

# Multithreading

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# Outline

- ① Pipelining
- ② Pipelining in Computers
- ③ Hyperthreading
- ④ Conclusion

Multithreading

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Pipelining

Pipelining in  
Computers

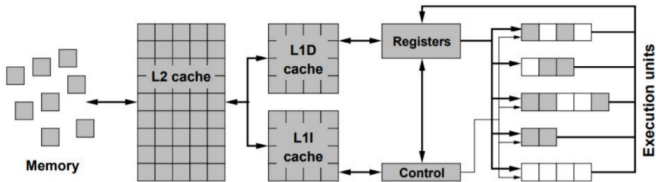
Hyperthreading

Conclusion

# Pipelining

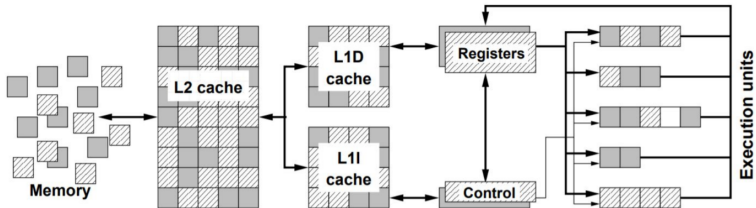


# Heavily Pipelined



Modern Processors

# Hyperthreading



Two way SMT

# History

- US patent for the technology behind hyper-threading was granted to Kenneth Okin at Sun Microsystems in November 1994
- Intel implemented hyper-threading on an x86 architecture processor in 2002 with the Foster MP-based Xeon.

# The End