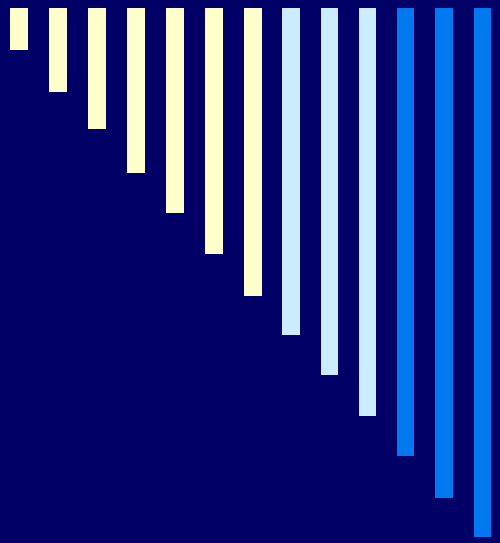
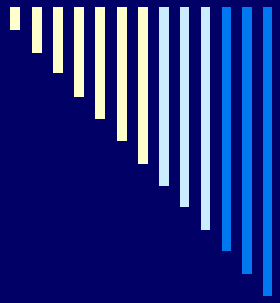
Experimental Software Engineering (ESE)



Survey: An Empirical Paradigm



Surveys

- Often based on observation retrospect: e.g. when a software tool or a technique is used for a while.
- Concerned with collecting what people already know (the past history).
- Can be qualitative, quantitative or a combination of qualitative and quantitative data.

Survey Purposes (1/2)

- Explorative: They do not aim to answer basic questions about a study; instead, they are used as a pre-study to a more enough investigation to assure that all the important issues are taken in consideration.

- Descriptive: Descriptive surveys can be conducted to evaluate the distribution of certain characteristics attributes in some population.

Survey Purposes (2/2)

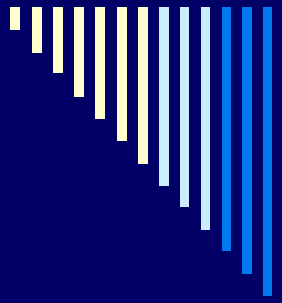
- Explanatory: Explanatory surveys aim at making explanatory claims about the population; for example, when studying how developers use a certain inspection technique.

Data Collection in surveys

- Questionnaire : A form filled with questions; this form could be a paper, electronic form, www or e-mail pages.
- Interview: can be made face to face with persons, it can also be made through the telephone.

Interviews vs. Questionnaires

- Pros of interviews (compared to questionnaires):
  - An interview method achieves a higher response rates than, for example, mail surveys.
  - The interviews generally decrease the number of “I don't know” type of answers.
  - It is possible for the interviewer to observe and ask questions.
- Cons of interviews.
  - Because interviewers are requested to be at least as domain-expert as interviewed, interviews usually are much more expensive than questionnaire.



Data Collection in surveys. Examples

1- The Effect of Learning: Using a survey for collecting data to compare the degree of knowledge that students had before / gained after having a software programming course.

2- Understanding Software Documentations: Using surveys to compare the effect of learning by using two different methods of reading UML artifacts.