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# SQA Is Not Testing

"If builders built buildings the way programmers write programs, then the first woodpecker that came along would destroy civilization."

– *Gerald M. Weinberg/Weinberg's Second Law*

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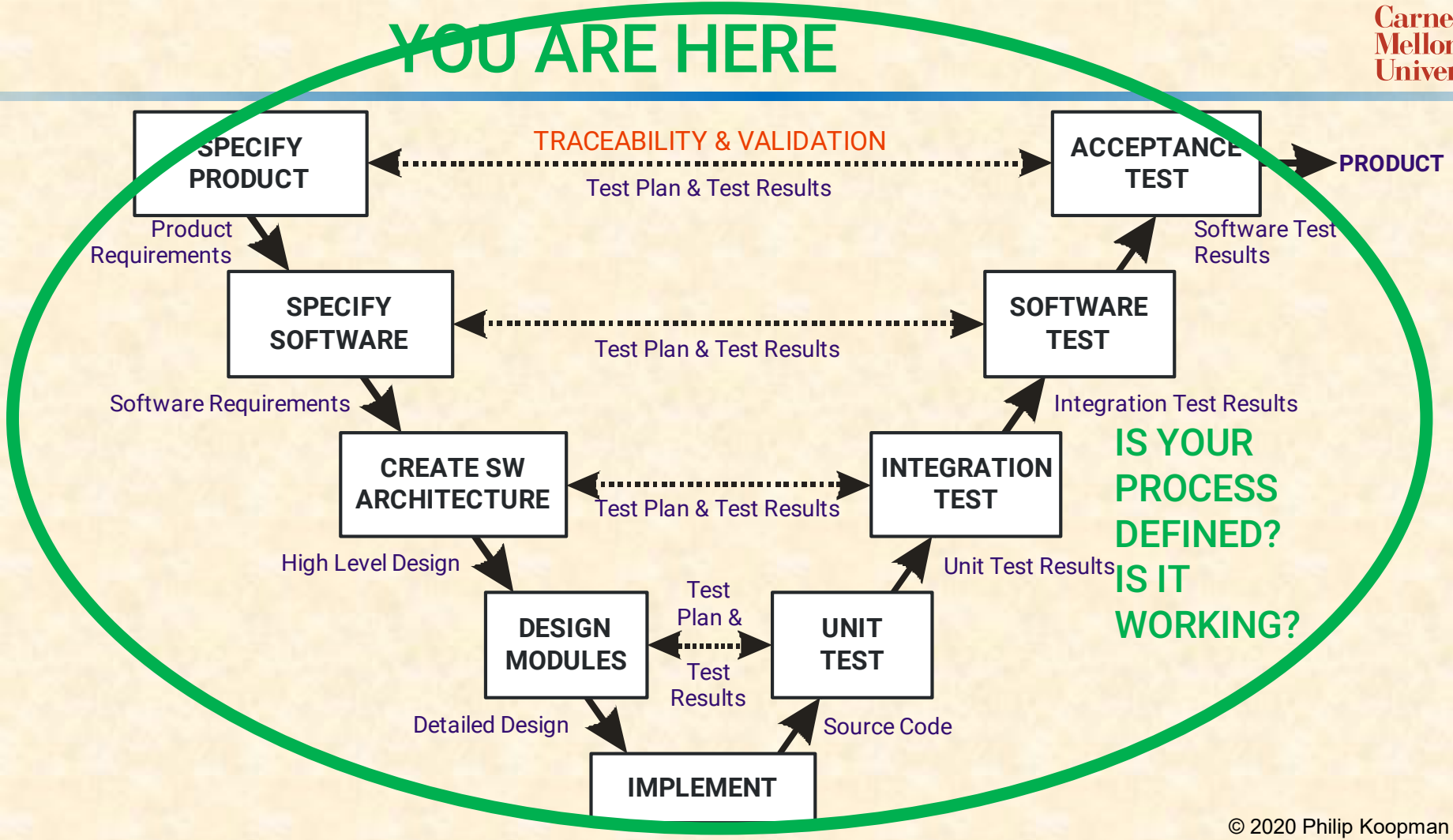
# YOU ARE HERE

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# Software Quality Assurance (SQA)

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- Anti-Patterns:
  - Process steps are being skipped
  - Nobody tasked with ensuring SW process is actually being followed
  - Less than 5%-6% of effort on SQA
- SQA responsibilities:
  - Define & maintain software process definition
  - Train on process and related skills
  - Audit to ensure process is being followed
  - Keep metrics & diagnose process-related failures
  - Coach/intervene to fix process failures

DEFINE
TRAIN
AUDIT
DIAGNOSE
FIX

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# Audit: Is The Process Being Followed?

