Why Testing?

Software Testing

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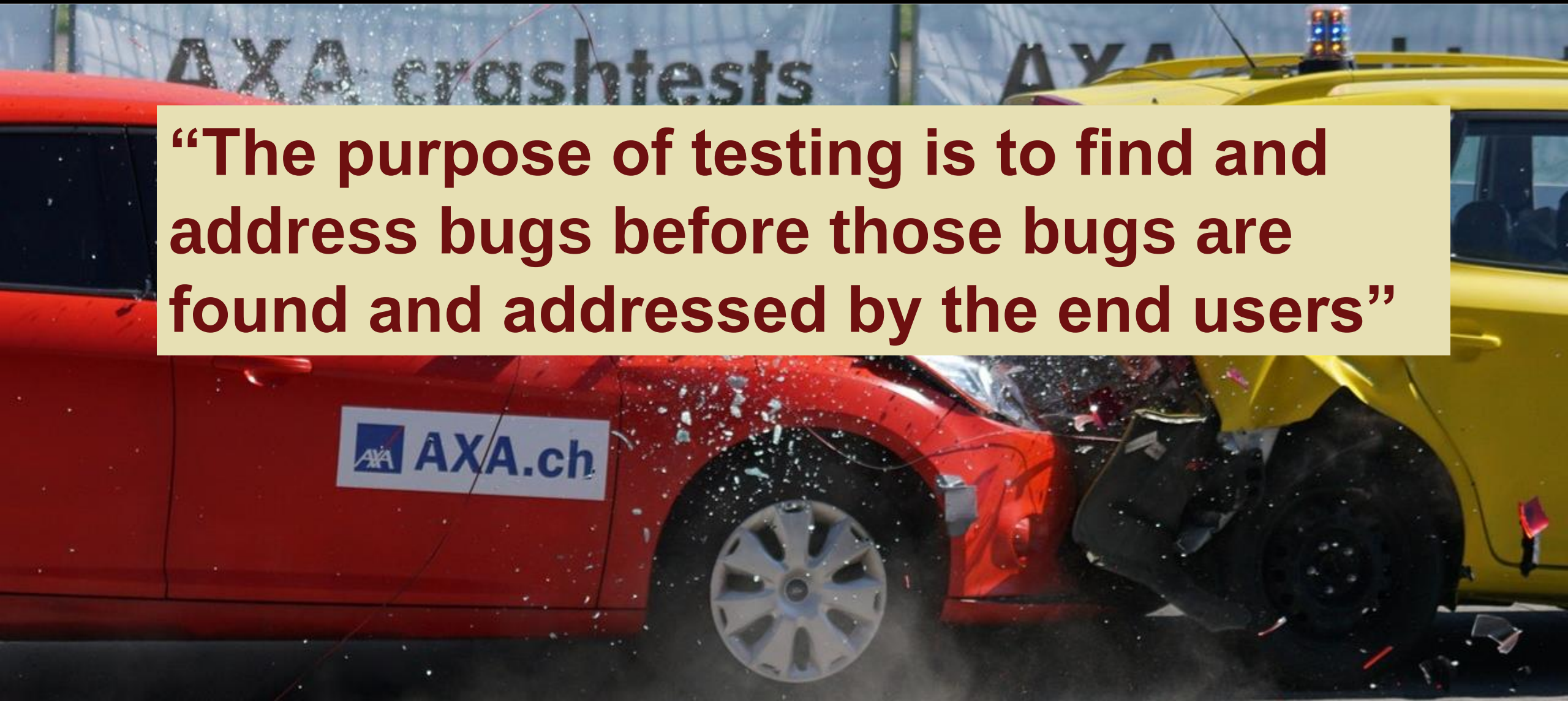
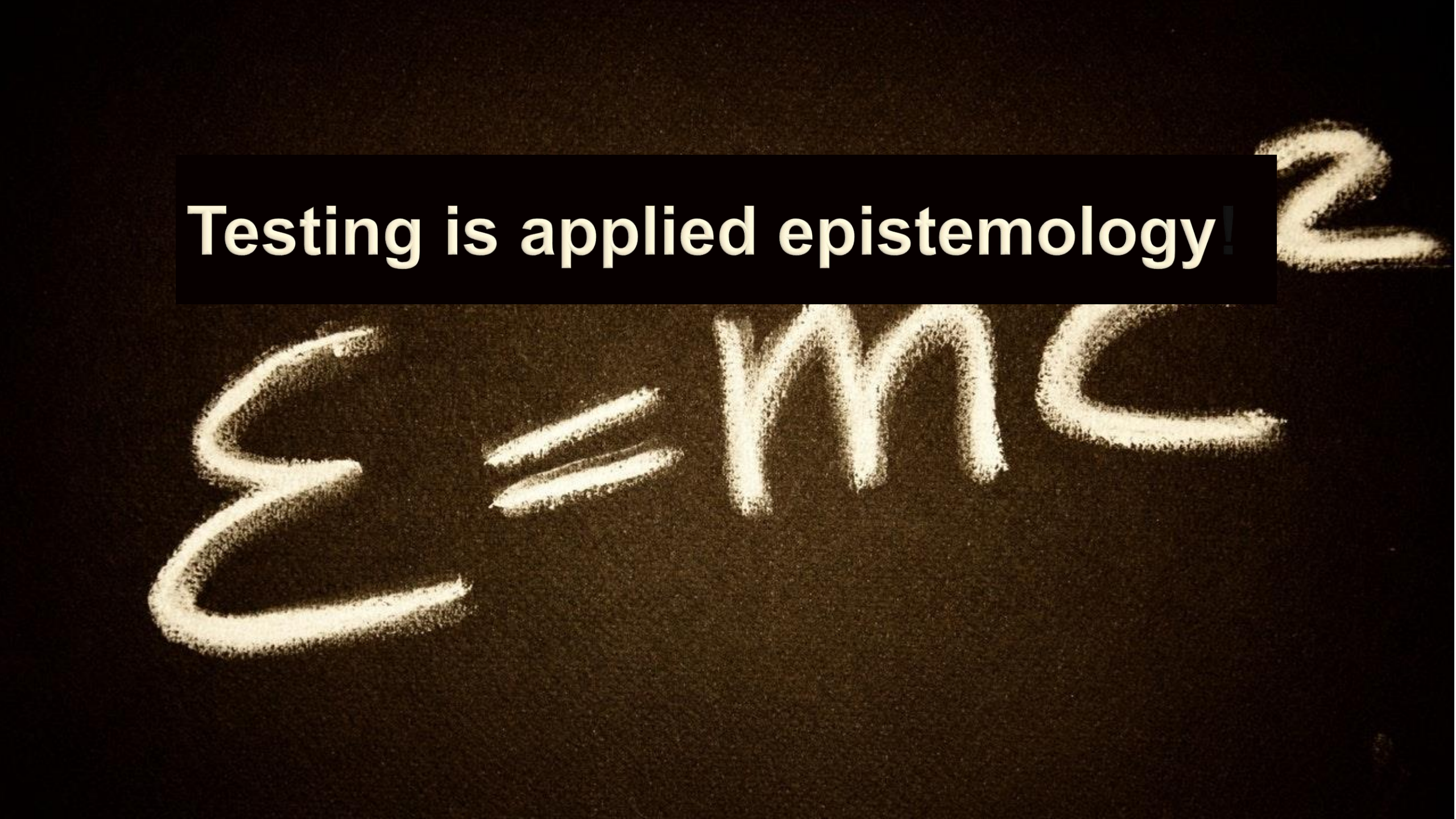
Software Testing



