

Functional Programming with Python

INTRODUCING FUNCTIONAL PROGRAMMING



Gerald Britton

IT SOLUTIONS DESIGNER

@GeraldBritton www.linkedin.com/in/geraldbritton

Programming Paradigms



Imperative

- Machine code, Assembly language

Procedural

- Fortran, COBOL, Algol, Basic, C

Object Oriented

- Java, C++, C#, Smalltalk, Python

Declarative

- SQL, XML (HTML)

Logic

- Prolog, Planner

A Brief History of Functional Programming

1950s

McCarthy - Lisp

1960s

Iverson - APL

1970s

Backus' paper - FP

1970s

Milner - ML

1980s

Haskell

“Do it whenever it is convenient
and think hard about the decision
when it isn’t convenient”

John Carmack

Functional Programming Principles

First-class functions

Pure functions

Immutable variables and objects

Lazy evaluation

Recursion

Pattern matching

~~**Statements**~~

OOP included!

Tools You Will Need

Python language, either 2.x or 3.x

- <https://www.python.org/downloads/>

An integrated development environment

- IDLE (included in Python download)
- PyCharm
- Wing IDE
- PyDev for Eclipse
- Visual Studio
- Many others
- <https://wiki.python.org/moin/PythonEditors>

Visual Studio Code

- <https://code.visualstudio.com/Download>

Summary



Functional programming

History

Major concepts

Motivations

Many languages perform actions

FP is about computing results