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- Every process step produces artifacts
  - If it's not written down, it didn't happen
    - Audit says "yes, it happened"
  - Artifacts must be lightweight but useful
    - Artifacts are the arrows on V diagram

https://www.flickr.com/photos/81894496@N06/15896297412

- Process quality audits are more subtle
  - Some information from quality of written artifacts
    - Completeness – were all required fields filled out?
    - Internal consistency checks, e.g., traceability
  - Some information indirectly via process-related metrics
    - Are defects escaping to later process stages?
  - Sometimes direct observation (e.g., randomly attend peer reviews)

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# SQA Personnel As Coaches

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- SQA defines the process
  - With inputs from all stakeholders!
  - Keeper of the process diagram
  - Create/maintain templates and work aids

https://pixabay.com/en/softball-team-coach-sports-1485997/

- SQA conducts training
  - Initial training for new team members
  - Remedial coaching, guidance, etc. for process failures
- SQA keeps records & metrics to ensure process is on track
  - Metrics should encourage high quality work products
  - Better to coach problems than punish them

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# One Reason Process Matters

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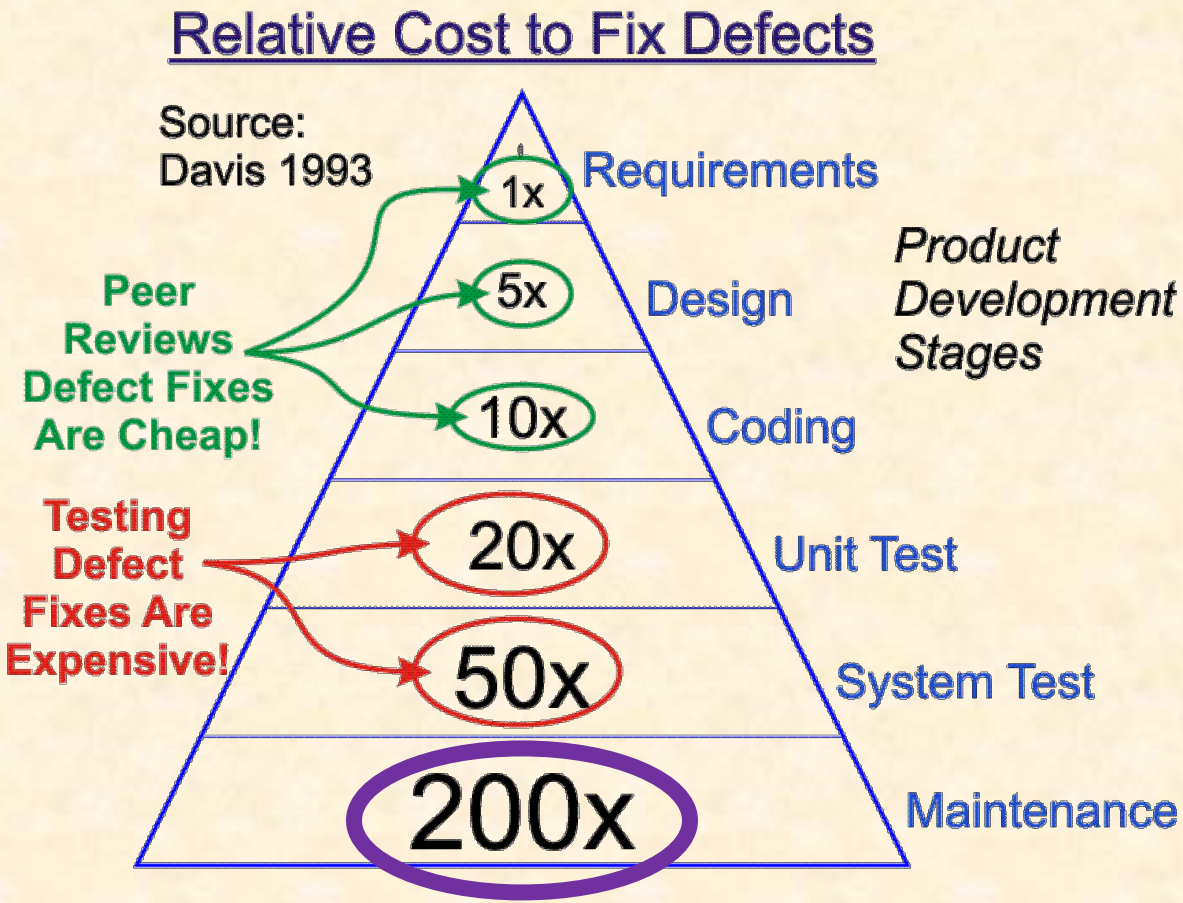


