

Introduction to Python Programming Languages and Tools

Overview of Python

- **What is Python?**
 - High-level, general-purpose programming language.
 - Versatile across domains: from scripting and automation to complex applications like AI and web services.
- **Why Python ?**
 - Data analysis and manipulation
 - Machine learning and AI
 - Web development and APIs
 - LLM Integration
- **Key Features**
 - Extensive ecosystem of libraries and frameworks for rapid development.
 - Strong, active community providing resources, tutorials, and AI-assisted tools for learning and troubleshooting.

Tools and software Summary

	Purpose	Pick for this course	Installation
Python	Running Python Program	Python 3.x	www.python.org
Integrated Development Environment (IDE)	Efficient coding and development environment for software creation and management.	Visual Studio Code	https://code.visualstudio.com/
Code Generation AI	Help you write code	ChatGPT	Chatgpt.hkbu.edu.hk or poe.com

Python

- Execute python program
- Comes with standard library
 - Basic data type
 - Text processing
 - Read, write file
 - Math
 - Internet data handling

<https://docs.python.org/3/library/>

Visual Studio Code

- VS Code is a very popular IDE (integrated development environment) for programming
- IDE is a software application that provides comprehensive facilities to computer programmers for software development.
- Works well with AI Coding Tool
 - Cursor IDE built on top of VS Code
 - Claude Code Plugin is available to make Claude working within VS Code

Generative AI / LLM for coding

- ChatGPT, Claude are good for programming
- Still not strong enough to write flawless program. You have to verify it yourself.
- You can use the one provided by the University, poe.com or chat.openai.com, claude.ai or through AI Code Editor like Cursor
- Please note that ChatGPT and Claude do not provide services to China including Hong Kong.

Still need to learn programming in AI era?

Yes, Absolutely—for the Foreseeable Future

- AI Acts as a Powerful Assistant, Not a Replacement
- AI Lowers the Barrier for Beginners
- Empowers Experienced Professionals
- Core Skills Remain Crucial