# Software Engineering Work Reports

## And How to Improve Them

**16 November 2010**          **Jeff Zarnett**          **SE Class Prof Hour**

# The Most Important Things

* Follow. The. Guidelines.

* Ensure technical content

* Write it during the work term

http://www.softeng.uwaterloo.ca/Current/work_report_guidelines.htm

# Marking Work Reports

* Technical communication [0 - 12]

* Technical content [0 - 4]

* Lookup table to reach final disposition

# Write it During the Work Term

* Take your time; do it right

* All data, programs, etc. available

* Everything fresh in your mind

* Possible employer input

# Follow the Guidelines

* Formatting checklist

* Answers to many common questions

* Guidance in choosing a topic

# Choosing a Good Topic

* Analysis - Synthesis

* Quantitative analysis

# Confidential Topics

* Anonymize if possible

* Confidential report

* Employer-marked report

* Self-study report

# Writing the Body

* Write your problem statement

* Explain the scope and context

* Clearly define all criteria & constraints

* Analysis: present and evaluate options

* Synthesis: show decisions along the way

# Conclusions

* Statement of facts

* Always supported by the body

# Recommendations

* Concrete (Cost, Timing, Consequences)

* Come directly from the conclusions

* No new courses of action

# Recommendations

"The company should use Product X."

or

"The company should spend $700.00 to purchase Product X immediately."

# References

* Not just for direct quotations/excerpts

* Cite anything that is not your own work

* Avoid committing an academic offence!

# Unacceptable References

* "Unknown"?

* Wikipedia?

* Company internal documents?

# Background

* Assume a technical reader

* If unsure, add it to the background

* Use appendices if necessary

# Appendices

* Big tables

* Long calculations

* Extra background

* Company documents (with permission)

# Pitfalls

DOCUMENTATION

# Pitfalls

* Problem too abstract (no context)

* Scope too narrow or too broad

* Relevance to Software Engineering

# Pitfalls

* Unclear problem statement

* Unclear criteria or constraints

* Inconsistent analysis

* Insufficient technical detail

* No quantitative analysis

# Pitfalls

* No reasonable alternatives

* Unfounded conclusions

* Vague recommendations

* New material introduced along the way

# Key Questions

* Is there a decision being made?

* Are there at least 2 reasonable options?

* Is my choice supported by the analysis?

# Technical Communication

"The best idea in the world is worthless if you can't communicate it to someone else."

# Follow the Guidelines

* Use the formatting checklist

* Order of the report is provided

* General rules explained

# Spelling & Grammar

* Proofread for spelling & grammar

* Don't give the impression you don't care

* Don't rely on the spell checker

# Grammar Troubles

Frequently-misused punctuation marks:
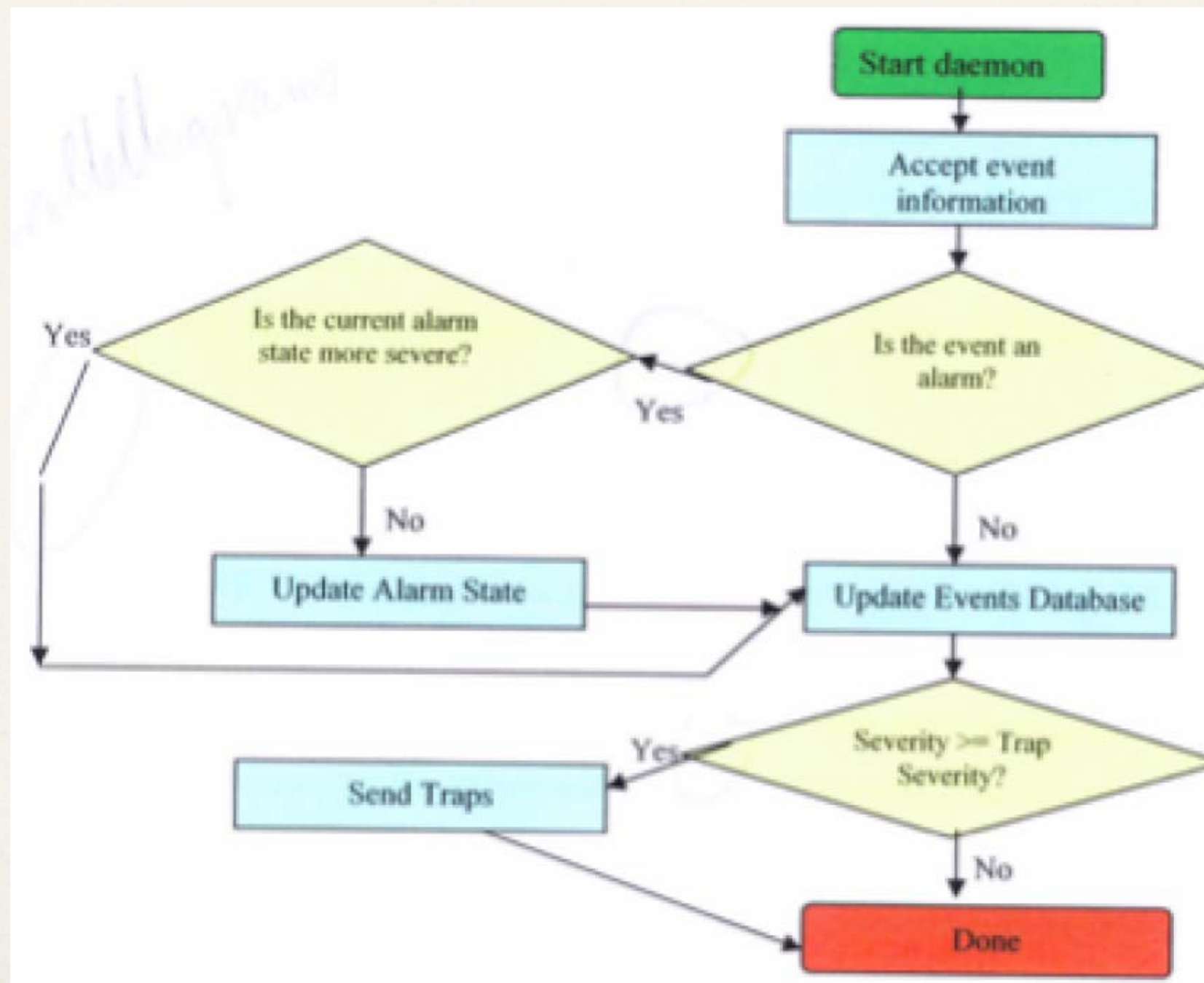 - – — (hyphen, en dash, em dash)
 ' (apostrophe)
 : (colon)
 ; (semicolon)

# Common Writing Errors

* Redundancy

* Inconsistent plural forms

* Unclear lists

* Unfinished thoughts

* Casual writing style

# Communication Examples /8

# Tables: What not to do

|  | Height (m) | Weight | Length | Cost ($) |
|---|---|---|---|---|
| Option Number 1 | 1 | 5 | 45 cm | 2999 |
| Option Number 2 | 1.745 | 11 | 0.5 m | 499.50 |

# Proofreading and Reviewing

* Look at it with fresh eyes

* Print it out

* Read it out loud

* Show your employer

* Ask a friend

# Resubmissions

* Listen to the marker's comments

* Don't be afraid to ask for clarification

* Don't put it off until the last day

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