Introduction - Project Planning - Making Presentations

CSW 2011

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Aims

Immediate aims:

- To help prepare for your project work
  - Planning your project
  - Planning your project report
  - Structuring the overall write up, how to do a literature review
  - Prepare for project presentation

Longer terms aims:

- Being prepared on how to plan work, write reports, make presentations in your future work

Who's here, doing what?

Undergraduate students (on CS projects, PR3/4)

- Attend lectures and practicals
- Give presentation (mark does not count, but detailed feedback will be given)

MSc/Meng students

- Attend lectures and practicals
- Open assessment (lit review - due in Spring)
- Give presentation (on aspect of lit review - in Spring)

Module Activities

Lectures

- 10 Lectures. See website for timetable and lecture notes.
- Besides me, other 4 lecturers:

  Alistair Edwards, Jeremy Jacob, Dan Franks, Tony Wilson

Presentations

- Undergraduate students give their presentations in week 3
- One or two key papers from your project literature review, a critical analysis of these paper/s
- 8 minutes for presentation + 2 minutes for questions
- More details on the website
- Graduate students give their presentations in Spring term

Practicals

- Exercise sheet on Latex (week 4). Online lit resources (week 5)

In this lecture….

- Key-points of CS projects

- Project planning (Gantt, PERT charts)

- Making academic presentations

What is a project ?

- Demonstrates your ability to conduct a sustained piece of work, use computer science techniques, following …

- An appropriate development lifecycle. Usually:
  - Requirements - design - implementation - evaluation (don't forget evaluation!) - maintenance
  - Including producing some kind of "artifact" - software, hardware, training materials …

