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CSCI 424
Homework 5 Report
April 21, 2022

Cache_424_w.py output:

```
Noams-Macbook-Air:hw5 noam$ python3 sim_424.py first.trace 16 1 4
first.trace
Processing your program trace, progress so far = 0 %
set and tag of 0x0 is 0 0
address 0x0 CACHE MISS. Loading from memory.
set and tag of 0x4 is 1 0
address 0x4 CACHE MISS. Loading from memory.
set and tag of 0x8 is 2 0
address 0x8 CACHE MISS. Loading from memory.
set and tag of 0xc is 3 0
address 0xc CACHE MISS. Loading from memory.
set and tag of 0x10 is 0 1
address 0x10 CACHE MISS. Loading from memory.
set and tag of 0xc is 3 0
address 0xc CACHE HIT. Good Job.
set and tag of 0x10 is 0 1
address 0x10 CACHE HIT. Good Job.
set and tag of 0x3c is 3 3
address 0x3c CACHE MISS. Loading from memory.
total cache misses 6
miss_rate 0.75
hit_rate 0.25
Finished processing your program trace, progress = 100.0 %

Noams-Macbook-Air:hw5 noam$ python3 sim_424.py first.trace 16 1 8
first.trace
Processing your program trace, progress so far = 0 %
set and tag of 0x0 is 0 0
address 0x0 CACHE MISS. Loading from memory.
set and tag of 0x4 is 0 0
address 0x4 CACHE HIT. Good Job.
set and tag of 0x8 is 1 0
address 0x8 CACHE MISS. Loading from memory.
set and tag of 0xc is 1 0
address 0xc CACHE HIT. Good Job.
set and tag of 0x10 is 0 1
address 0x10 CACHE MISS. Loading from memory.
```

```
set and tag of 0xc is 1 0
address 0xc CACHE HIT. Good Job.
set and tag of 0x10 is 0 1
address 0x10 CACHE HIT. Good Job.
set and tag of 0x3c is 1 3
address 0x3c CACHE MISS. Loading from memory.
total cache misses 4
miss_rate 0.5
hit_rate 0.5
Finished processing your program trace, progress = 100.0 %
```

```
Noams-Macbook-Air:hw5 noam$ python3 sim_424.py pingpong.trace 16 1 4
pingpong.trace
```

```
Processing your program trace, progress so far = 0 %
set and tag of 0x0 is 0 0
address 0x0 CACHE MISS. Loading from memory.
set and tag of 0x10 is 0 1
address 0x10 CACHE MISS. Loading from memory.
set and tag of 0x0 is 0 0
address 0x0 CACHE MISS. Loading from memory.
set and tag of 0x10 is 0 1
address 0x10 CACHE MISS. Loading from memory.
set and tag of 0x0 is 0 0
address 0x0 CACHE MISS. Loading from memory.
set and tag of 0x10 is 0 1
address 0x10 CACHE MISS. Loading from memory.
set and tag of 0x0 is 0 0
address 0x0 CACHE MISS. Loading from memory.
set and tag of 0x10 is 0 1
address 0x10 CACHE MISS. Loading from memory.
total cache misses 8
miss_rate 1.0
hit_rate 0.0
Finished processing your program trace, progress = 100.0 %
```

```
Noams-Macbook-Air:hw5 noam$ python3 sim_424.py pingpong.trace 16 2 4
pingpong.trace
```

```
Processing your program trace, progress so far = 0 %
set and tag of 0x0 is 0 0
address 0x0 CACHE MISS. Loading from memory.
set and tag of 0x10 is 0 2
address 0x10 CACHE MISS. Loading from memory.
set and tag of 0x0 is 0 0
```

```
address 0x0 CACHE HIT. Good Job.  
set and tag of 0x10 is 0 2  