“The purpose of testing is to find and address bugs before those bugs are found and addressed by the end users”

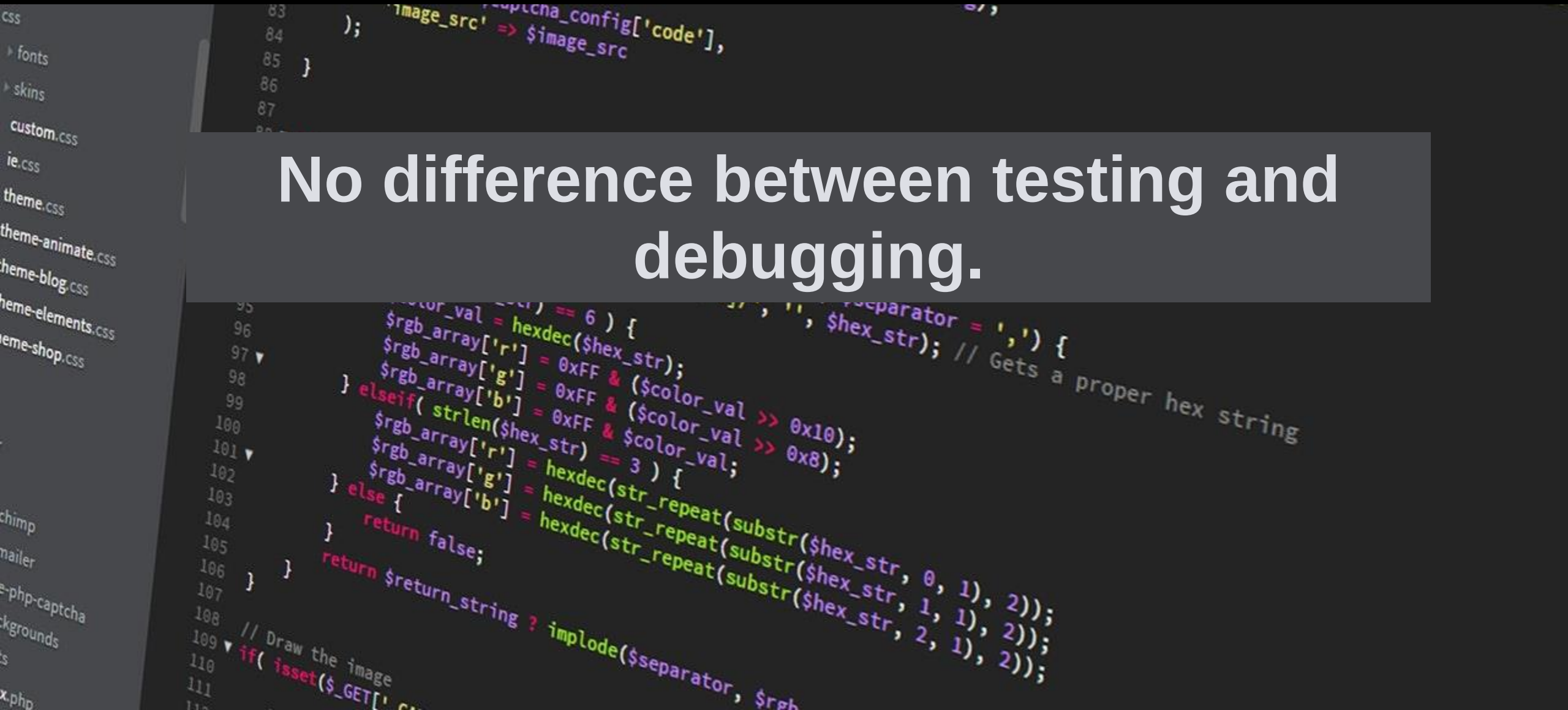

Testing is applied epistemology!
E=mc2


You don’t assure quality by testing!

