Specification Based Testing – Part 1

Model Based Testing

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Objective

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Understand
model based
testing strategies

Model Based Software Development

- **Develop an executable model of the behavior of system**
  - Eg. UML
- **Model can be analyzed and simulated**
- **Utilize tools to generate code from the model**

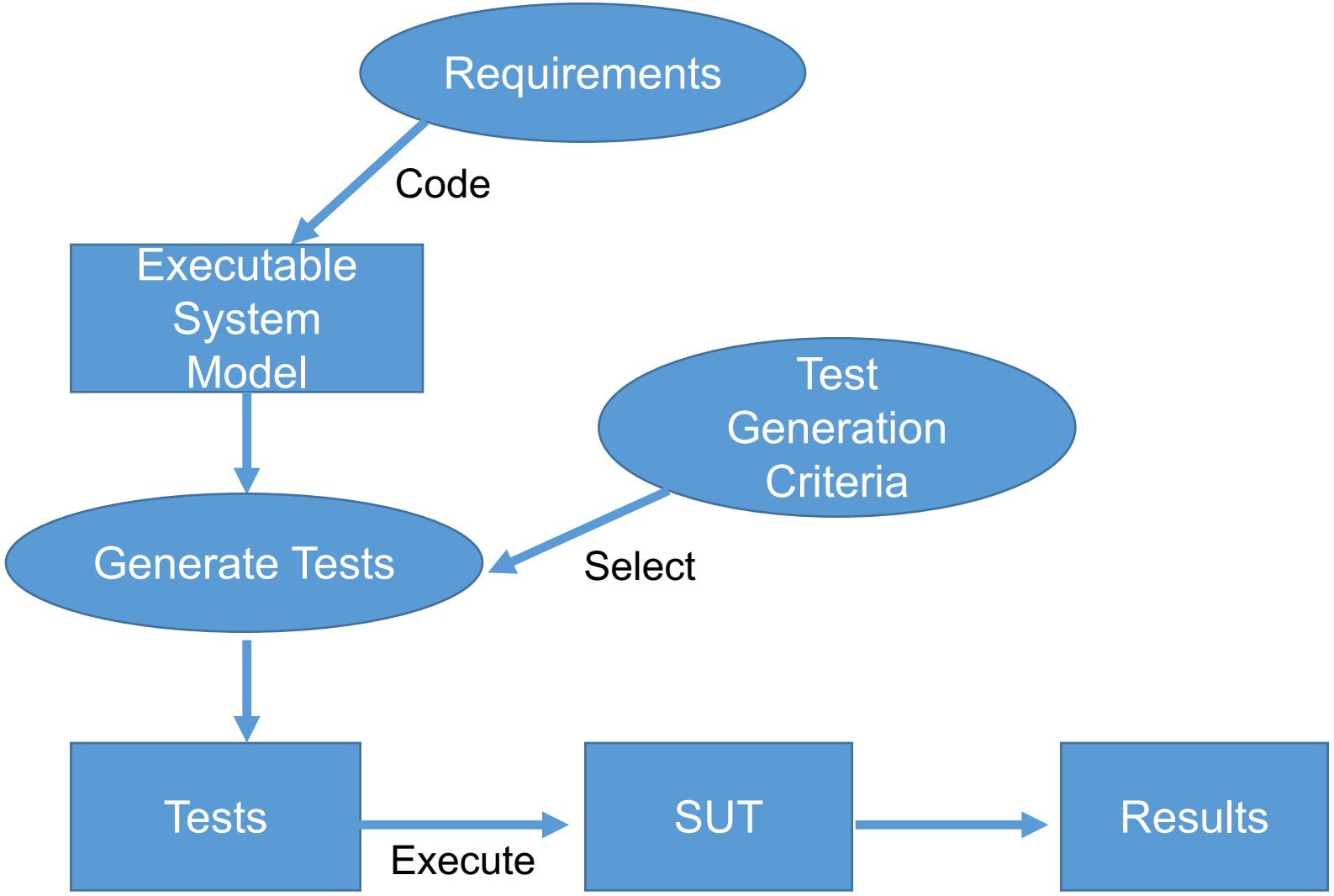
Model Based Testing (MBT)

Generate tests based on the system model

MBT steps

- Create a system model
- Select some test generation criteria (e.g. EP or BV)
- Generate tests
- Execute tests

MBT Process


Requirements
Code
Executable System Model
Test Generation Criteria
Generate Tests
Select
Tests
Execute
SUT
Results

Major Advantages of MBT

- **Modeling provides precision and reduces ambiguity**
  - Assists with program verification
- **Potential for automated test generation**
- **Changes in behavior directly translate into test changes**
  - Especially valuable for programs with volatile requirements

Summary