- BSc projects do not need to "increase knowledge", MSc/MEng projects do

Projects and Knowledge

KNOWLEDGE

PR3

MEng
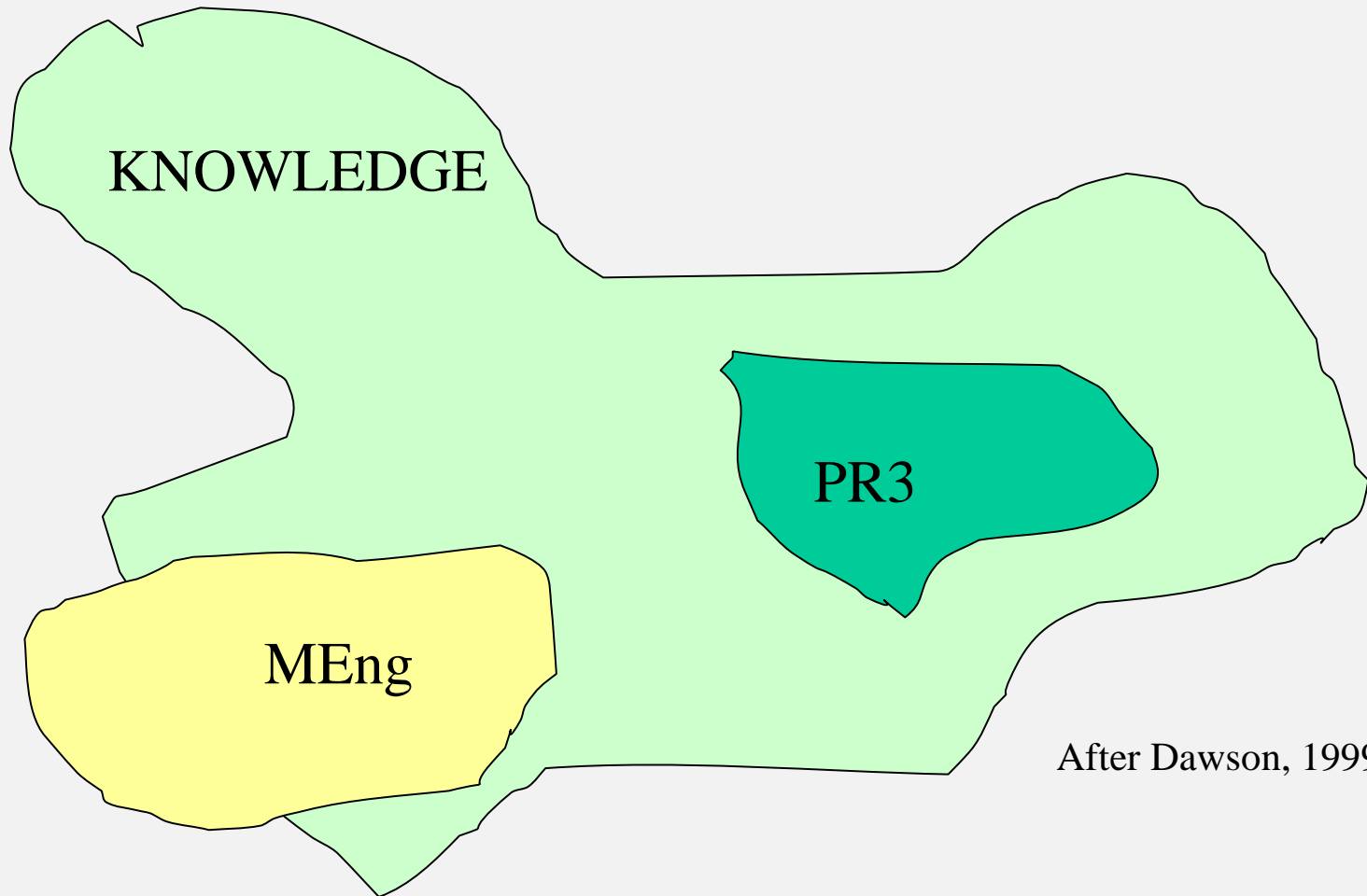
After Dawson, 1999

Methods for projects

Different methods are appropriate for different projects

– Software Engineering methods - agile programming, RAD, unified process etc

– Hardware methods for specification/design

– Research method: problem-hypothesis-experiment

– Algorithm design/proof: problem-plan-do

Method is very important

➤ In your project report, you need to justify why you chose particular methods

➤What alternatives are available to you?

➤Discuss with your supervisor if necessary

Planning for a project

- Who has used a Gantt chart?

