Python Intermediate Programming

Unit 1: Introduction

WELCOME TO PYTHON INTERMEDIATE PROGRAMMING

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Overview of Python Course Series

LECTURE 1

Introduction to Programming

Course Series that Lead your Modern Programming World

- Python is a language that help students to learn key programming concepts in shortest time.
- Python is suitable for core computing and applications.
- Python support fast prototyping and fast visualization.



Python Course Series

A quick way to analogize these courses is:

- Python Programming Essentials: learning to drive;
- Python Object-Oriented Programming: road trips;
- Python Intermediate Programming: car mechanics.

Python Programming Essentials

This course introduces the basics of the Python programming language and how to develop programs in an Integrated Development Environment (Eclipse or IDLE) using Python.

- Unit 1: Sequential Programming
- Unit 2: Structured Programming
- Unit 3: Data Types and Class
- Unit 4: Basic Algorithms

Python 1

Learning Coding

- Data Types
  - Number
  - String
  - Tuple, List, Set, Dictionary
- Program Structures
  - Decisions
  - Loops
  - Functions
- Basic Object-Oriented Programming and Algorithms

Python Object-Oriented Programming

This course increases students' abilities to write more complicated programs; it focuses on students learning how to read, understand, and employ modules (and classes) from Python's library.

- Unit 1: Basic Object-Oriented Programming
- Unit 2: File I/O and Exception Handling
- Unit 3: Network Programming and Web API
- Unit 4: Graphics User Interface
- Unit 5: Basic Database Connection
- Unit 6: Web Site Development

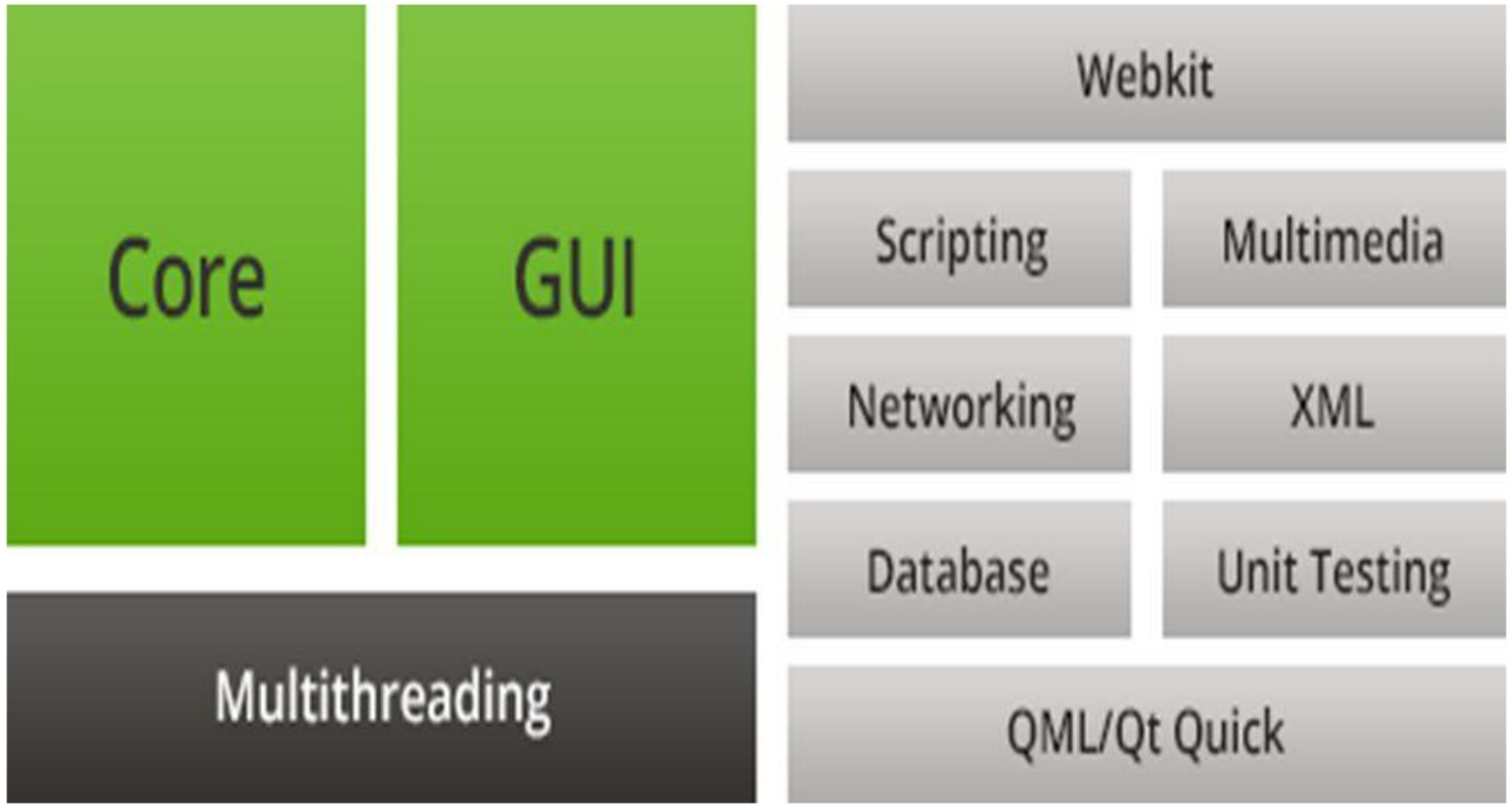
Python 2: Built-In Design Framework

From Coding to Programming

- Object-Oriented Programming
- File I/O and Exception
- Networking and Web Programming
- Graphics User Interface
- Database

