COSC 499: Capstone Software Engineering Project

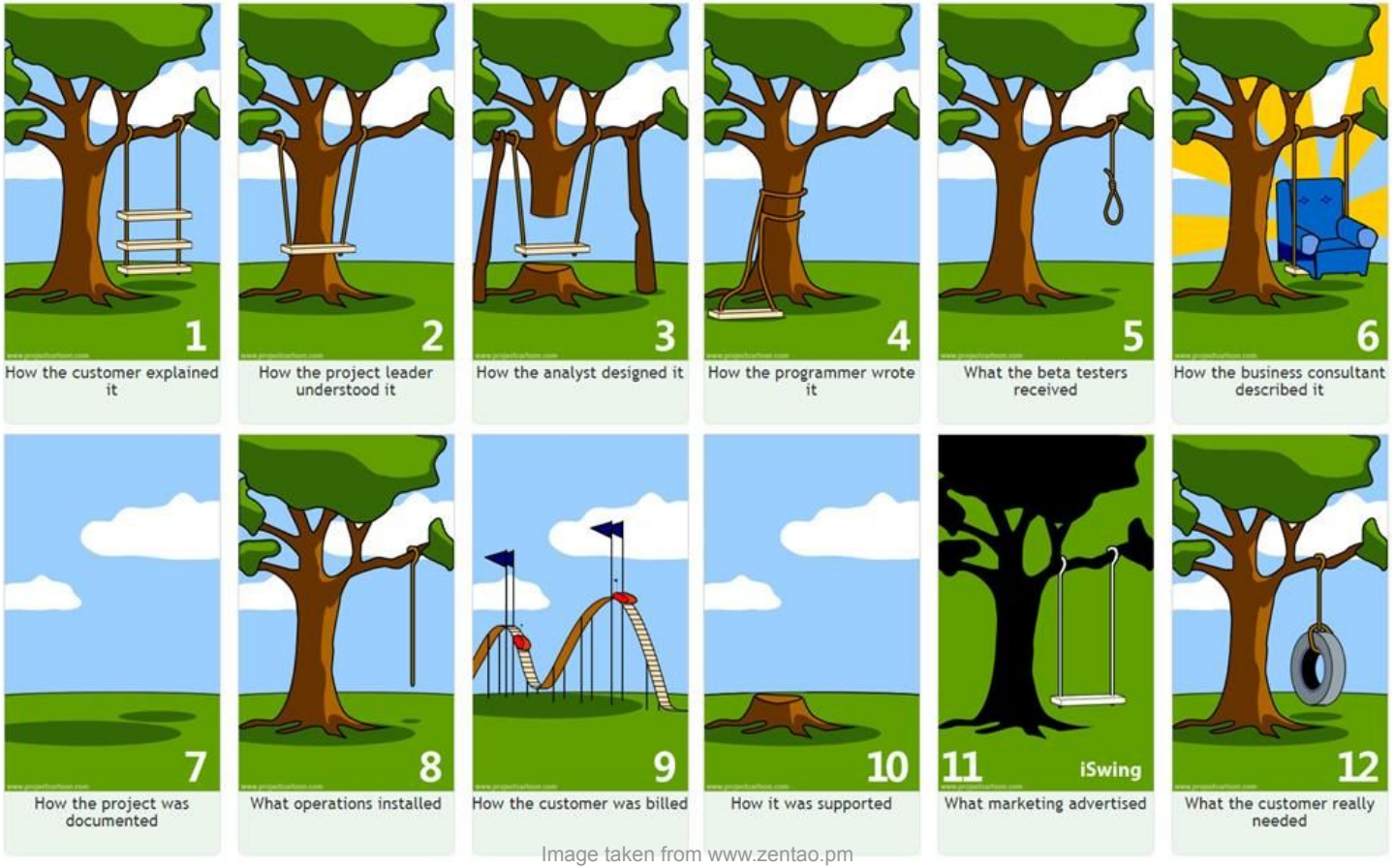

Image taken from www.zentao.pm

Dr. Bowen Hui's Background

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- Associate Professor of Teaching, Computer Science, UBCO

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1996- Past research:

