Meeting 4: The Research

CST3990 Undergraduate Individual Projects

Can Başkent

Department of Computer Science, Middlesex University, London
c.baskent@mdx.ac.uk canbaskent.net/logic @topologically

Overview of Today's Session

1. The Research

2. Some Research Methods

3. Towards the Second Coursework

The Research

Developing Your Aim

Meetings with Your Supervisor The meetings with your supervisor are opportunities for you to present your ideas, get valuable feedback on those ideas, and to discuss all aspects of your project.

At all meetings, it is important that you use the time well. This means that you should come properly prepared, for example by having written down in advance the questions that you would like to ask your supervisor.

At every meeting it is important that you take the initiative in the discussion, since your supervisor is not the one who should do all the creative thinking in your project. You should not simply ask your supervisor what you should do next. Instead, it is important that you have ideas of your own on what to do. Your supervi- sor can then give feedback on those ideas.

Developing Your Aim

Time Plan The purpose of developing a time plan for your project is for you to have a clear understanding of the relationship between important dates, project activities, and the time needed for each activity. A good time plan helps you to avoid future problems, such as missed deadlines.

Refine the Initial Aim The aim is a short statement in the form of a clear, unambiguous sentence describing the overall goal of your project. You probably already have a preliminary version of your aim in the project proposal that you submitted earlier. It is now time to refine the aim into a clear and solid description of your project's goal.

Developing Your Aim

It is important that you check and evaluate every word of the aim.

- Are all words clear, or can some words be interpreted to mean different things? If some words can be interpreted in different ways, then readers are likely to misunderstand what you are trying to do.
- Does your aim promise too much? Try to find the right level, so that the aim of the project does not become too simple or too difficult. Will you be able to accomplish what you have promised in the aim within the allowed time frame of the project?

