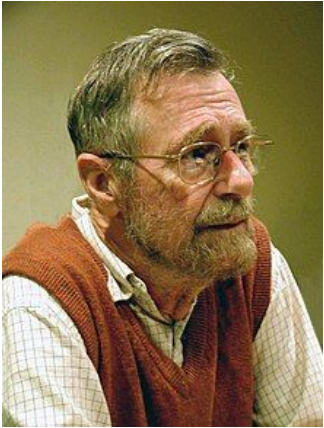# Software Testing

- Verify if a program produces an expected result when executed with some test cases

- Tests can be:
  - Manual
  - Automated

Software testing can reveal the presence of bugs, but not their absence.

Edsger W. Dijkstra

limitation

goal

Defects, Bugs, and Failures

- Example of defect or bug:

```
if (condition)
    area = pi * radius * radius * radius;
```

- The correct formula is "area = pi * radius * radius"

- When it is executed, it will cause a failure, meaning an incorrect result.

Verification vs Validation

- Verification: Are we building the product right?

  ○ According to the defined specification

- Validation: Are we building the right product?

  ○ The one that meets the customer needs

Testing & Agile Methods

- Tests are automated

- Written by the developer of the code under testing