TEST - DRIVEN DEVELOPMENT

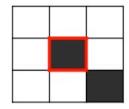
REFACTOR

- REMOVE DUPLICATION IN CODE & TESTS
- RENAME & CLEAN UP
- RUN THE TESTS & STAY GREEN
- CHANGE IMPLEMENTATION, NOT BEHAVIOUR
- RESTRUCTURE IN TINY STEPS
- APPLY THE FOUR RULES OF SIMPLE DESIGN

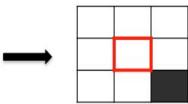
RED

- WRITE A TEST
- MAKE IT FAIL
- KEEP IT SIMPLE
- TESTS ARE EXAMPLE CODE
- TESTS ARE TECHNICAL DOCUMENTATION

Game of Life: RULES

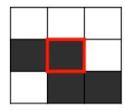


Living cell with less than two live neighbors dies.



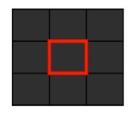


- GET TO GREEN FAST
- TAKE BABY STEPS
- STUCK? UNDO AND START OVER
- WRITE ONLY ENOUGH CODE TO PASS THE TEST
- DON'T TEST EXTERNAL DEPENDENCIES

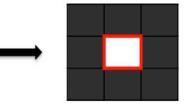


Living cell with two or three live neighbors lives.





Living cell with more than three live neighbors dies.

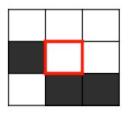


4 RULES OF SIMPLE DESIGN

RUNS ALL TESTS
CLEAR, EXPRESSIVE AND CONSISTENT
NO DUPLICATIONS
SMALL AND SIMPLE CODE

TEST-FIRST DEVELOPMENT

ENSURES TESTABILITY
EVERY FEATURE HAS A TEST
BETTER REQUIREMENTS UNDERSTANDING
EXECUTABLE SPECIFICATION



Dead cell with exactly three live neighbors comes alive.

