CONNECTING THE PARTS OF KNOWLEDGE WITH THE WHOLENESS OF KNOWLEDGE

1. Requirements analysis starts by identifying and documenting the *problem*, *client needs*, and *features*.
2. There are inherent complexities in accurately eliciting client needs. It must be done carefully and systematically in order to form a solid foundation for the rest of the software development process
3. Requirements analysis requires that our minds effectively move from the big picture of the project to the more detailed features and create a unified, coherent, vision.

CONNECTING THE PARTS OF KNOWLEDGE WITH THE WHOLENESS OF KNOWLEDGE

3. **Transcendental Consciousness** is the pure field of *solutions*; the field of *all possibilities*.

4. **Impulses within the transcendental field:** Pure consciousness is the home of Nature's infinite creativity. Engaging this field saturates the individual mind with the lively value of creative solutions.

5. **Wholeness moving within itself:** In unity consciousness, solutions to problems arise effortlessly and are experienced as the lively flow of pure consciousness within itself.