Test Plans

This does not mean the code is debugged!

Test Driven Development I

- write tests for new code
- write new code
- test new code

Test Driven Development II

- test new code
  - write integration test
  - integrate new code
  - test integration

regression testing: subject changes to tests in vault to be sure you didn’t break anything

Unit Test for Vertex Collision

- You know answer ahead of time
- Tests include problem cases
Step 1

choose \( v \) and \( p_0 \) randomly
1. distance < \( r \)
2. distance = \( r \)
3. distance > \( r \)

Step 2

choose random vector unit \( w \)
compute path endpoints \( v+(r-\delta)w \), \( v+rw \), and \( v+(r+\delta)w \)

Step 3

throw out test case if dot product is positive.

Step 4

\( 0 < \alpha < 1 \)
\( \alpha = 1 \)
\( \alpha \approx 0 \)

Step 5

test
- One jump positive tests
- One jump negative tests
- Two jump positive tests
- Two jump negative tests
Questions

• Are these good test?
• Are there other kinds of tests we should do?
• How can we automate testing?
  – Test generation
  – Running the tests
• How will we do regression testing?

Come up with a test plan for Prototype II. How will you evolve the plan over the course of the project? Implement the plan.