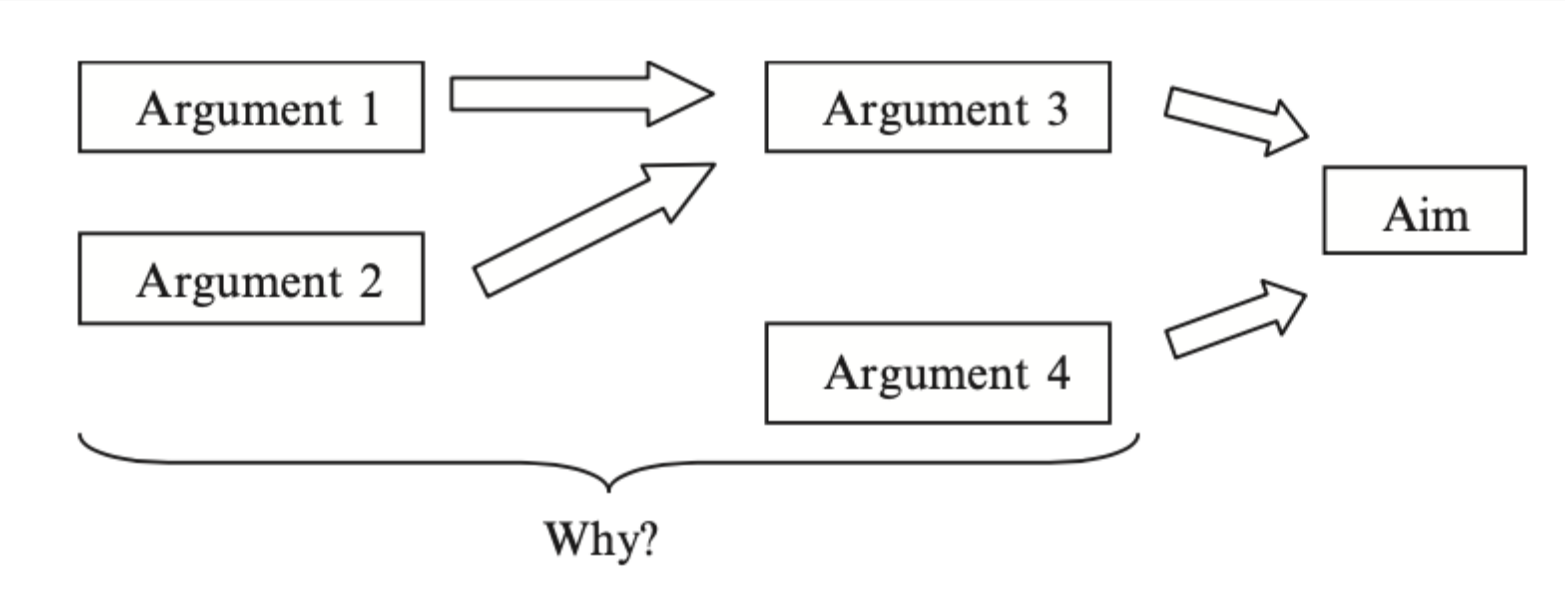
Developing Your Aim

- Are there any restrictions on the aim, for example, with respect to area, region, or time periods? A common mistake is to allow time constraints to restrict the project. For example, “due to time constraints in this project, concept X is not investigated”. Is this a valid restriction, or is it really a sign that the aim is too ambitious with respect to the allowed time frame for the project?
- Have you explained all the concepts that are used in the aim clearly? All important concepts mentioned in the aim should be defined or explained early in the text.

Developing Your Arguments

The project aim needs to be supported by proper arguments which explain why it is important to investigate the topic.

The arguments should relate to relevant theory and should have clear links to the aim.



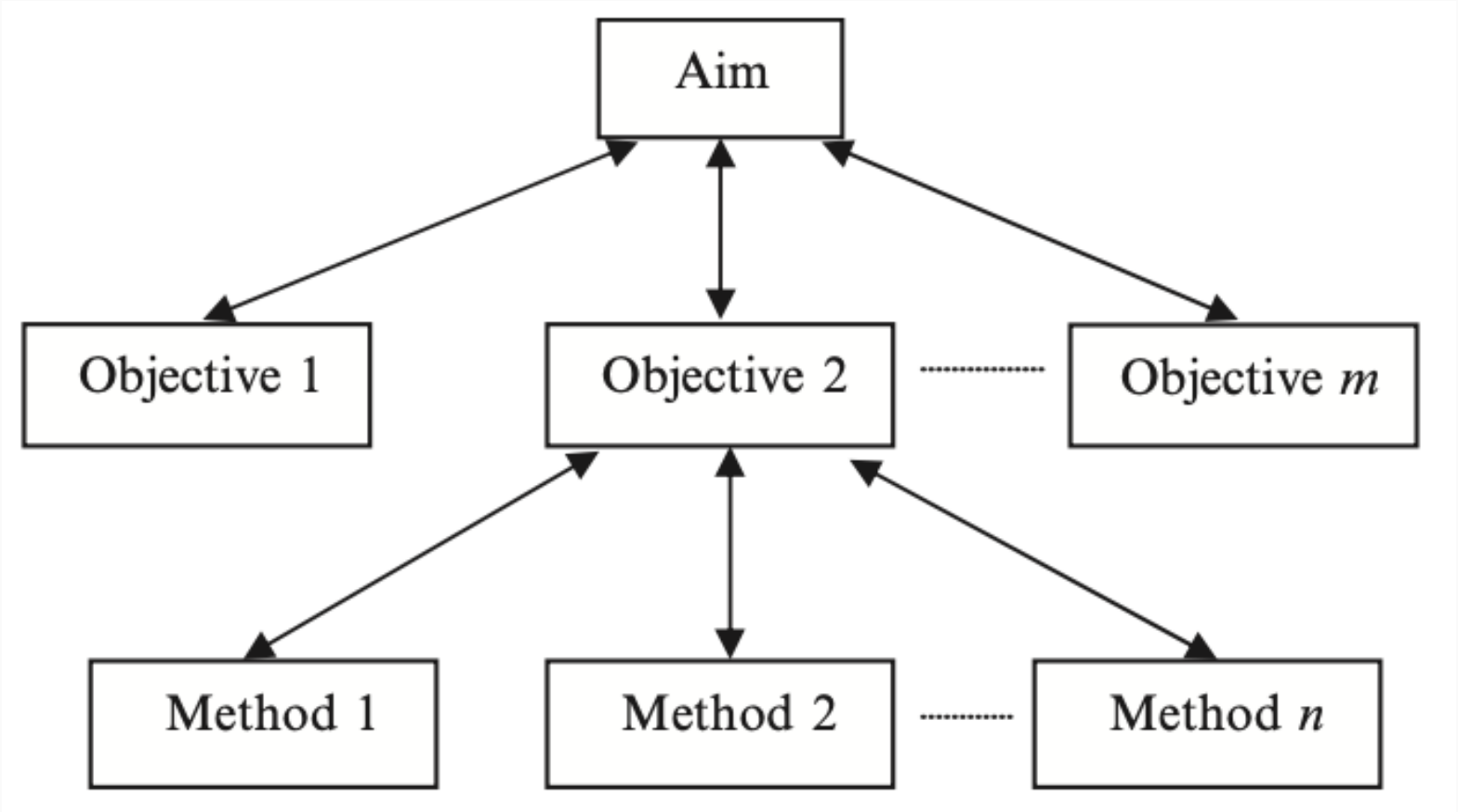
Developing Objectives

Once you have developed your project aim you can start to develop objectives, and later also choose a method for each objective.

