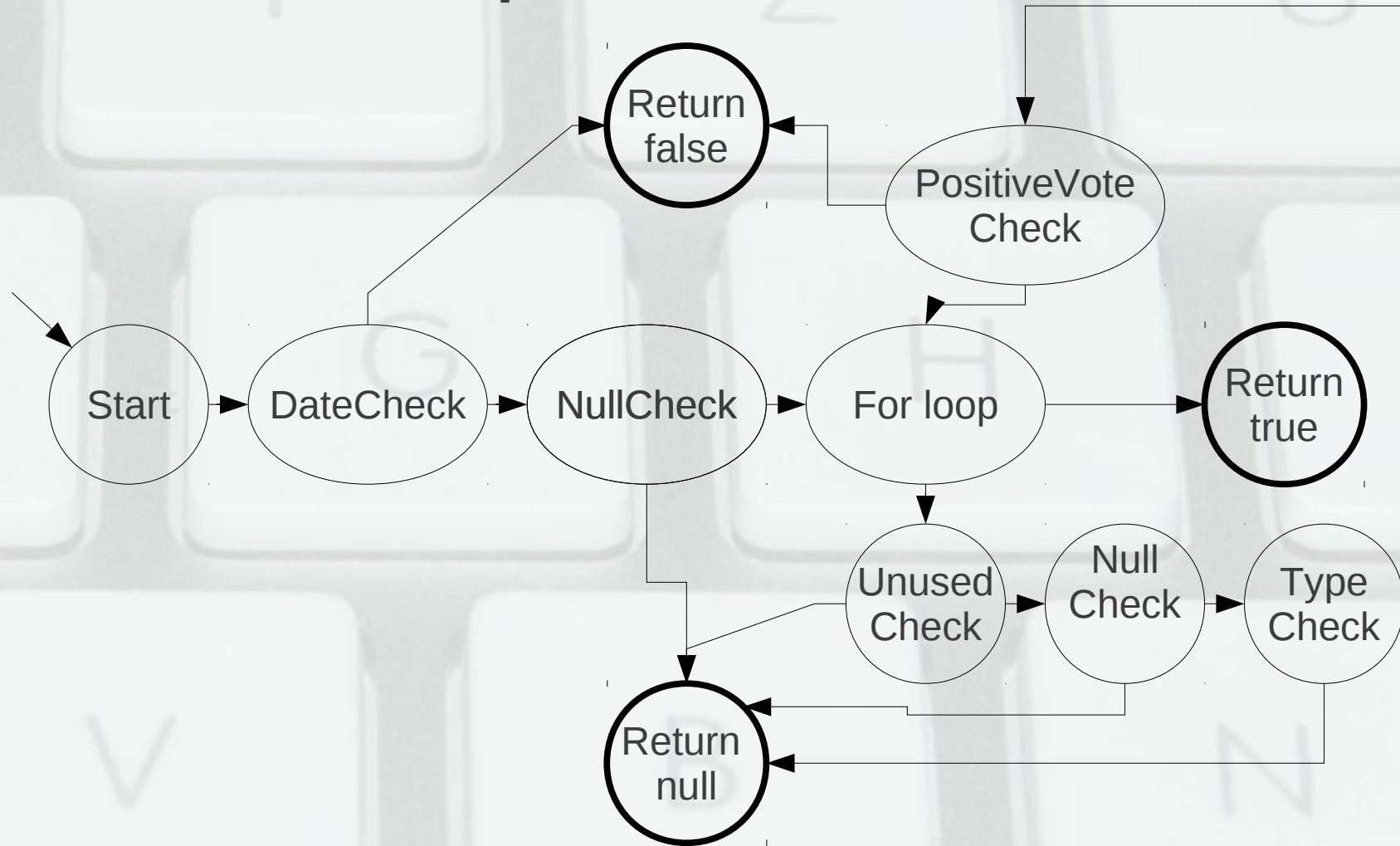# Testing Object Oriented Software 2010

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- Aim: build jUnit test cases which will does Complete Path Coverage of Census class.

- Implementation: Manual generation of Graph, and Manual Implement test cases such that all paths are covered.

- Issues: a) Prone to (human) errors b) Will need the source code to allow generating all paths. c) Not all paths can be easy mapped to a use Case.

Graph - Census

Start → DateCheck → NullCheck → For loop → Return true

DateCheck → Return false

PositiveVote Check → Return false

PositiveVote Check → For loop

NullCheck → Return null

For loop → Unused Check → Null Check → Type Check

Unused Check → Return null

Null Check → Return null

Type Check → Return null

Type Check → PositiveVote Check

jUnit Tests

Class: VoterTest()

- testTrueVote()
- testFalseVote()
- testEmptyVote()

Class: CensusTest()

- testEmptyVoteList()
- testAllPositiveVote()
- testNegativeVote()
- testInvalidVoter()
- testDuplicateVote()
- testUnusedVote()

Conclusions

a) jUnit test provides could way to define the input criteria (defs) With all tests you can nicely follow paths taken (by making sure the take the requires (use).

b) The Graph can be automatically generated.

c) No automatic generation between Path and jUnit test possible, due to the fact that some variables are infinite

d) Testing jUnit paths against Graph to get CPC is a nice prove for completeness.