Introduction to
High-Performance Computing
Exercise/2

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Agenda

- ✓ Exploit performance for matrix-matrix Multiplication
  - ■ Fortran/C
- ✓ Always check the results
- ✓ Extract some Performance figure (in MFLOPs)
  - ■ Change order of loops
  - ■ Change size
- ✓ Any available Compiler
- ✓ Medium optimization level (`-O2`)

Homework/1: Fill the table

✓ Unrolling external loop

#unrolling	Size	Fortran	C
2	512*512		
4	512*512		
2	4096*4096		
4	4096*4096		

✓ Compiler used:
✓ Compiler option used:
✓ HW used:

Homework/2: Fill the table

✓ Unrolling internal loop

#unrolling	Size	Fortran	C
2	512*512		
4	512*512		
2	4096*4096		
4	4096*4096		

✓ Compiler used:
✓ Compiler option used:
✓ HW used:

Homework/3: Fill the table

✓ Cache blocking: try a couple of blocking size…

#blocking	Size	Fortran	C
?	512*512		
?	512*512		
?	4096*4096		
?	4096*4096		

✓ Compiler used:
✓ Compiler option used:
✓ HW used:

Homework/4: Fill the table

✓ Put all together (blocking, unrolling,....)

#unrolling	#blocking	Size	Fortran	C
?	?	4096*4096		
?	?	8192*8192		

✓ Compiler used:
✓ Compiler option used:
✓ HW used: