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# TEST DRIVEN DEVELOPMENT

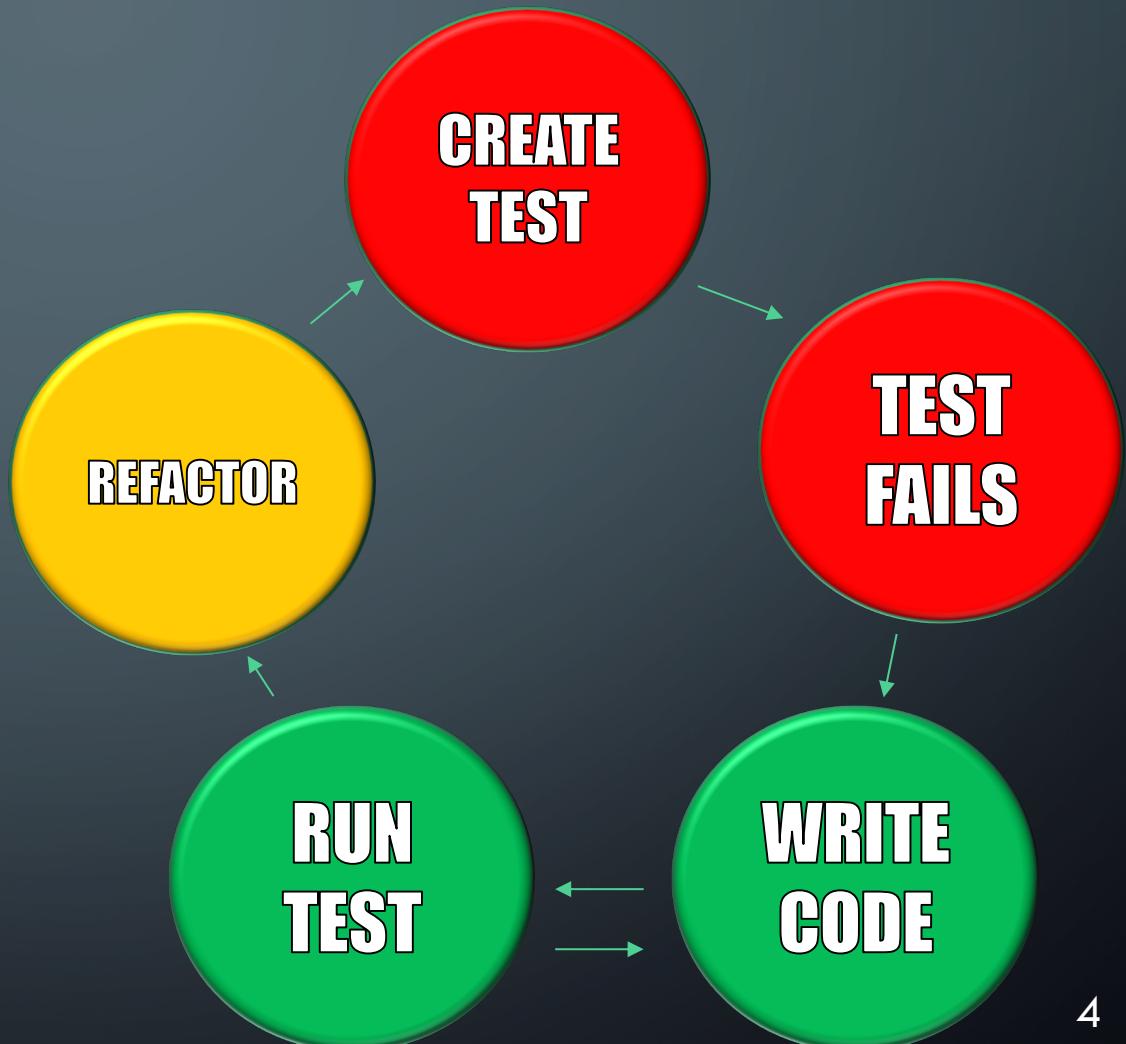
JACOB ELKINS  
CURRY COLLEGE

# WHAT IS TEST DRIVEN DEVELOPMENT (TDD)?

- Short repetitive development cycle
- Requirements
  - Red - Green - Refactor

# RED – GREEN - REFACTOR

- **Red**
  - Create test
  - Test fails – no code
- **Green**
  - Code
  - Test Passes
- **Refactor** : as needed
  - Improve the design
  - Avoid code duplication



# **RED: CREATE TEST AND MAKE IT FAIL**

- What is the requirement?
- Test what the code is suppose to do
- Run test
  - Once failed, Red is completed

**CREATE  
TEST**

**TEST  
FAILS**

# **GREEN: MAKE THE TEST PASS**

- Minimal code
- Pass test
- Pass all tests



**WRITE  
CODE**



**RUN  
TEST**

# REFACTOR: AS NEEDED

- Single Responsibility
- No code clones
- Pass all tests
- Improve the overall solution
- Repeat cycle: as needed
  - Keep cycles short



REFACTOR

# BENEFITS

- Constant feedback
- Documentation
- Understanding requirements and solution
- Ensures easier maintenance
  - No unanticipated consequences

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