- Not an acronym: Mr. Henry Gantt, mechanical engineer, developed the diagrams for the Hoover dam and other big projects
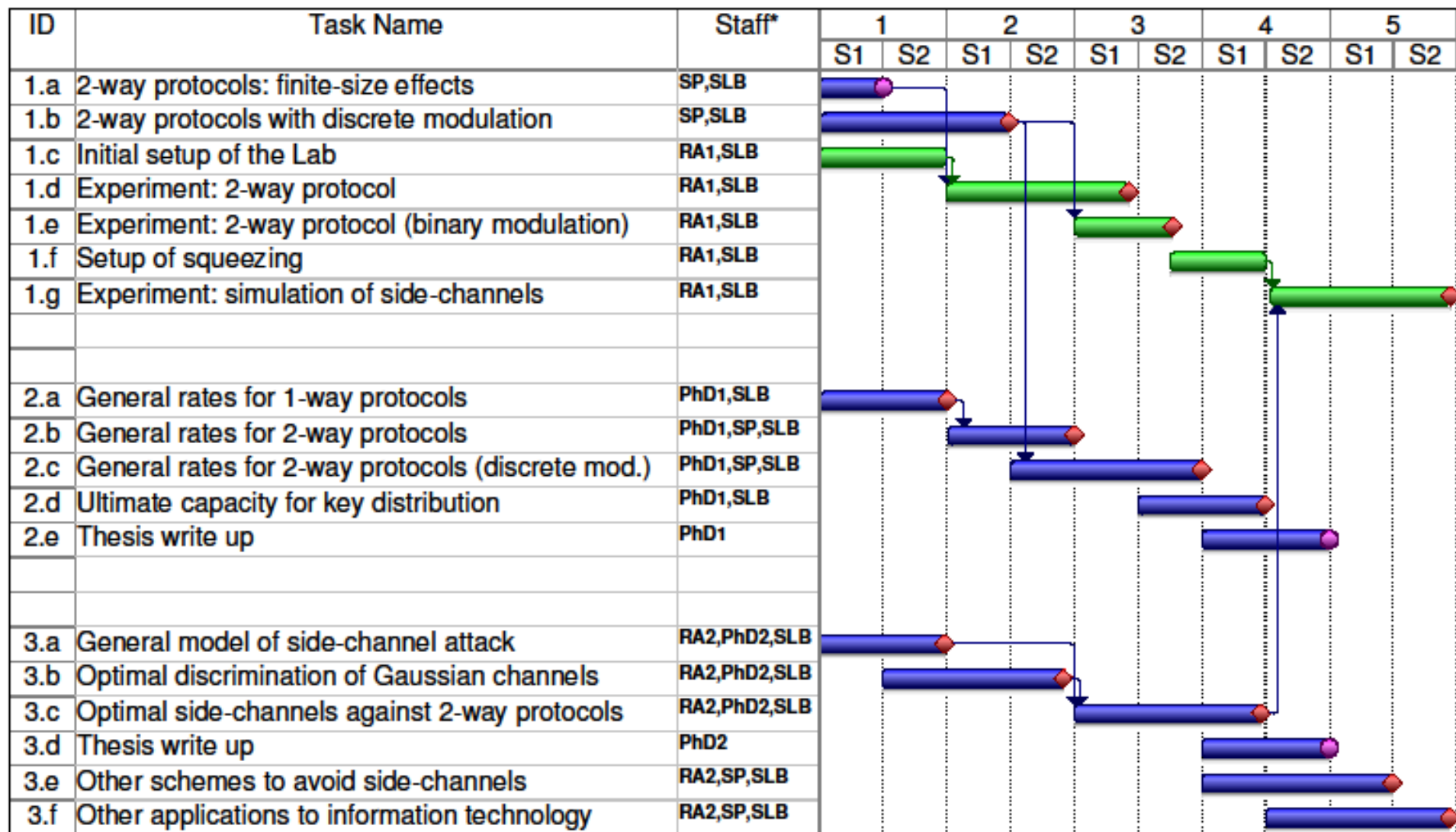

- Can do one manually with spreadsheet programs (Excel)

Gantt chart

Basic elements of the chart

- Tasks (for a complex project, tasks are grouped into work packages). Duration of tasks. Staff involved.

- Milestones - key points when things will be achieved (e.g. "agree title with supervisor")

- Deliverables - artifacts and components of artifacts to be produced - components of software, chapters/drafts of report

"Real Example" (from a research proposal)

ID	Task Name	Staff*	1		2		3		4		5	
			S1	S2	S1	S2	S1	S2	S1	S2	S1	S2
1.a	2-way protocols: finite-size effects	SP,SLB										
1.b	2-way protocols with discrete modulation	SP,SLB										
1.c	Initial setup of the Lab	RA1,SLB										
1.d	Experiment: 2-way protocol	RA1,SLB										
1.e	Experiment: 2-way protocol (binary modulation)	RA1,SLB										
1.f	Setup of squeezing	RA1,SLB										
1.g	Experiment: simulation of side-channels	RA1,SLB										
2.a	General rates for 1-way protocols	PhD1,SLB										
2.b	General rates for 2-way protocols	PhD1,SP,SLB										
2.c	General rates for 2-way protocols (discrete mod.)	PhD1,SP,SLB										
2.d	Ultimate capacity for key distribution	PhD1,SLB										
2.e	Thesis write up	PhD1										
3.a	General model of side-channel attack	RA2,PhD2,SLB										
3.b	Optimal discrimination of Gaussian channels	RA2,PhD2,SLB										
3.c	Optimal side-channels against 2-way protocols	RA2,PhD2,SLB										
3.d	Thesis write up	PhD2										
3.e	Other schemes to avoid side-channels	RA2,SP,SLB										
3.f	Other applications to information technology	RA2,SP,SLB										

*S.L. Braunstein involved in all aspects of the research; SP = S. Pirandola (team member)
RA1, RA2 = Research Associates; PhD1, PhD2 = PhD Students.

