ECOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

LECTURE NOTES IN

Parallelism and Concurrency

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1 Week 1

1.1 Parallel programming VS concurrent programming

- Parallel programming : Uses parallel hardware to execute computation more quickly. Aims for efficiency by division into subproblems and optimal use of hardware.

- Concurrent program : may or may not execute multiple executions at the same time. Aims for modularity and maintainability. Main question is "When can execution start ?" and "When do exchanges occur ?".

1.2 Granularity

Parallelism can occur at multiple levels :

- Bit level