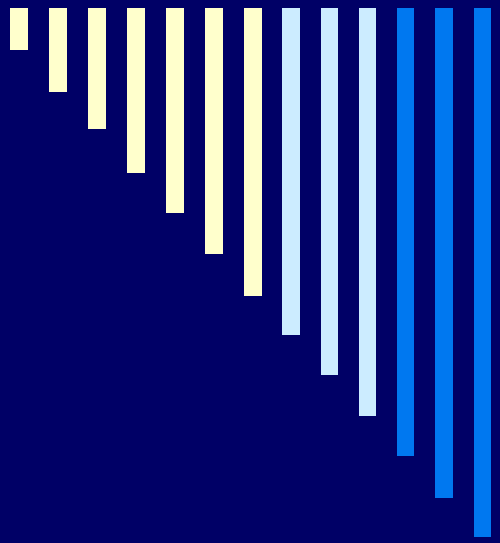
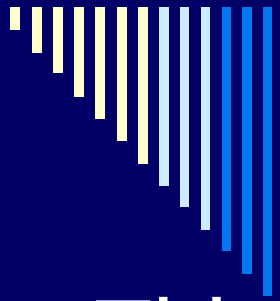


ESE

Experiment Definition

DICII – UniRoma2 – Giovanni Cantone



Introduction

This phase leads to determine the foundation of the experiment that is done by:

- Defining the goal of the experiment
- Informally defining and explaining the experiment's hypotheses
- Possibly sketching on the related variables and measurements.

Goal Definition

- The GQM Template for goal definition
  - Analyze <Object(s) of study>
  - For the purpose of <Purpose>
  - With respect to <Quality focus>
  - From the point of view of the <Perspective>
  - In the context of <Context>

GQM Template

Object of study	Purpose	Perspective	Quality focus	Context
Product	Characterize	Developer	Effectiveness	Subjects +
Process	Monitor	Modifier	Efficiency	Objects +
Model	Evaluate	Maintainer	Cost	Organization +
Theory	Predict	Project Manager	Reliability	etc.
Technology	Control	Corporate manager	Maintainability	
	Change	Customer	Portability	
		User		
		Researcher		

Experiment Context Characterization: Subject vs. Objects

		# Objects	
		One	More than one
# Subjects per Object	One	Single object study	Multi-object variation study
	More than one	Multi-test within object study	Blocked subject-object study

The Experiment (Informal) Hypothesis

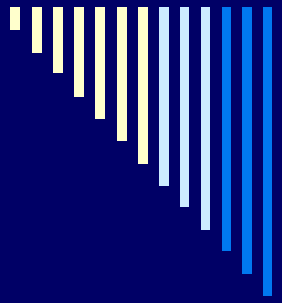
Example #1

In the reference software organization, the testing technique currently utilized, CTT, performs not worse than the new technique NTT for any type of defects for graphic-bound software, whatever the experience level of the involved test people might be.

The Experiment (Informal) Hypothesis

Example #2

In the reference software organization O, the new design method NTT performs significantly better than the design method currently utilized, CDM, for data mgt. software with the O's designers.



Variables & Measurements

Based on the given informal hypotheses try to define the variables involved, and the related measurements.