



# University of Asia Pacific

Department of Computer Science and Engineering

## Assignment 1

**Course Code** : CSE-317

**Course Title** : Computer Architecture

### Submitted By:

**Name:** Sumaiya fatema

**ID:** 20101091

**Section:** B

**Department:** CSE

### Submitted To:

Shammi Akhtar

Assistant Professor

Department of CSE, UAP

20101091

Sumalya Paterno

Gewinn : 0,8, 0,6, 8, 25, 13, 9, 8, 0

1. Direct mapped: A direct mapped cache with 16-blocks can only hold one block per set.

[illegible]

2way set associative?  $\text{Set} = \frac{16}{2} = 8$ , Now mod block address by 8.

Block address	Cache Set
0	$(0 \bmod 8) = 0$
8	$(8 \bmod 8) = 0$
6	$(6 \bmod 8) = 6$
25	$(25 \bmod 8) = 1$
13	$(13 \bmod 8) = 5$
9	$(9 \bmod 8) = 1$

Memory Address	Hit/Miss	Set 0 0 1	Set 1 2 3	Set 2 4 5	Set 3 6 7	Set 4 8 9	Set 5 10 11	Set 6 12 13	Set 7 14 15	Set 8
0	Miss	M[0]								
8	Miss	M[0] M[8]								
0	Hit	M[0] M[8]								
6	Miss									
8	Hit	M[0] M[8]								
25	Miss		M[25]							
13	Miss									
9	Miss		M[25] M[9]							
8	Hit	M[0] M[8]								
0	Hit	M[0] M[8]								



4 way set associative: Set =  $\frac{16}{4} = 4$ , New mod block address by 4

Block address	cache set
0	$(0 \bmod 4) = 0$
8	$(8 \bmod 4) = 0$
6	$(6 \bmod 4) = 2$
25	$(25 \bmod 4) = 1$
13	$(13 \bmod 4) = 1$
9	$(9 \bmod 4) = 1$

Memory address	Hit/Miss	Set 0	Set 1	Set 2	Set 3
		0 1 2 3	4 5 6 7	8 9 10 11	12 13 14 15
0	Miss	M[0]			
8	Miss	M[0] M[8]			
0	Hit	M[0] M[8]			
6	Miss			M[6]	
8	Hit	M[0] M[8]			
25	Miss		M[25]		
13	Miss		M[25] M[13]		
9	Miss		M[25] M[13] M[9]		
8	Hit	M[0] M[8]			
0	Hit	M[0] M[8]			

20101091  
Somaia Fatema

8-way set associative:  $\text{Set} = \frac{16}{8} = 2$ , we mod block addresses by 2

Block address	Cache set
0	$(0 \bmod 2) = 0$
8	$(8 \bmod 2) = 0$
6	$(6 \bmod 2) = 0$
25	$(25 \bmod 2) = 1$
13	$(13 \bmod 2) = 1$
9	$(9 \bmod 2) = 1$

Memory address	Hit / Miss	Set 0								Set 1							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	Miss	M[0]															
8	Miss	M[0] M[8]															
6	Hit	M[0] M[6]															
6	Miss	M[0] M[6] M[6]															
8	Hit	M[8]															
25	Miss									M[25]							
13	Miss									M[25] M[13]							
9	Miss									M[25] M[13] M[9]							
8	Hit	M[8]															
0	Hit	M[0]															





2010-1091

Sumalya or Rastema

Fully associative:

[illegible]