

## Taxonomies of Testing Techniques

- Conventional taxonomies
- Based on operational characteristics
  - Static vs. Dynamic
- For example,

## An Example Taxonomy

- Two dimensions
  - Types of documents
  - Static/dynamic

# Why Taxonomy?

- Well suited to *planning* a series of



# Sampling

- Explore few states

- Statement

- Branch

- Path

- All feasible paths

- Exhaustive

- All inputs

*HET4 1 (e) 2.4 74.10s 74.0 325.721q001.0426080 62.*

*Truly Impossible*

- Threshold of tractability!

- Threshold of decidability!

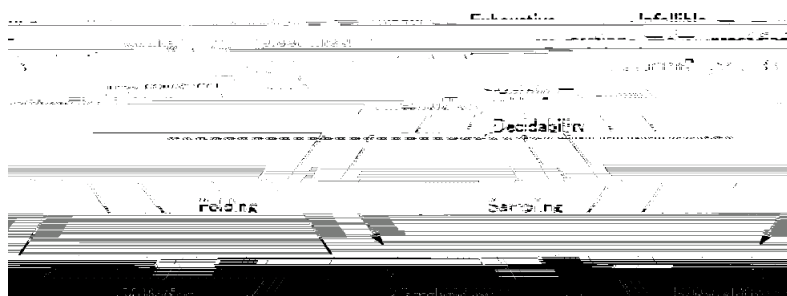
## Proving Correctness

- Impossible in general
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## Combining Folding & Sampling

- First fold states to get a “smaller” state-space
- Then sample a part of this state-space
- For example, create a Petri net model and execute it

## Summary



# Symbolic Evaluation

- Symbolic execution
  - Program flow-graph
    - Nodes for each program statement
    - “If” statement node has two out-edges

# Symbolic Execution

- Program state

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