Test Driven Development

George Mason University
Today’s topics

• Review of Chapter 1: Testing
• Go over examples and questions
• testing in Python
Testing review

• What is a bug? fault? failure?
• What is the goal of testing?
• What are the benefits of test-driven development?
• What makes up a test case?
  – test input(s)
  – test result
• What is a test suite?
Input Domain Characterization

• What are the partitions of the inputs?
• What are the partitions for the outputs? (equilateral, isosceles, etc...)
• Does order matter? (this will almost always be yes, but the order of what is important)
Boundary Conditions

• What are the partitions of the inputs?
• What are the partitions for the outputs? (equilateral, isosceles, etc...)
• Does order matter? (this will almost always be yes, but the order of what is important)
• What are the boundary cases for the input partitions?
• What are the boundary cases for the output partitions?
• What’s the smallest input I can have?
• What’s the largest input I can have?
Inputs of varying number

- What are the partitions of the inputs?
- What are the partitions for the outputs? (equilateral, isosceles, etc...)
- Does order matter? (this will almost always be yes, but the order of what is important)
- What are the boundary cases for the input partitions?
- What are the boundary cases for the output partitions?
- What’s the smallest input I can have?
- What’s the largest input I can have?
- With sequences (like lists), what is the smallest size?
  What is the next smallest size?
Examples

• What examples did you have trouble with?
Converting your tests to python

• Python has several good resources for writing tests
  – However, we won’t use them this semester, because we need to know python first!

• This semester, we will write test cases for all of our programming projects
  – Follow the instructions on the project specifications
Running test cases

• Tests are meant to be run automatically
  – Again, python has resources for testing, that unfortunately we can’t use yet
  – Refer to the project specifications for how to run your tests
  – Recall, your tests will all fail at first before you write any code – this is okay!
Questions?