Equivalence Partitioning

CS 3750
Equivalence Partitioning

*Equivalence partitioning* is a black-box testing strategy that seeks to select test cases from partitions created so that every input in a partition is processed “equivalently” by the SUT.
In the paper “Analyzing Partition Testing Strategies”, Weyuker and Jeng discuss some of the ways in which partition selection affects test effectiveness.
Partition testing can be better, same, or worse than random testing!
It is important to create good partitions. How can we do so? Consider our triangle problem.
Consider the *single fault assumption*:

Failures are only rarely the result of the simultaneous occurrence of two or more faults.

Once we’ve created partitions, how might the single fault assumption influence our test case selection?
Selecting Values

There are two ways we can select values from our partitions:

- **Weak**: each input is tested with a value from each of its partitions
- **Strong**: all combinations of partitions for each variable are tested
Valid and Invalid Values

We can also select inputs from valid and invalid partitions:

- *Normal*: only valid values are selected for testing
- *Robust*: valid and invalid values are both selected