

Overview

Paradigms tell what NOT to do

- Structured programming imposes discipline on **direct transfer of control**
 - Edsger Wybe Dijkstra, 1968
 - Using goto statements is harmful to program structure
- OO-programming imposes discipline on **indirect transfer**
 - Ole Johan Dahl and Kristen Nygaard, 1966
 - Local variables can be moved from stack to heap, existing after function return
 - Polymorphism eliminates the usage of function pointers
- Function programming imposes discipline on **assignment**
 - Alonzo Church, 1936, lamda-calculus
 - Immutability

Structured Programming

Lead to a proof of a-program-is-right

- Any program can be constructed from just 3 structures
 - Sequence, Selection and Iteration
- Functional decomposition
 - Decomposition of a program into a set of small **provable** functions recursively
 - Restrain or forbid 'goto' statement