Wrap-Up

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with help from
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Wrap-Up

• Thanks for all the nice talks, we enjoyed them very much!

• We’ve all learned a lot about
  ▪ testing
  ▪ making a presentation

• What else is there to say?
Structure Of This Talk

- What has been achieved
- What’s next
What Has Been Achieved

• Two sides of testing
  - established body of knowledge
    - functional and structural testing, coverage issues, levels of testing, OO-testing, …
  - research items
    - test generation, test specification, test evaluation

• Insight: Testing is an engineering activity
  - test case design ∈ software design (≈ CS)
  - testing research ∈ software engineering research
Where Is This Knowledge Important?

• Industry
  ▪ costly but necessary part of system’s design
  ▪ day-to-day problems, pragmatic solutions
    - what and when to test
    - how to make and run test cases
    - when to stop, how to give evidence

• Academia
  ▪ challenging software engineering problems
    (often massively underestimated)
  ▪ generalisation of pragmatic approaches
    - how to formalise and automatise
    - how to prove and decide
    - how to understand and master
We Haven’t Looked At ...

... testing languages (TTCN-3, UML testing profile, ...)
... specific testing objectives
  (load, stress, robustness, reliability, security, ...)
... test management
... test execution environments
... hardware-in-the-loop tests
... test evaluation problems
... test documentation
... test certification
... testing and quality assurance
... testing and verification
... testing and other life-cycle models
  (model-based testing, extreme programming, ...)
...
• no stopping at any time...
Structure Of This Talk

• What has been achieved
• What’s next
When to Apply Your Knowledge

• As any SE activity, testing can and should be supported by tools
  ▪ well-established commercially successful
    - IBM Rational, Telelogic, Rhapsody, Cantata, McCabe, …
    - huge market, huge secondary market
    - trial versions: try them (e.g. in your 3rd year project)!
  ▪ academic research tools
    - UppAal, UseCaseValidator, RT-Tester, …
    - open domain versions: improve them (e.g. as part of postgraduate studies)!

• Learning (only) by doing!
The Next Step...

...is of course your dissertation. Here are some hints for writing!

Formal requirements
• (approx. 10k words)
• 2 weeks (=10 days) of work
• quality over quantity
Quality of the Dissertation?

• A first step towards a scientific contribution
  - exhibiting the state of knowledge in a restricted area
• A coherent, consistent scientific story
  - abstract – what’s to be found subsequently
  - introduction – why this is important
    - usually ending with related work and structure
  - main part – what you have to say
    - definitions and background information, problem statement
    - methods and results, suggested solution
    - examples and applications, benefits, experimental results
  - conclusion – summary and further work
  - references
  - appendix (if needed)
How To Write The Dissertation

• Make sure that you understood your topic
  ▪ use background material, look at the given references
  ▪ experiment with tools

• Say it in your own words
  ▪ the book chapter is outlining the theme; you are allowed to shorten or expand – it’s your choice!
  ▪ your text should be easy to read: Be straightforward, make use of short sentences
  ▪ discuss the text in the book from various perspectives – don’t just paraphrase!

• Use your talk as a guidance
  ▪ usually, it’s easy to expand a good talk into a paper, and to abstract a good paper into a talk
Do’s And Don’ts

• Look at examples, use your own examples!
  ▪ ideally: one master example, different points of view onto the same example
  ▪ examples should be such that abstract concepts are made concrete
  ▪ no “and so on” in the example; if necessary, move to appendix

• Be self-contained
  ▪ if you use a defined notion, give the definition
  ▪ if you use a theorem, quote it (completely)

• Never, never, never just copy/paste!
  ▪ it’s a criterion for rejectance and worse!
  ▪ the supervisor will find out!
Tips and Tricks

• Some clues how to achieve a good grade
  ▪ Put yourself in the role of the reader, explain to her
  ▪ Start with the main part (definitions), then prepare your examples, then methods and results, then the rest
  ▪ Make sure the order is reasonable
    - definition before use
    - cause before effect
    - problem before solution
  ▪ Use a spell-checker
  ▪ Have a second reader
  ▪ Don’t be afraid to delete and rewrite

• I’m sure it will be a perfect dissertation! 😊
The Very Next Step …

• … is the course evaluation!
  You have five minutes…
The Last Step...

- enjoy the rest of the weekend!