SE Technical Presentation Milestone (TPM)

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Content based on materials provided by
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Fall 2015
1. The Technical Presentation Milestone: Mechanics

2. Presentation Skills
   - Planning
   - Showing
   - Telling
   - Answering questions

3. Presentation Styles

4. Conclusion
http://patricklam.ca/tpm
Prof. Lam’s TPM page for SE students

http://www.ece.uwaterloo.ca/~tppe000/
Dr. Harder’s TPM page for ECE students
Why the TPM?

Co-op employers:

“UW students cannot give presentations.”
When?

2B
What’s in a TPM presentation?

Technical presentation, usually related to your 2B work term.

Structure:

- 12-15 minutes (with slides)
- 3-5 minutes question-and-answer
- 1-2 evaluators at a time + peer audience

Note: Presentations shorter than 12 minutes or longer than 15 minutes are penalized for poor organization. The penalty increases after 15 minutes and 30 seconds.
What should I talk about?

Choose a technical topic, for example involving some math or logic.

Discuss something you know (well).

Show enthusiasm and confidence!
Purpose

Goal: To inform and persuade.

Your presentation is not:
- a sales pitch;
- a lecture; or
- your work-term report in slide form.

Level: appropriate for 2B students.
Desired learning outcomes

- Ability to use a clear and logical organization in written or oral technical communication.
- Ability to use figures and tables effectively in written or oral technical communication.
- Ability to use rhetoric to inform and persuade in written or oral technical communication.
- Ability to make effective oral technical presentations.
Evaluation

Four criteria, each marked out of 2 points:

1. organization
2. quality of overheads
3. presentation style
4. response to questions

A passing grade is at least 1/2 (50%) in each category *and* at least 6/8 (75%) overall.

Evaluation form available online:

Results from S2015

Last year’s class had the following results:

- 152 students total
- 142 (93%) received credit
- 12 (8%) failed first attempt
- 5 (3%) no-shows, did not receive credit
SE students are pre-enrolled in TPM 1X000. (Please check your schedule in Quest.)

In 2015 the TPM sessions started in the second week of the spring term and took place TWTh 3:30-6:20pm in EIT3145.

Bring your .ppt or .pdf file, and (optionally) your own laptop.

Dress appropriately and attend all talks in your session.

Pick up your evaluation form a week after the presentation.
Required content

Three mandatory slides:
- title slide (talk title, your name, date)
- outline (presented after title slide)
- summary (concludes the talk)

Number your slides to facilitate Q&A. You may skip the slide number on the title slide.
Timer

(thanks to Douglas Wilhelm Harder for these pictures).
Recovery options

The TPM is a degree requirement and you must clear it (one way or another) before graduating.

Each SE student will be given an opportunity to receive evaluations from up to two graders.

If you receive a failing grade from both graders then make an appointment to see the SE TPM coordinator (i.e., myself) in person to discuss alternative recovery options.
Example TPM Presentations

http://www.ece.uwaterloo.ca/~tppe000/Examples/

- Comparison of PostgreSQL and MySQL/InnoDB (Baverstock)
- How Apple’s launchd Compares to a Standard System V init (Zarnett)
- Network Security—Passive and Active Methodologies (Robinson)
- Next Generation Optical Media (Armstrong)
Next: tips and opinions about presentations.

- Planning
- Showing
- Telling
- Answering questions
Tips on planning

Give yourself enough time to prepare and practice!
(This talk took one full day to prepare.)
Planning

Pick a topic

From 2B work-term report, perhaps.

Next, learn about your topic.
Planning

Questions to think about

What’s your objective?

What do you want to say about it?

(Who is your audience?)

What is your evidence?
Organize your thoughts

Nov, 30

TPM Talk:

15 mins - TPM requirements and conventions
- webpage and scheduling
- structure
- content
- passing/failing consequences, evaluation
- examples

5 reasons people fail

35 mins - good technical presentations
- leading style (at end), cognitive style of PowerPoint
- speaking tips
- presentation layout
- practicing
- answering questions
- preparing talks
Practicing

Practice early and often!

Consider:

- going to EIT 3145
- timing your presentation
- getting friends to critique you
Purpose of slides

Visual information:
- tables
- diagrams
- charts
- maps

Augment the presenter’s speech and gestures.

Help focus audience attention.
Non-purpose of slides

Not for you to read from with your back facing the audience!

Not for reference afterwards!
Good slide design

Good qualities:

- Readable (large fonts)
- Consistent style
- Contain appropriate content

Guideline: each slide should take about a minute to present.
Bad slide design

Pitfalls:
- too much text, or text too small
- spelling and grammar mistakes
- disunity of purpose
- distracting backgrounds
- weird fonts
- bizarre transitions
- use of Word
Do use graphics! (when appropriate)

Major graphics formats:
  - PNG: lossless compression
  - JPEG: lossy compression

Don’t use JPEG for line art!
Graphics

Don’t use JPEG for line art!
(thanks Douglas Wilhelm Harder for these pictures.)
Maximize information density.
Nonmaximal information density

(Image source: http://commons.wikimedia.org/wiki/File:BBC_licence_fee_expenditure_percentage_2005-6_Redvers.png)
Telling

Speaking well

Try to:

- make effective eye contact
- show some enthusiasm
- vary your tone
- speak at suitable volume
- enunciate clearly
- maintain good posture
Speaking poorly

Do not:

- speak too fast
- read all of the talk from cue cards
- hesitate ("um, ah, like") unnecessarily
- fix gaze at any one spot (e.g., back wall)
- put hands in pockets
- panic
Purpose of Q&A:

- probe your knowledge of topic
- display unscripted interaction
You may repeat the question to the rest of the audience.

Answer the question that was asked.

“I don’t know” is not a wrong answer.
Don’t try this at home

A few out-of-the-box ideas.

May help you create great presentations.
The Cognitive Style of PowerPoint

Edward R. Tufte

The Cognitive Style of PowerPoint:
Pitching Out Corrupts Within

http://www.edwardtufte.com/tufte/books_pp
Gettysburg Address in PowerPoint

Example of a bad slide show:

http://norvig.com/Gettysburg/
Handouts

Improving Hob's Specification Language
(AOSD '05)

Module must allocate array:

\[
\begin{array}{cccc}
5 & 8 & 4 & \ldots \\
\end{array}
\]

redundant

proc init() ensures Init'
proc add() requires Init &...
proc del() requires Init & ...
proc isEmpty() requires Init & ...

Solution: Defaults

Specifications aggregate, hurting scalability

Solution: Scopes

Case Studies: 2
- data structures
- singly- & doubly-linked lists, arrays as sets, stacks, queues, queues
- Minesweeper Benchmark
- 750 lines impl, 250 lines spec
- water numerical computation benchmark
- 2000 lines impl, 500 lines spec

Contributions: 3
- Hob framework for modular program analysis
- Specification language; abstraction functions
- Scope invariants, defaults
- Enables multiple diverse analyses to interoperate
- Statically verifies data structure consistency properties
Lessig Style

http://randomfoo.net/oscon/2002/lessig/free.html
Summary

Described the format of the Technical Presentation Milestone.

Gave tips on presentations:

- planning
- speaking
- organizing slides
- answering questions

Described alternative presentation styles.