Theoretical Task — Internal Report
Experimental Task — Publication

Pert charts

- First developed to support the U.S. Navy's Polaris nuclear submarine project (1957)

www.comixstuff.com

Pert charts

- More complex than a Gantt

- Network diagram: some things can be done in parallel, some things must start after other...

- If you want to get really sophisticated, can do a critical path analysis

Pert charts

PERT = Project Evaluation and Review Technique

A, B, C … are the tasks/activities

t = 3 mo … time needed to complete the activity

10, 20, … are the milestones

Critical Path = the longest possible continuous pathway taken from the initial event to the terminal event. It determines the total time required for the project.
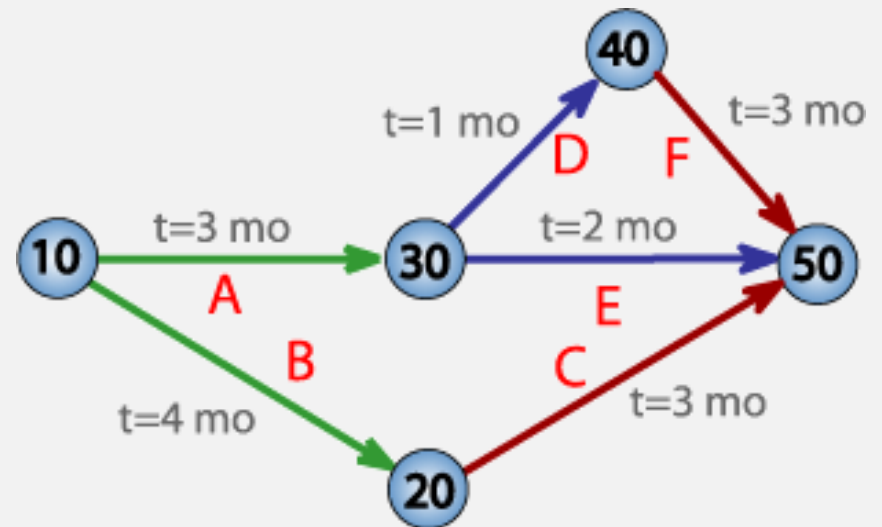
Example from Wikipedia

http://en.wikipedia.org/wiki/Program_Evaluation_and_Review_Technique

Critical path = 7 months

Making a good presentation

- It's amazing how little you need - don't try to say too much, cram too much in…

bla bla…..

bla bla…..

bla bla…..

bla bla…..

bla bla…..

bla bla…..

bla bla…..

bla bla…..

bla bla…..

bla bla…..

bla bla…..

Making a good presentation

- It's amazing how little you need - don't try to say too much, cram too much in…

- Don't try to speak too quickly, people simply won't process what you say…

Making a good presentation

- It's amazing how little you need - don't try to say too much, cram too much in…

- Don't try to speak too quickly, people simply won't process what you say…

- Don't worry about being a bit nervous!

Making a good presentation

- Don't worry about pausing to remember what you want to say - gives the audience a chance to think about what you have said so far

Making a good presentation

- Don't worry about pausing to remember what you want to say - gives the audience a chance to think about what you have said so far

- But try to respect the time allocated for the presentation:
  - Practice
  - Check your clock at key-points of the presentation
  - In long talks, identify optional slides that you can possibly skip

Making a good presentation

- Try to speak aloud

Making a good presentation

- Try to speak aloud

- Look at the audience

Making a good presentation

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- Look at the audience

- Try to give a simple take-home message

Making a good presentation

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- Look at the audience

- Try to give a simple take-home message

- Make jokes? (after 10-15 minutes 90% of the audience is typically sleeping…)

Structuring a PowerPoint pack

(Expecially for the PR3 presentations)

- About one minute per slide…if you go quicker, people just glaze over!

