Why automate?

- Manual testing is
  - ERROR PRONE
  - EXPENSIVE

- REGRESSION TESTING
  - Regress (go back)
  - Test again after changes have been made to software to check that the software does not regress (and break things that used to work).
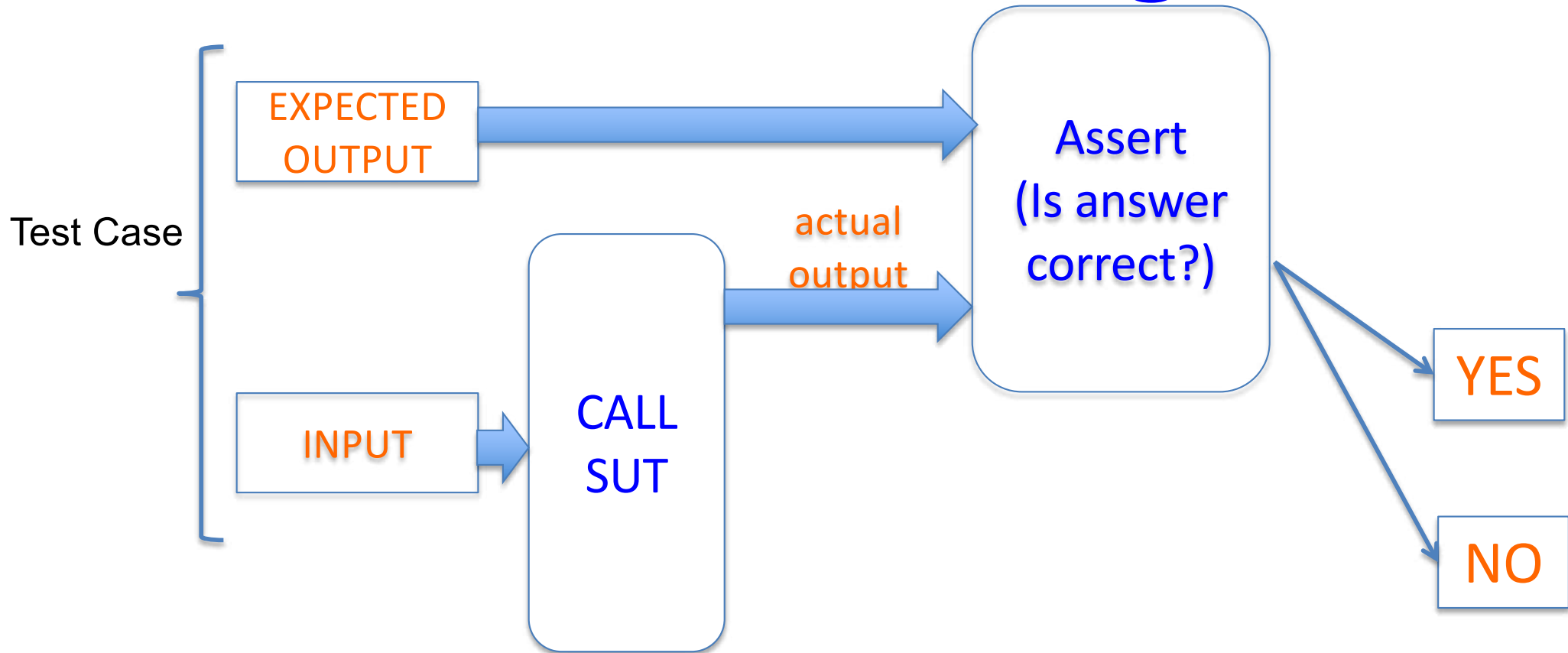 - Means re-testing after changes.

Steps in creating tests

1. **Make a list** of test cases (i.e. input data values and expected result values).