We use the standard libraries with Python Package

Qt Modular Class Library



Python Intermediate Programming

This course examines Python more carefully, giving students a more unified look at the language and discussing some of its powerful features that make sophisticated programming easier. It also covers some programming-related Computer Science topics. (Leads to Algorithms, AI, Data Science, ML)

- Unit 1: Tokenization
- Unit 2: Python Algorithms
- Unit 3: Data Structures
- Unit 4: Algorithmic Study
- Unit 5: Software Development

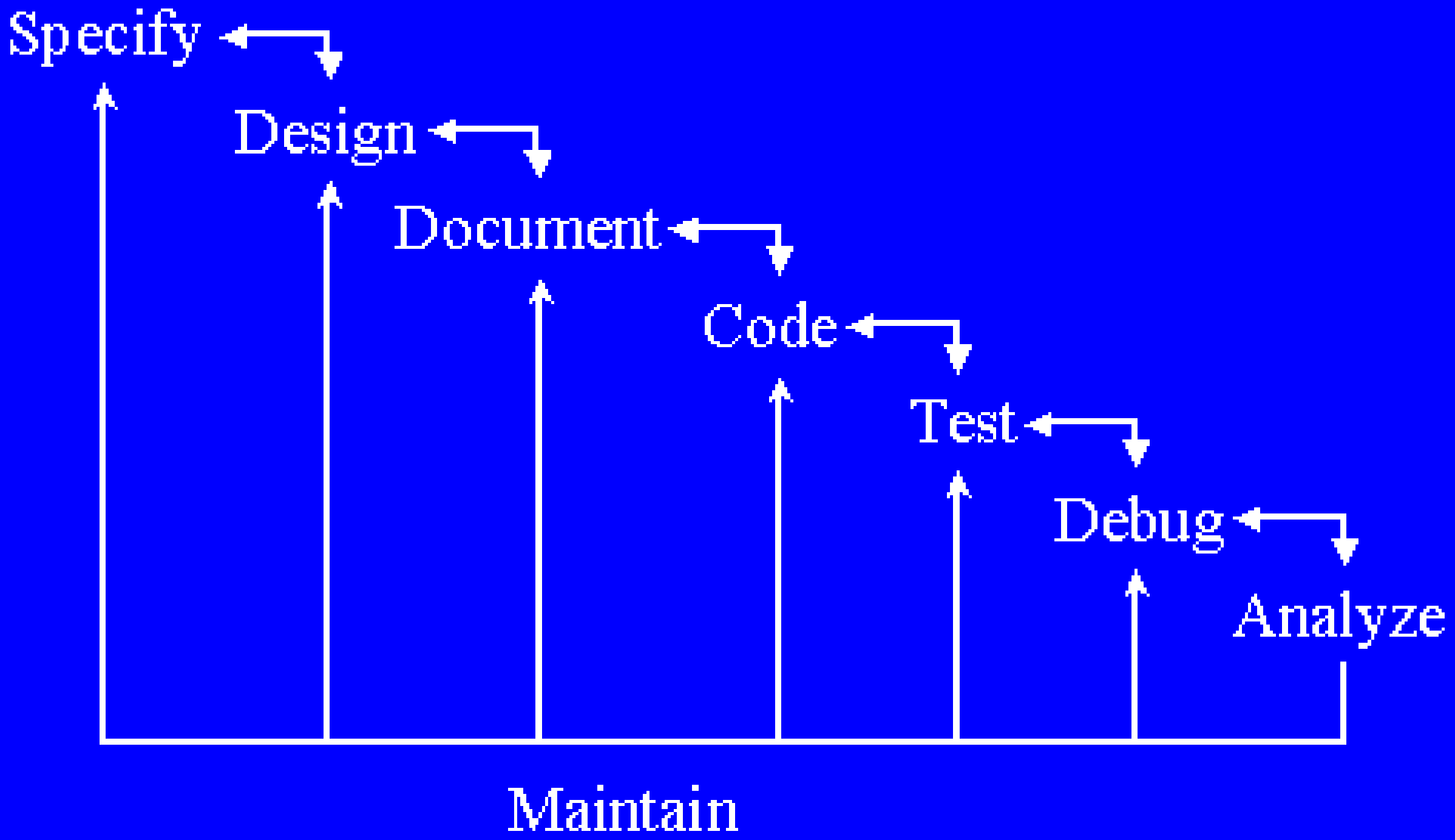
Python 3

From Programming to Computer Science

- Text Processing:
  - Tokenization,
  - EBNF (Syntax Analysis),
  - Regular Expression
- Programming Paradigm:
  - Object-Oriented Programming,
  - Functional Programming, (Lambdas, Decorators)
  - Generic Programming (Generators)

Python 3

- Data Structure and Algorithms
  - List, Tree, Graphs, Matrix
  - Complexity Analysis
- Tools
  - Unittest
  - Git
  - Profiling
  - Static typing


Specify
Design
Document
Code
Test
Debug
Analyze
Maintain