- Edutainment design, computational thinking for kids, intelligent user interfaces, computational linguistics, second language acquisition

(23) Rules

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b.	early:	$r \rightarrow w \; / \; \sigma[\; \_\_$
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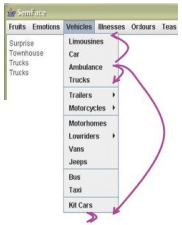

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Industry experience as
System Analyst and Project Manager

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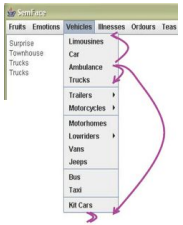
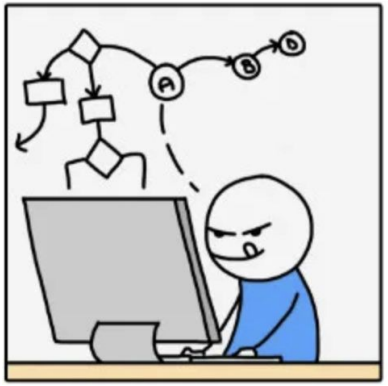


From School to Industry



- A typical degree in COSC
  - Year 1: individual work, toy exercises, code templates
  - Year 2: data structures, algorithms, "real" programs
  - Years 3+4: special topics, small projects
- Which skills do you think are most sought after by industry today?

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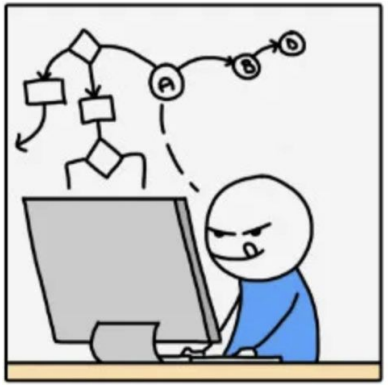

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- Industry expectations (in 2023)
  - Top 5 (**Medium**): cloud computing, data structures/algorithms, Github, containers, vim/IDEs
  - Top 5 (**Indeed**): programming languages, database, data structures/algorithms, source control, testing procedures
  - Top 5 (**LinkedIn**): programming, software architecture, testing, object-oriented design, project team experience

- How to bridge the gap?

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- Exercise industry-relevant practices and use industry tools
  - Technology is fast-changing and every sector uses different tools
  - Pick a direction and learn new things
- Work effectively in a team (**Gestalt effect**)
  - Learn to work with people who are **not you**
  - Accept differences in opinions and not take them personally
  - Embrace differences, recognize strengths, learn from each other

Lessons Learned from Past Capstones

Past successes for students:

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- Reports for grading but do not enhance project outcomes
- Teams chosen to maximize project success
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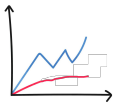

Enrollment continues to grow, while resources/support remain uncertain

New Approach to Capstone

- Project option
  - Themes are provided, each team comes up with their own solution (within reason)

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- Team coaching, reflection, self-management
  - Weekly updates that tell us about the project progress and team dynamics
  - Teams should reflect on the data reported to us

Course Logistics

- In-person classes Mon/Tues and Wed/Thurs:
  - Lectures
  - Team reviews with teaching staff
- Biweekly team checkpoints
  - Gives the teaching staff a "temperature" of the team
- Additional deliverables
  - Short reports, demos (live or video), work in repository, client sessions, peer testing sessions

- Review Canvas course and syllabus
  - Go over: Evaluation Criteria
  - Go over: Tentative Schedule

Use of AI

- Understand how language models work before using it
  - Relies on training data
  - Can be biased (**why?**)

- Recognize and evaluate AI
  - Identify presence of AI
  - Understand how AI can influence content presented
  - Recognize potential inaccuracies in AI responses

- Navigate AI ethically
  - Issues with data privacy and data ownership
  - How might AI impact technology users and broader society?

Course Re-Design and Team Formation Software

- Go to Canvas course for Capstone, select "Quizzes"
  - Select "Consent to Study"
  - In the description, click on Qualtrics link
  - Consent to give us access to your survey data after course
  - Complete for participation marks (regardless of your consent decision)