Coverage Criteria in Action

**Test design (5-10 minutes)**

- Form a team of 4-5
- Each team gets a bag of candies, observe the options you have
- Imagine you are conducting a “candy testing” – Yes, imagine, *don’t eat yet* .. You will execute your tests later
- Discuss in your team and document your test design
  - Use worksheet #1: Come up with one criterion to test the candy (example, C = taste one candy of each texture)
  - Use worksheet #1: Derive a set of test requirements (example, TR = {hard, soft}, where tr1 = hard, tr2 = soft)
  - Use worksheet #2: Design a set of test cases that satisfies the requirements (example, T = {two sweet tarts, one sour patch, three haribo} where test cases t1 = two sweet tarts, t2 = one sour patch, t3 = three haribo)
Coverage Criteria in Action (2)

- What is your criterion?
- Is your criterion appropriate? Justify, why?
- How were test requirements derived?
- How were test cases designed?
- Does the test set satisfy the requirements?
- Is there redundancy in the test set?
Coverage Criteria in Action (3)

Coverage Level (of your tests)

• You have 3-5 minutes to complete this task

• Discuss in your team, analyze the coverage level of your tests
  • Given a set of test requirements derived from your test criterion
  • How many requirements are satisfied by a set of test cases

• Use worksheet #1:
  • Record which test requirements are satisfied by your test set
  • Compute the coverage level

© Praphamontripong
Coverage Criteria in Action (4)

Coverage Level (of another team’s tests)

- Trade a set of your test cases with another team
- You have 3-5 minutes to complete this task
- Discuss in your team, analyze the coverage level of their tests
  - Given a set of test requirements derived from your test criterion
  - How many requirements are satisfied by their set of test cases
- Use worksheet #1:
  - Record which test requirements are satisfied by their test set
  - Compute the coverage level
- Return the test set to another team
Coverage Criteria in Action (5)

- Given your criterion, what is your coverage level?
- Given your criterion, what is another team coverage level?
- Can we compare these coverage levels? What does it mean if one is higher than another?
  - More comparison of coverage levels later
Coverage Criteria in Action (6)

Test execution and evaluation (5 minutes)

- Execute your tests
  - You will now transform yourself into a “human-PUT”
  - For each test case, the “human-PUT”
    - Takes input (candy)
    - Performs a “consume” operation
  - Expected output: normal behavior, “human-PUT” does not crash
- Evaluate your tests, use worksheet #2
  - Document the number of failed test cases
    - Given a test case, expected output ≠ actual output
  - Document the number of test cases that are infeasible
    - Given a test case, the test cannot be executed