- **Poor process:**
  - Bugs escape to field
- **Testing:**
  - Can't even look for bugs until it's expensive to find and fix them
- **Peer Reviews:**
  - Find bugs while it is still cheap to do so

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# SQA Best Practices

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- SQA must have broad view of quality
  - Define & maintain processes
  - Audit & measure process effectiveness
  - Train & intervene to keep process conformance on track
  - About 5%-6% of staffing for SQA

- SQA pitfalls
  - SQA is not testing (product defects); it's about process defects
  - Avoid form over substance; technical quality matters!
  - Beware adversarial role of SQA (the "Process Police")

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*Essential*

# Quality Assurance

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*@ThePracticalDev*

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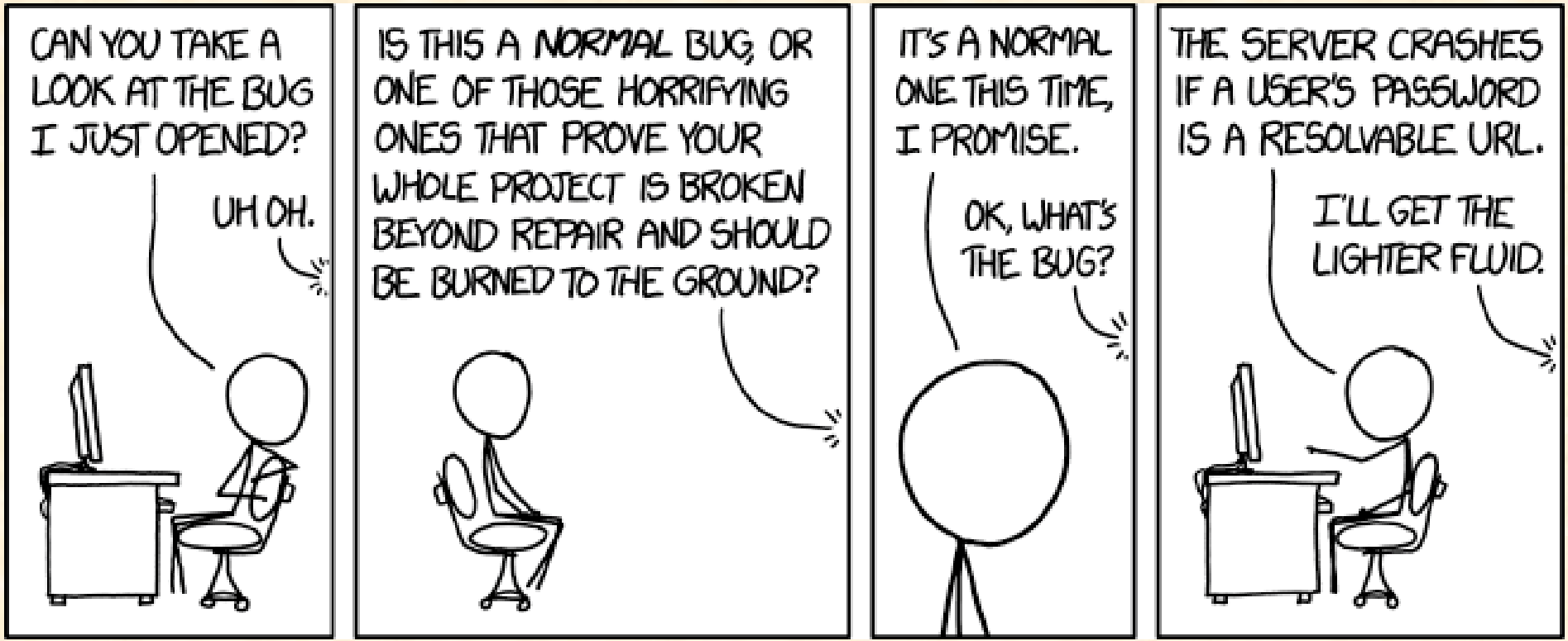


https://xkcd.com/1700/