address 0x10 CACHE HIT. Good Job.  
set and tag of 0x0 is 0 0  
address 0x0 CACHE HIT. Good Job.  
set and tag of 0x10 is 0 2  
address 0x10 CACHE HIT. Good Job.  
set and tag of 0x0 is 0 0  
address 0x0 CACHE HIT. Good Job.  
set and tag of 0x10 is 0 2  
address 0x10 CACHE HIT. Good Job.  
total cache misses 2  
miss_rate 0.25  
hit_rate 0.75  
Finished processing your program trace, progress = 100.0 %
```

```
Noams-Macbook-Air:hw5 noam$ python3 sim_424.py test_q.trace 64 2 4  
test_q.trace
```

```
Processing your program trace, progress so far = 0 %  
set and tag of 0x0 is 0 0  
address 0x0 CACHE MISS. Loading from memory.  
set and tag of 0x4 is 1 0  
address 0x4 CACHE MISS. Loading from memory.  
set and tag of 0x24 is 1 1  
address 0x24 CACHE MISS. Loading from memory.  
set and tag of 0x10 is 4 0  
address 0x10 CACHE MISS. Loading from memory.  
set and tag of 0x4 is 1 0  
address 0x4 CACHE HIT. Good Job.  
set and tag of 0x44 is 1 2  
address 0x44 CACHE MISS. Loading from memory.  
set and tag of 0x24 is 1 1  
address 0x24 CACHE MISS. Loading from memory.  
set and tag of 0x1c is 7 0  
address 0x1c CACHE MISS. Loading from memory.  
set and tag of 0x0 is 0 0  
address 0x0 CACHE HIT. Good Job.  
set and tag of 0x24 is 1 1  
address 0x24 CACHE HIT. Good Job.  
set and tag of 0x30 is 4 1  
address 0x30 CACHE MISS. Loading from memory.  
set and tag of 0x10 is 4 0  
address 0x10 CACHE HIT. Good Job.
```

```
total cache misses 8
miss_rate 0.6666666666666666
hit_rate 0.3333333333333333
Finished processing your program trace, progress = 100.0 %
```

```
Noams-Macbook-Air:hw5 noam$ python3 sim_424.py hw5.trace 64 2 8
hw5.trace
```

```
Processing your program trace, progress so far = 0 %
```

```
set and tag of 0x4 is 0 0
address 0x4 CACHE MISS. Loading from memory.
set and tag of 0x48 is 1 2
address 0x48 CACHE MISS. Loading from memory.
set and tag of 0x8 is 1 0
address 0x8 CACHE MISS. Loading from memory.
set and tag of 0xc is 1 0
address 0xc CACHE HIT. Good Job.
set and tag of 0x10 is 2 0
address 0x10 CACHE MISS. Loading from memory.
set and tag of 0x50 is 2 2
address 0x50 CACHE MISS. Loading from memory.
set and tag of 0x14 is 2 0
address 0x14 CACHE HIT. Good Job.
set and tag of 0x54 is 2 2
address 0x54 CACHE HIT. Good Job.
set and tag of 0x84 is 0 4
address 0x84 CACHE MISS. Loading from memory.
set and tag of 0x88 is 1 4
address 0x88 CACHE MISS. Loading from memory.
set and tag of 0x4 is 0 0
address 0x4 CACHE HIT. Good Job.
set and tag of 0x10 is 2 0
address 0x10 CACHE HIT. Good Job.
```

```
total cache misses 7
miss_rate 0.5833333333333334
hit_rate 0.4166666666666666
Finished processing your program trace, progress = 100.0 %
```

```
Noams-Macbook-Air:hw5 noam$ python3 sim_424.py hw4_a.trace 64 1 4
hw4_a.trace
```

```
Processing your program trace, progress so far = 0 %
```

```
set and tag of 0x0 is 0 0
address 0x0 CACHE MISS. Loading from memory.
set and tag of 0x4 is 1 0
```

