

Overview

The way of programming

- Programs are simply data (i.e., binary)
- Paradigms are unrelated to any particular programming language
- Paradigms introduce constraints to remove capabilities from the programmer
- Three paradigms
 - Structured, Object-Oriented, and Functional
 - Function, Separation of components, and Data management

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