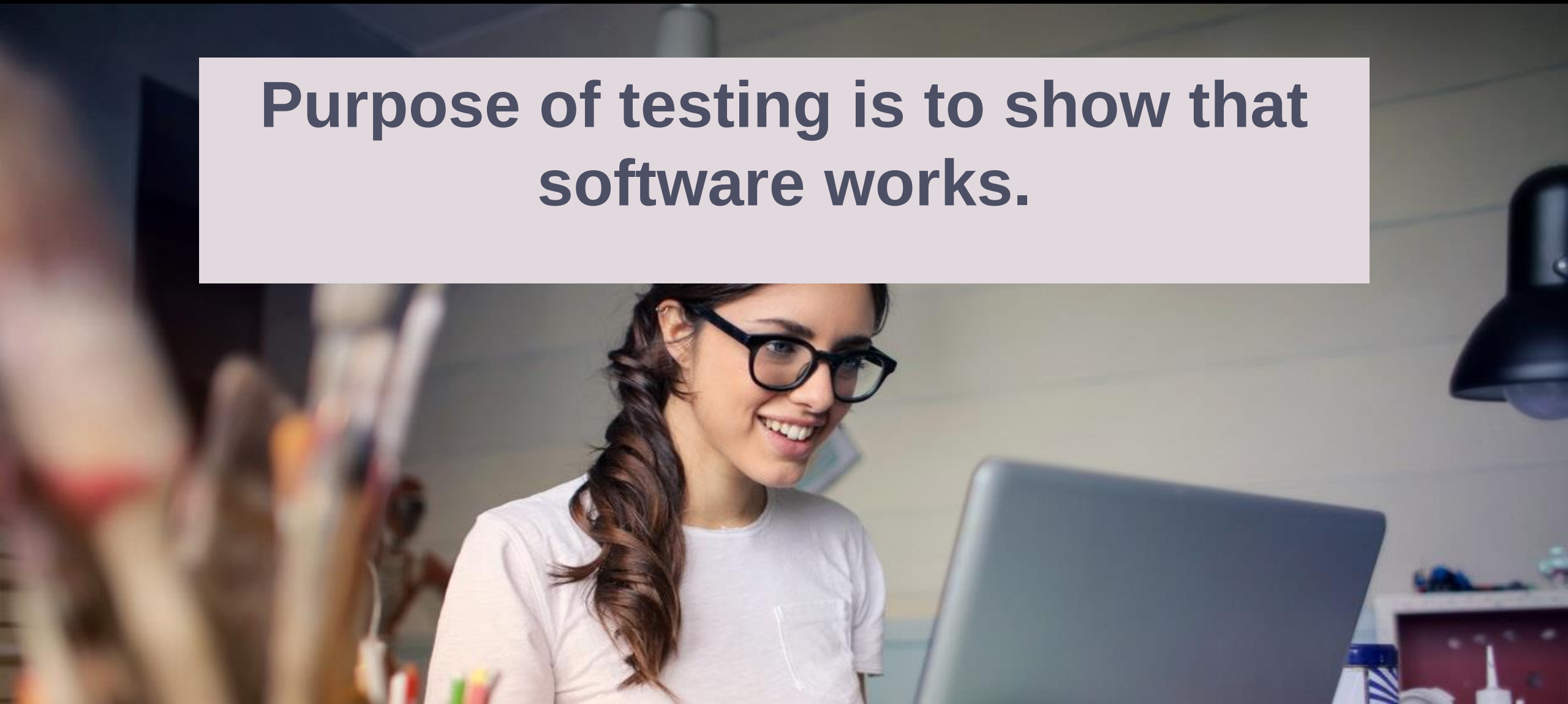
Beizer's levels of testing mentality

Different meanings of testing

Beizer's levels of testing mentality

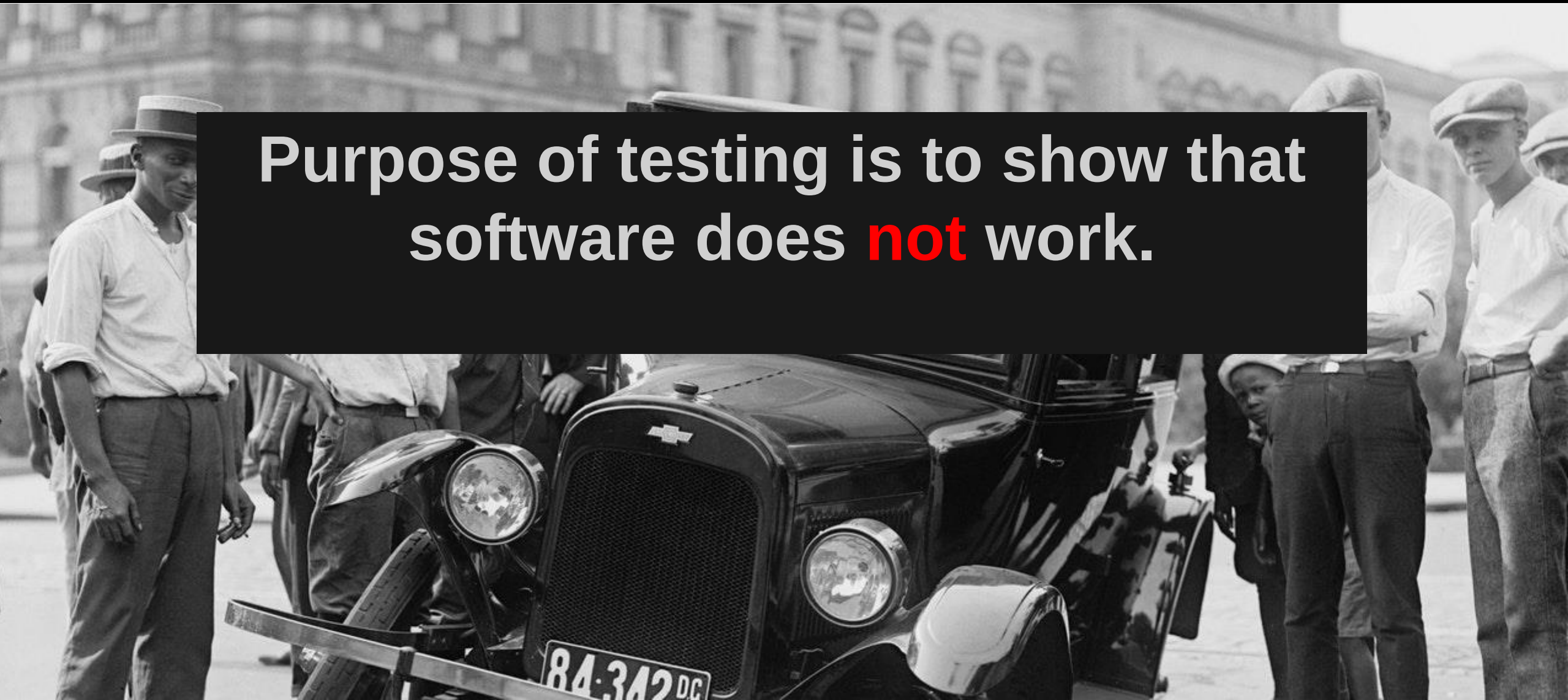


Beizer's levels of testing mentality

