

Informatics Research Proposal

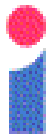


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What is it?

- **Proposal of a research project.**
- **Delivered by project supervisor.**
- **Full proposal six pages.**
 - cf one page outline on projects website.

Relation to Summer Project

- **Proposal is for Summer project.**
 - Change of topic & supervisor possible up to 17 February.
- **Allocated supervisor reflects your interests.**

Why do it?

- **Learn skills of research planning.**
- **Confirm choice of research area.**
- **Scope out your Summer project.**
- **Compulsory course in your MSc degree.**

Skills to be Developed

- **Project Design.**
- **Motivating Research.**
- **Self-Assessment.**
- **Succinct Presentation.**
- **Managing your Time.**

What to do.

- **Establish aims and objectives of project.**
- **Establish hypothesis and evaluation.**
- **Break project into work packages,**
 - with durations, dependencies and deliverables.
- **Write full six page report by 24th March.**

Structure of Full Proposal

- **Motivation: aims & objectives, hypothesis, timeliness, feasibility, significance, novelty, beneficiaries.**
- **Background material (use IRR, where relevant).**
- **Methods and techniques to be used.**
- **Evaluation: methodology for establishing hypothesis.**
- **Outputs: program? experimental results? theory? data?**
- **Research plan: work-packages with durations, deliverables & dependencies (via diagram?).**
 - **Risks and backup.**

How to get started

- **Is there already a project proposal?**
- **How would you change this in the light of your IRR literature survey?**
- **Do you need an exploratory study to identify a hypothesis?**
- **What hypothesis/claim are you investigating?**
- **What evidence is needed to establish this hypothesis?**

Typical Claims in Informatics

X is better than Y on task Z along some dimension W.

- **What kind of things are X and Y?**
 - **system, technique, parameter?**
- **What is task Z?**
 - **Speech recognition, information extraction**
- **What is the dimension W?**
 - **behaviour, coverage, efficiency, usability, dependability, maintainability?**

How can claims be established?

- **Theoretical evidence: proof of some property or relationship:**
 - correctness, completeness, complexity, etc.
- **Experimental evidence:**
 - Run computer program and analyse:
 - run times, success rates, user's reactions, etc;
 - compare two or more programs.
 - Test and compare human performance:
 - with program, on different program variants, with other humans, etc.

