Fundamentals of functional programming

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Functional programming

- Functional programming is a programming paradigm.
- Alonzo Church introduced lambda calculus in 1932:

$$\lambda f.(\lambda x.f(xx))(\lambda .f(xx))$$

- Church–Turing thesis: lambda calculus *is* computation.

Imperative programming

- Functional contrasts with imperative programming.
- C, Java, JavaScript are largely imperative.
- Programs have **state**, modified by *statements*.
- Origins in the Turing machine, a conceptual model created by Alan Turing.