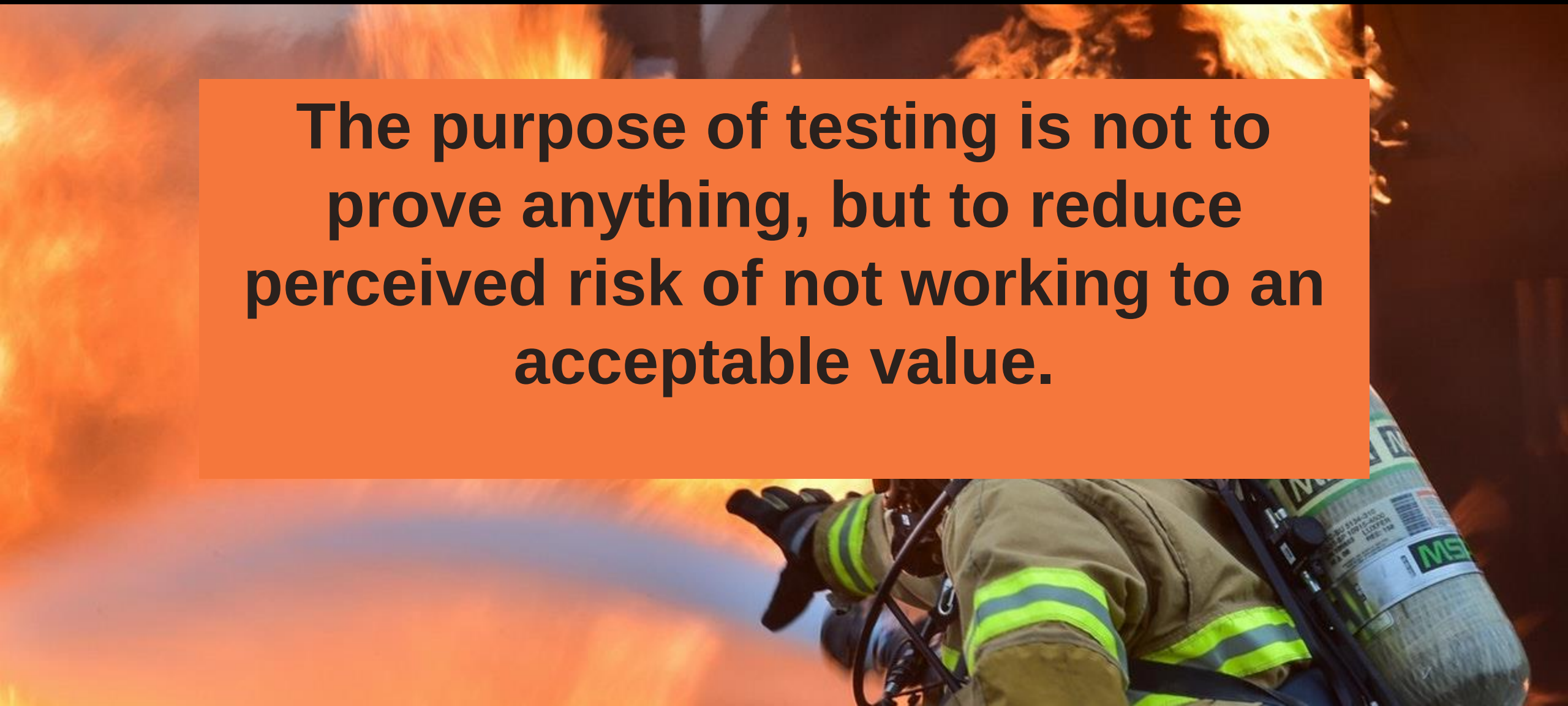


Purpose of testing is to show that software works.

Beizer's levels of testing mentality



Beizer's levels of testing mentality



The purpose of testing is not to prove anything, but to reduce perceived risk of not working to an acceptable value.

Beizer's levels of testing mentality

Testing is not an act. It is mental discipline that results in low-risk software without much effort.

