An-Najah National University
Faculty Of Engineering
Computer Engineering Department

Computer Architecture 2

Assignment 2: SIMD Vectorization

Student:

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Registration number:

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- CPU: Intel(R) Core (TM) i7-8550U CPU @ 1.80GHz 4
- RAM: 8 GB
- Cache:

L1d cache: 128 KiB (4 instances)

L1i cache: 128 KiB (4 instances)

L2 cache: 1 MiB (4 instances)

L3 cache: 8 MiB (1 instance)

- Operating System: Ubuntu 20.04 (Native)
- Virtualization: Running within Docker

Vector-Vector Multiplication			
Input size	Scalar	Vector	Improvement (%)
128	0.000001	0.000001	1
256	0.000001	0.000001	1
512	0.000002	0.000001	2
Matrix-Vector Multiplication			
Input size	Scalar	Vector	Improvement (%)
128	0.000043	0.000022	1.9545454
256	0.000168	0.000087	1.93
512	0.000747	0.000347	2.1527377
Matrix-Matrix Multiplication			
Input size	Scalar	Vector	Improvement (%)
128	0.006607	0.003033	2.17837125
256	0.071856	0.027092	2.65229588
512	0.600651	0.244407	2.45758509
Improvement (%) = Scalar/Vector			
When compiling use: gcc -O0			