

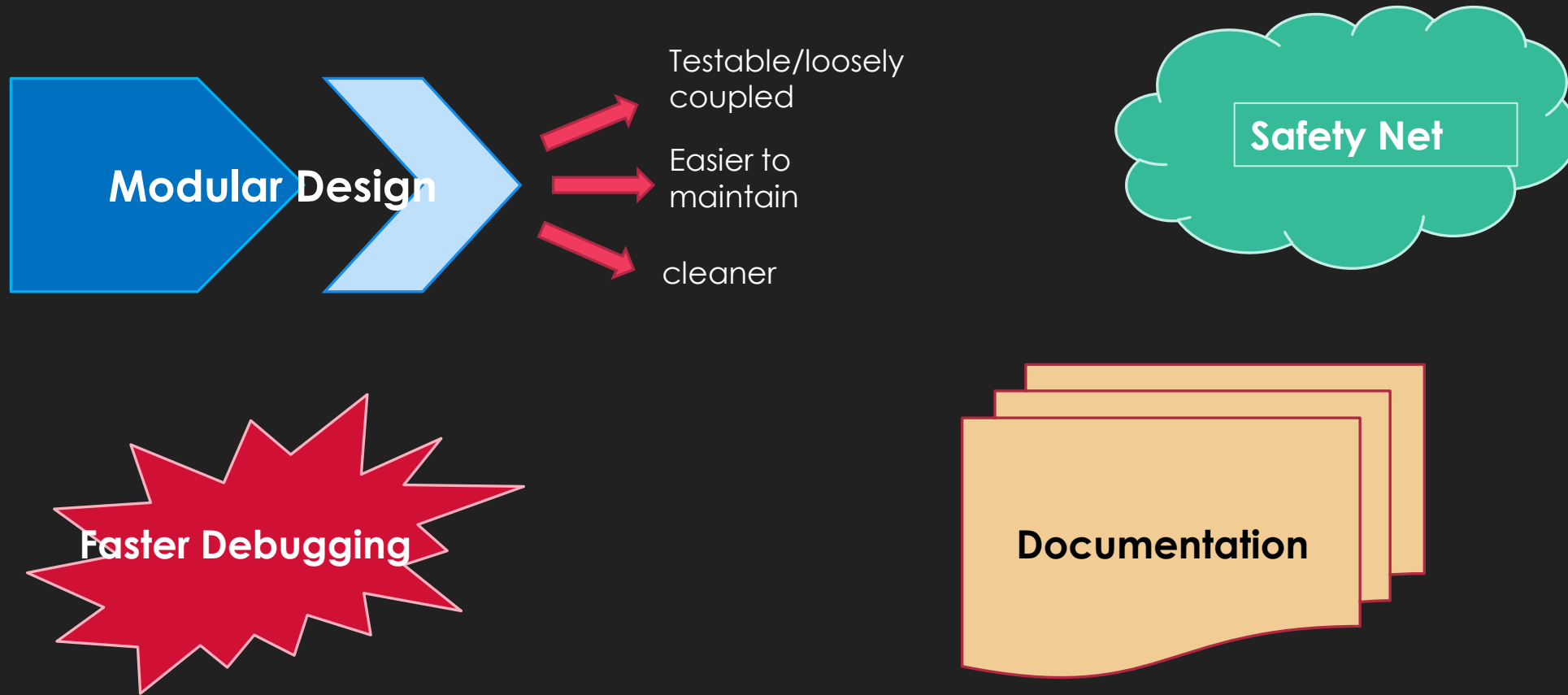
Test Driven Development (TDD)

Where to start?!?

TDD

- Why write tests before production code?
- What do we test?
- The first test
- The 3 Stages
- Ways to Progress
- First Principles

Why write tests first?



What do we test?

BEHAVIOUR

- Think in terms of how the users would want the software to behave – what it does not what it is.
- Focus on one degree of freedom at a time ie. A small (easily testable!) aspect of the intended behaviour.