Your project has one overall aim. In order to reach the aim, a number of objectives are formulated. Each objective is a small, achievable and assessable unit, i.e. a sub-goal of the project.

Objectives should be formulated in such a way that fulfilling the objectives leads to the overall aim being satisfied.

Developing Objectives



Some Research Methods

Interview

An open interview is a form of interview commonly used in qualitative research, where the researcher has no (or only limited) control of the issues raised during the interview session.

A closed interview is characterised by a fixed set of questions, which the inter- viewer asks during the session. This style of interview is sometimes also referred to as a pre-structured interview, as in its pure form, it does not allow adding or deleting questions depending on the replies.

Case Study

A case study project is undertaken as an in-depth exploration of a phenomenon in its natural setting. A characteristic of a case study is that it involves a limited number of cases, sometimes even a single case. This allows you to undertake a detailed examination of the phenomenon.

Survey

Survey research is closely associated with the use of questionnaires, and statistical techniques for analysing their responses. Such research is often used for exploring a relatively well-known phenomenon, for which there exists a large sample of respondents having some knowledge of the issue of concern. For example, if you want to explore what the perceptions are in software development organisations concerning a specific, well-known methodology, you might investigate this by doing a survey.

Implementation

Many projects in computer science and information systems consist of developing new solutions. Such a solution can consist of a new software architecture, method, procedure, algorithm, or some other technique, which solves some problem in a new way, which has some advantage over existing solutions.

In a project of this type, it is often necessary to implement the proposed solution, in order to demon- strate that it really does possess the proposed advantages.

The goal of the implementation, then, is to demonstrate that the solution has certain properties, or that (under certain conditions) it behaves in a specific way.

This implementation often needs to be compared with implementations of existing solutions, before conclusions can be drawn. The implementations of the existing solutions may or may not be done by yourself.

A Four-Step Process for Research

1. Develop objectives
2. Identify potential methods
3. Choose among the potential methods
4. Present details of the chosen approach

Towards the Second Coursework

What is for the Second Coursework

The Second Coursework has two main parts.

1. The Literature Review
2. First Steps

What is for the Second Coursework

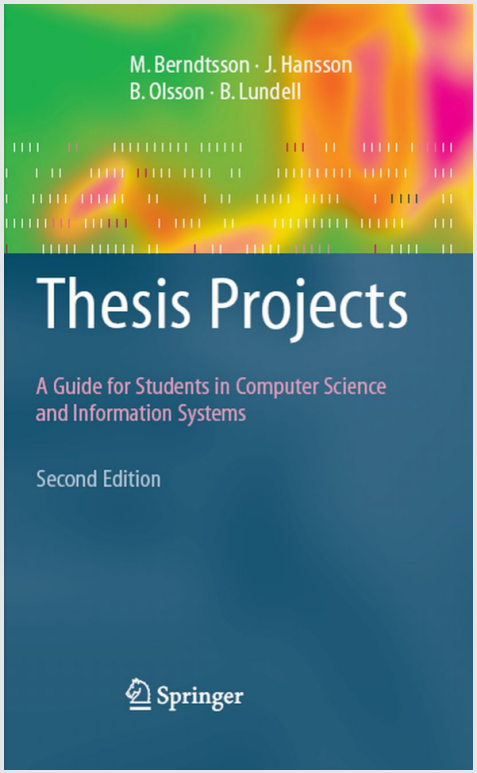
The Second Coursework has two main parts.

1. The Literature Review: A comprehensive review of the literature around your topic.
2. First Steps: The first ideas and methods you have developed in the past few months towards your aim.

References

These slides are based on our textbook

Mikael Berndtsson & Jörgen Hansson & Björn Olsson & Björn Lundell, *Thesis Projects*: A Guide for Students in Computer Science and Information Systems, Second Edition, Springer, 2008.



Thank you!