Testing principles

7 principles of software testing

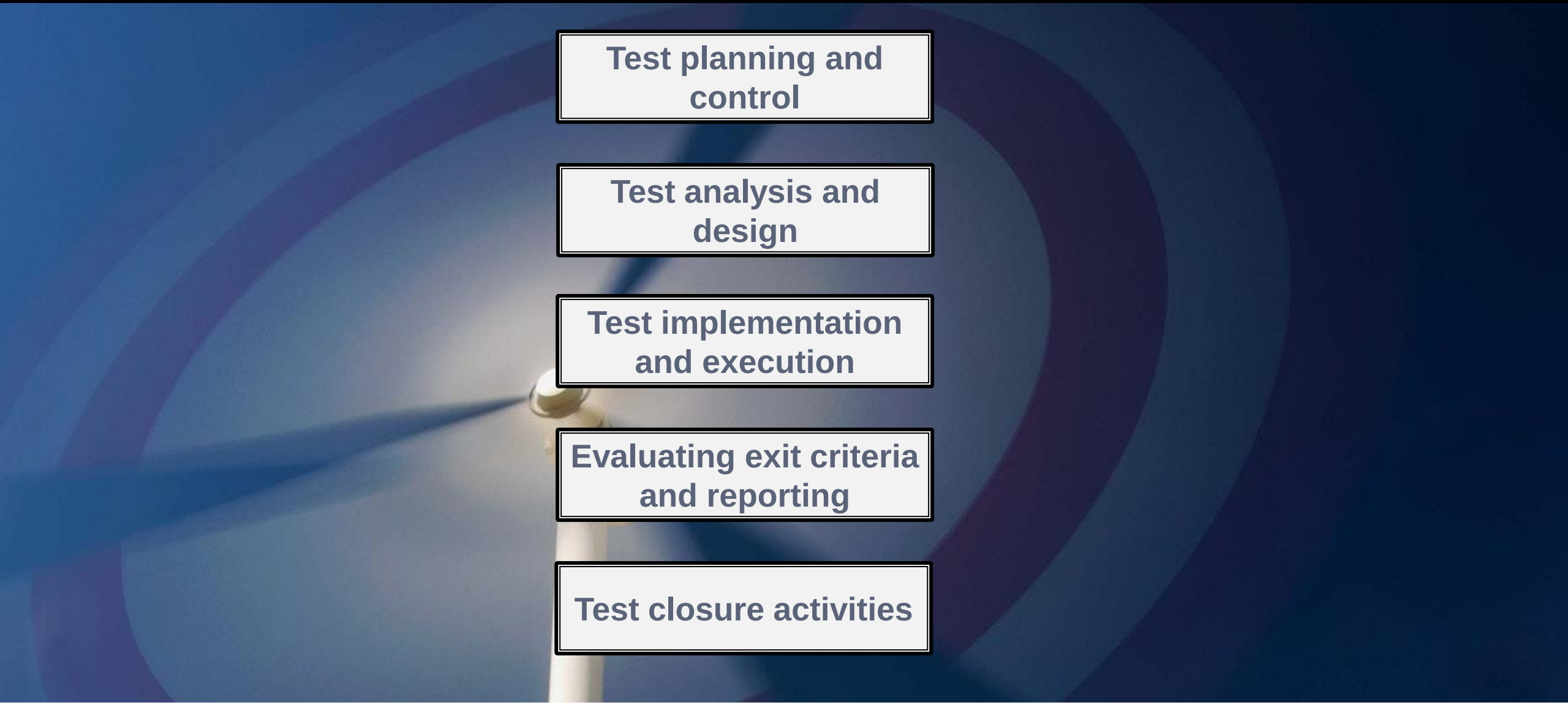
Software testing principles

- Exhaustive testing is impossible
- Testing shows the presence of bugs
- Early testing
- Defect clustering (80/20)
- The pesticide paradox
- Testing is context dependent
- Absence of errors fallacy

Software Testing Life Cycle

Phases in testing

Software Testing Life Cycle (STLC)



Software Testing Life Cycle (STLC)

Classic example

Weinberg-Myers triangle problem

Triangle problem

Consider the following software program. It reads three input data values. These values represent the three lengths of the sides of a triangle. The purpose of this program is to display a message which states whether the triangle is scalene (i.e., no two sides are equal), isosceles (two sides equal) or equilateral (all sides equal). As software goes, this is very low in complexity.

How do we test it?

Create 10 tests to test the program

Side 1	Side 2	Side 3	Expected Result

Example

Side 1	Side 2	Side 3	Expected Result
1	1	1	Equilateral
10.5	10.5	10.5	Equilateral
2	3	4	Scalene
4	2	2	Scalene
4	3	2	Scalene
10	10	20	Isosceles
20	10	10	Isosceles
-1	1	1	Error
1		1	Error
A	B	C	Error

Questions