address 0x4 CACHE MISS. Loading from memory.
set and tag of 0x8 is 2 0
address 0x8 CACHE MISS. Loading from memory.
set and tag of 0xc is 3 0
address 0xc CACHE MISS. Loading from memory.
set and tag of 0x10 is 4 0
address 0x10 CACHE MISS. Loading from memory.
set and tag of 0x14 is 5 0
address 0x14 CACHE MISS. Loading from memory.
set and tag of 0x18 is 6 0
address 0x18 CACHE MISS. Loading from memory.
set and tag of 0x1c is 7 0
address 0x1c CACHE MISS. Loading from memory.
set and tag of 0x20 is 8 0
address 0x20 CACHE MISS. Loading from memory.
set and tag of 0x24 is 9 0
address 0x24 CACHE MISS. Loading from memory.
set and tag of 0x28 is 10 0
address 0x28 CACHE MISS. Loading from memory.
set and tag of 0x2c is 11 0
address 0x2c CACHE MISS. Loading from memory.
set and tag of 0x30 is 12 0
address 0x30 CACHE MISS. Loading from memory.
set and tag of 0x34 is 13 0
address 0x34 CACHE MISS. Loading from memory.
set and tag of 0x38 is 14 0
address 0x38 CACHE MISS. Loading from memory.
set and tag of 0x3c is 15 0
address 0x3c CACHE MISS. Loading from memory.
set and tag of 0x4 is 1 0
address 0x4 CACHE HIT. Good Job.
set and tag of 0x48 is 2 1
address 0x48 CACHE MISS. Loading from memory.
set and tag of 0x8 is 2 0
address 0x8 CACHE MISS. Loading from memory.
set and tag of 0xc is 3 0
address 0xc CACHE HIT. Good Job.
set and tag of 0x10 is 4 0
address 0x10 CACHE HIT. Good Job.
set and tag of 0x50 is 4 1
address 0x50 CACHE MISS. Loading from memory.
set and tag of 0x14 is 5 0
address 0x14 CACHE HIT. Good Job.

```
set and tag of 0x54 is 5 1
address 0x54 CACHE MISS. Loading from memory.
set and tag of 0x84 is 1 2
address 0x84 CACHE MISS. Loading from memory.
set and tag of 0x88 is 2 2
address 0x88 CACHE MISS. Loading from memory.
set and tag of 0x4 is 1 0
address 0x4 CACHE MISS. Loading from memory.
set and tag of 0x10 is 4 0
address 0x10 CACHE MISS. Loading from memory.
total cache misses 24
miss_rate 0.8571428571428571
hit_rate 0.1428571428571429
Finished processing your program trace, progress = 100.0 %
```

```
Noams-Macbook-Air:hw5 noam$ python3 sim_424.py hw4_b.trace 64 1 8
hw4_b.trace
```

```
Processing your program trace, progress so far = 0 %
```

```
set and tag of 0x4 is 0 0
address 0x4 CACHE MISS. Loading from memory.
set and tag of 0x48 is 1 1
address 0x48 CACHE MISS. Loading from memory.
set and tag of 0x8 is 1 0
address 0x8 CACHE MISS. Loading from memory.
set and tag of 0xc is 1 0
address 0xc CACHE HIT. Good Job.
set and tag of 0x10 is 2 0
address 0x10 CACHE MISS. Loading from memory.
set and tag of 0x50 is 2 1
address 0x50 CACHE MISS. Loading from memory.
set and tag of 0x14 is 2 0
address 0x14 CACHE MISS. Loading from memory.
set and tag of 0x54 is 2 1
address 0x54 CACHE MISS. Loading from memory.
set and tag of 0x84 is 0 2
address 0x84 CACHE MISS. Loading from memory.
set and tag of 0x88 is 1 2
address 0x88 CACHE MISS. Loading from memory.
set and tag of 0x4 is 0 0
address 0x4 CACHE MISS. Loading from memory.
set and tag of 0x10 is 2 0
address 0x10 CACHE MISS. Loading from memory.
total cache misses 11
```

miss_rate 0.9166666666666666

hit_rate 0.08333333333333337

Finished processing your program trace, progress = 100.0 %