

# Multithreading and Multiprocessing in Python

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# Introduction

# Thread & Process

# What?

## Process

- **Process** is a program in execution state

## Thread

- **Thread** is a lightweight process
- A **process** can have multiple **threads**

# Why

# CPU-bound and I/O-bound processes

- A program is **CPU bound** if it would go faster if the CPU were faster
- A program is **I/O bound** if it would go faster if the **I/O subsystem** (disk, networking) was faster

# Multithreading and Multiprocessing

# Multithreading



# Multiprocessing



GIL

# What?

# Why Python GIL?

# Pros and Cons