2. **Write n test codes** for n test cases. These call the SUT with input values and compare actual results with expected results.
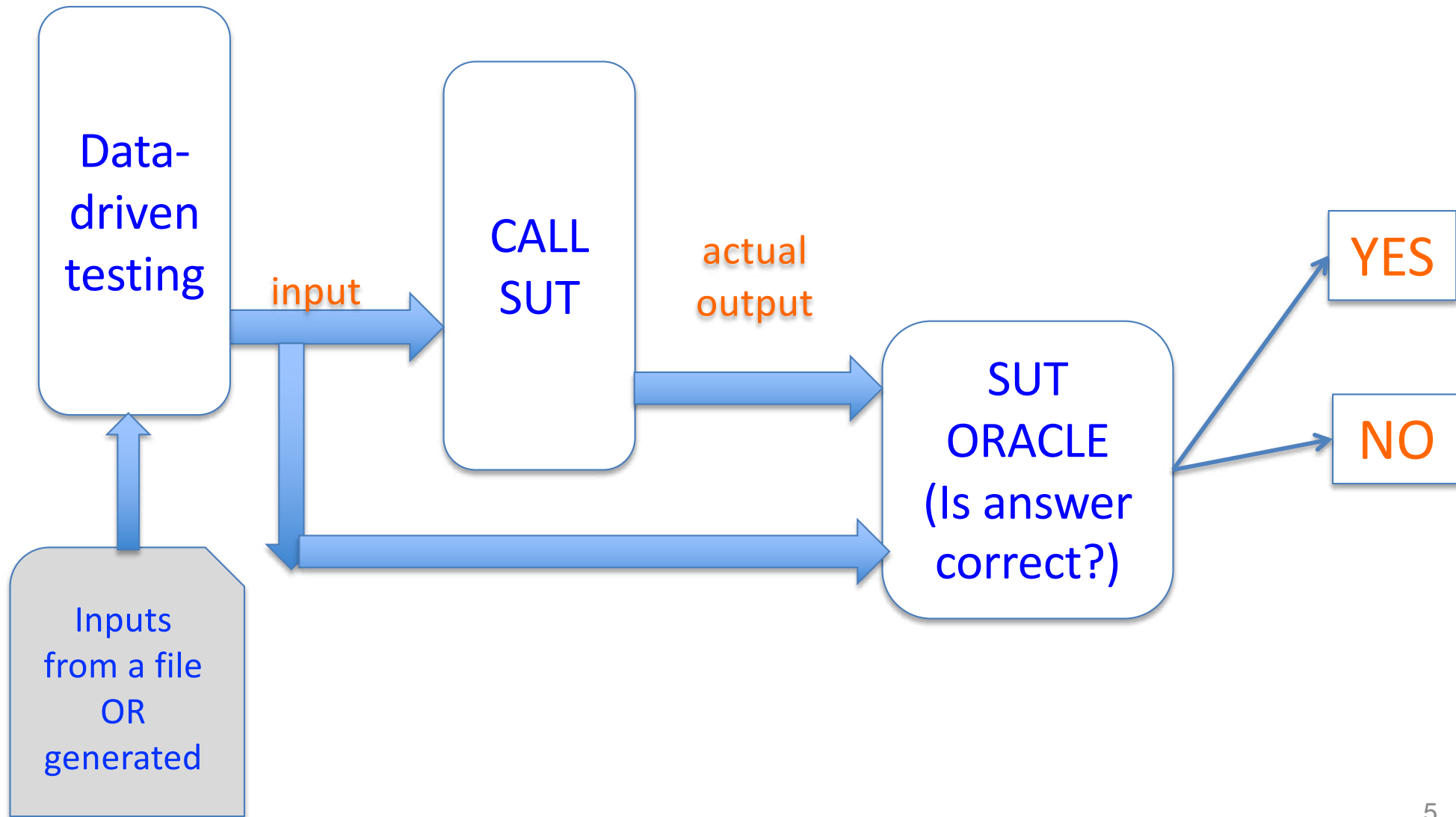
3. **Run** test code

Automating

1. **Make a list** of test cases (i.e. input data values and expected result values).
   - Generate test data automatically (whats the issue?)
2. **Write test code** for test cases. These call the SUT with input values and compare actual results with expected results.
   - Write one test code per function (use data driven or parameterized tests)
   - Create an oracle. Then, do not need expected results)
3. **Run** test code
   - Test suites driver

Normal testing

EXPECTED OUTPUT →

Test Case {

INPUT →

CALL SUT

actual output →

Assert (Is answer correct?)

YES

NO

After automation

What would oracle for "sort" look like?

1. Check if inputs are in outputs
2. Check if actual output is sorted