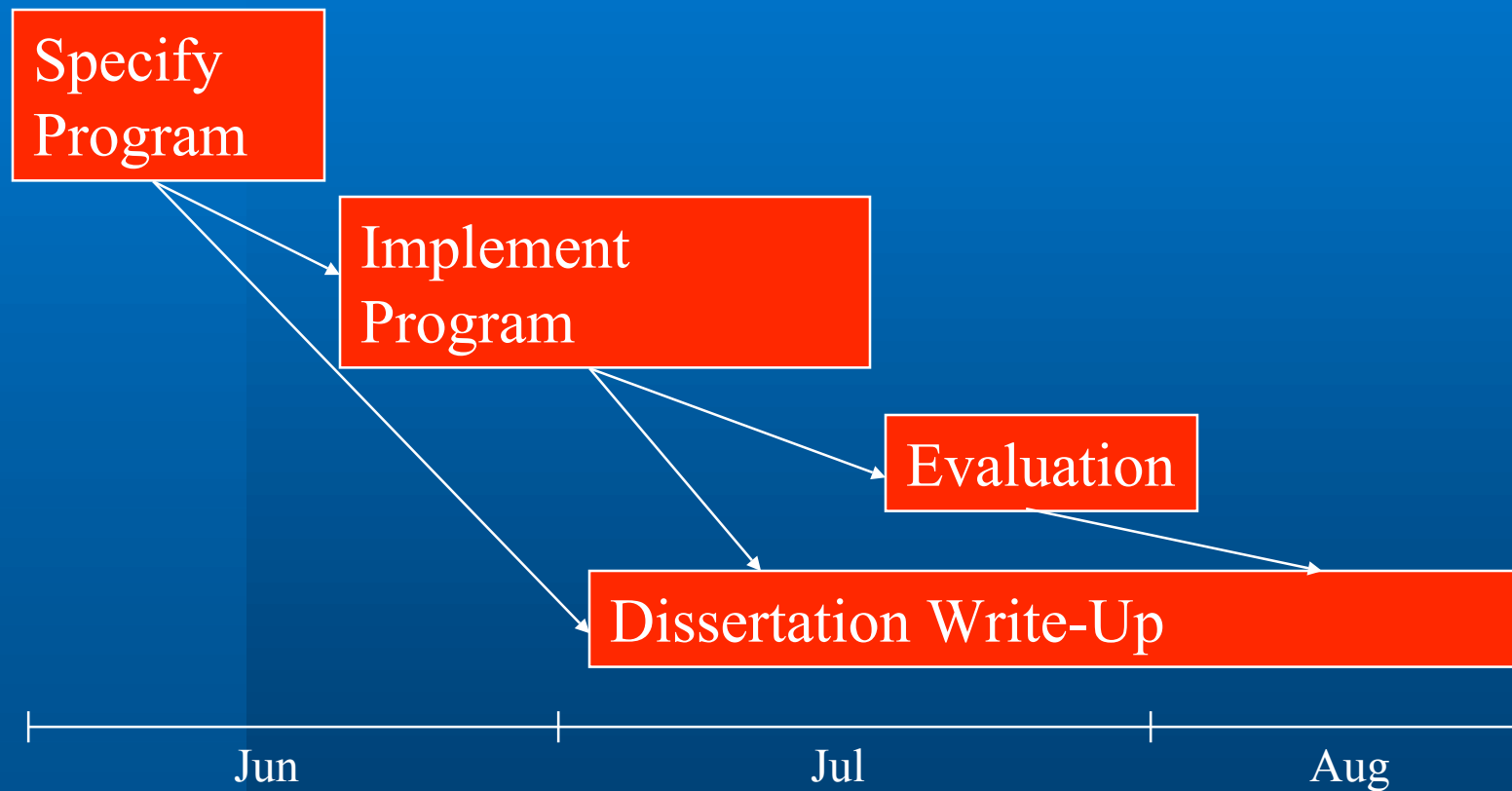
Think early about evaluation

- **Key part of project,**
 - evidence to support hypothesis.
- **Too risky to leave until late in project,**
 - evaluation required may not be feasible.
- **Interacts with hypothesis formation,**
 - and so, determines nature of project.
- **Write note outlining evaluation plan,**
 - and discuss with your supervisor.

Planning your project

- **Try to break the overall project into work-packages.**
- **How do they depend on each other?**
 - In which order should you tackle them?
 - In series or in parallel?
 - Which are essential and which optional?
- **How long will each of them take?**
 - Build in some slippage time.
 - Do these estimates fit the time available?
 - If not, trim the project to fit.
- **What is the outcome of each package?**

Diagrammatic WorkPlan



Assessment

- **Your report will be marked by your supervisor.**
- **Assessment will be based on:**
 - **How well project is motivated.**
 - **Quality of research plan.**
 - **Demonstrated understanding of area.**
 - **Clarity of expression and presentation.**

Basic criteria (need these to pass)

Clear explanation and justification of each of the following:

- **Project aims and hypothesis.**
- **Deliverables of project.**
- **Research plan.**
- **Plans for evaluation of hypothesis.**
- **Relation to previous work.**
- **Timetable with dependencies.**

Additional criteria

Convincing arguments about each of the following:

- **Timeliness and significance of research.**
- **Potential commercial or academic impact.**
- **Backup plan if original plan fails.**

Marking guidelines

- **Pass: adequate on basic criteria.**
- **Fail: inadequate on two or more basic criteria.**

If you fail this, then whether you pass the MSc overall will depend on decisions taken at the BoE meeting.

Common proposal shortcomings

- Hypothesis is unclear, woolly or ill-formed.
- Project insufficiently motivated.
- Not clear why you will succeed where others have failed.
- Insufficient technical detail to assess.
- Unaware of related research.
- Badly presented or incomprehensible.

Pacing yourself

- **Work out timetable for writing.**
- **Leave plenty of time for feedback and correction.**
- **Write at a steady pace.**
- **Meet with your supervisor regularly.**

Conclusion

- **Identify hypothesis and how to evaluate it.**
- **Plan research programme.**
 - Break project into work-packages.
 - Gauge duration, deliverables and dependencies.
- **Motivate: significance, feasibility, novelty.**
- **Pace yourself.**
 - Leave time for feedback and correction.
 - Self-assessment against marking criteria.