Engine turns on

Put into gear

Gas pedal pressed



Car moves

The First Test



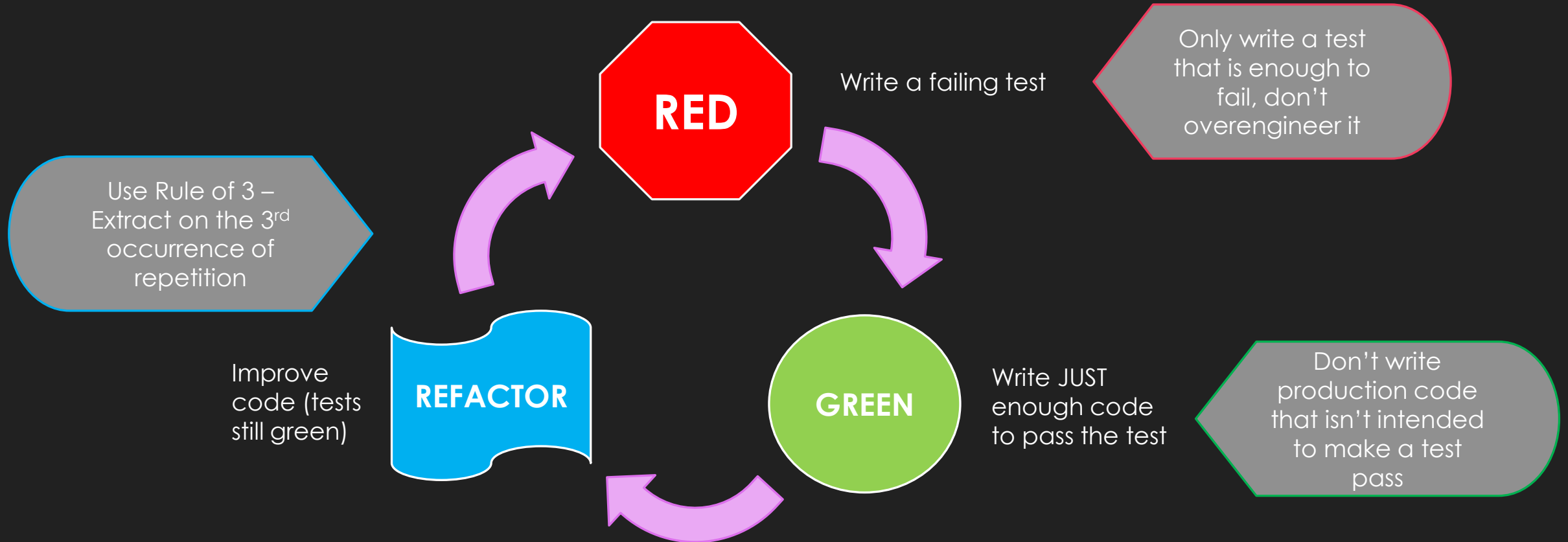
Remember the degrees of freedom – see if an aspect of behaviour can be simplified/broken down into smaller chunks

Write the test name like written English – may help determine dodgy tests from useful ones

Remember to start with the Assert statement – what is expected vs the output of the method

Tests should only have one assertion, and therefore only test one aspect of behaviour each

The 3 stages



Ways to Progress

Fake implementation



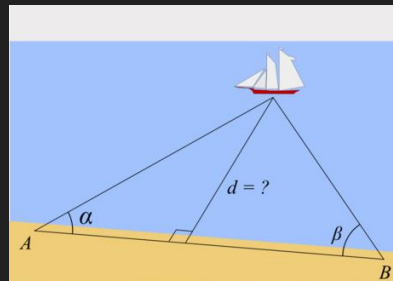
- Hard code values needed to pass the test

Obvious implementation



- Already knowing the necessary code to write to make the test pass

Triangulation



- when not sure how to generalise the behaviour
- First use fake implementation, further test covering different facets of the desired behaviour will force code to be more generic

FIRST Principles

F

Fast – Run often, and run quickly

I

Isolated – no dependency between tests

R

Repeatable – produce same result when run multiple times

S

Self-validating – No manual interpretation should be required

T

Timely – Must be written before the code it's testing

Questions?