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- A number of slides to develop the presentation

- A clear conclusion (1 or 2 slides) - not a summary…

Title: at least 36 point

- Text: 24 point is OK

- If you have something complex you want audience to look at, give it out on paper, people cannot read detail from a slide

This doesn't work
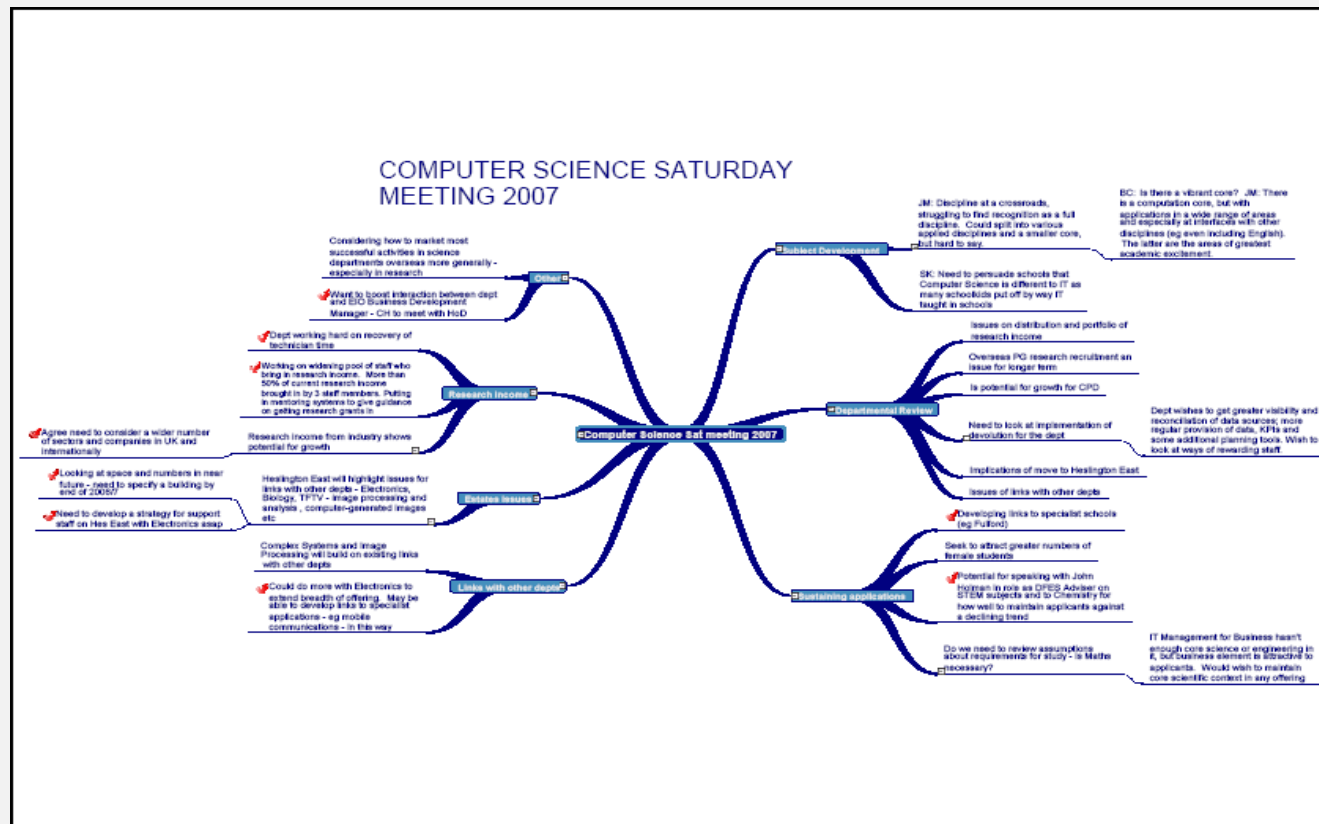
Clear Fonts

- If you really fancy it (Arial)

- Different fonts make a difference too (Times New Roman)

- San serif fonts like Arial, Helvetica and Verdana are clear on a screen

Avoid distracting backgrounds

- And excessively complicated slide designs

Just because Microsoft

- Provides it, doesn't mean it's a good thing

- For instance avoid the flying bullet

- It just irritates the audience…

Rehearse and repeat …
it will get better!