

# 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
<b>Python</b>	Running Python Program	Python 3.x	<a href="http://www.python.org">www.python.org</a>
<b>Integrated Development Environment (IDE)</b>	Efficient coding and development environment for software creation and management.	Visual Studio Code	<a href="https://code.visualstudio.com/">https://code.visualstudio.com/</a>
Code Generation AI	Help you write code	ChatGPT	<a href="https://chatgpt.hkbu.edu.hk">Chatgpt.hkbu.edu.hk</a> or <a href="https://poe.com">poe.com</a>

# 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](https://poe.com) or [chat.openai.com](https://chat.openai.com), [claude.ai](https://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