

# Current State of Memory System

TLB:

Set	Tag	PPN	V	Tag	PPN	V	Tag	PPN	V	Tag	PPN	V
0	03	-	0	09	0D	1	00	-	0	07	02	1
1	03	2D	1	02	-	0	04	-	0	0A	-	0
2	02	-	0	08	-	0	06	-	0	03	-	0
3	07	-	0	03	0D	1	0A	34	1	02	-	0

Page table (partial):

VPN	PPN	V	VPN	PPN	V
0	28	1	8	13	1
1	-	0	9	17	1
2	33	1	A	09	1
3	02	1	B	-	0
4	-	0	C	-	0
5	16	1	D	2D	1
6	-	0	E	-	0
7	-	0	F	0D	1

Cache:

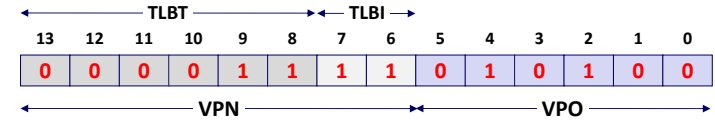
Index	Tag	V	B0	B1	B2	B3	Index	Tag	V	B0	B1	B2	B3
0	19	1	99	11	23	11	8	24	1	3A	00	51	89
1	15	0	-	-	-	-	9	2D	0	-	-	-	-
2	1B	1	00	02	04	08	A	2D	1	93	15	DA	3B
3	36	0	-	-	-	-	B	0B	0	-	-	-	-
4	32	1	43	6D	8F	09	C	12	0	-	-	-	-
5	0D	1	36	72	F0	1D	D	16	1	04	96	34	15
6	31	0	-	-	-	-	E	13	1	83	77	1B	D3
7	16	1	11	C2	DF	03	F	14	0	-	-	-	-

# Polling Question [VM III]

## Memory Request Example #1

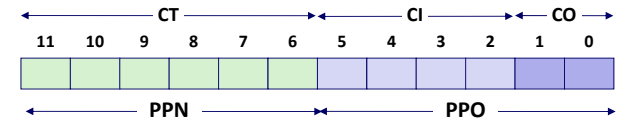
**Note:** It is just coincidence that the PPN is the same width as the cache Tag

❖ Virtual Address: 0x03D4



VPN \_\_\_\_\_ TLBT \_\_\_\_\_ TLBI \_\_\_\_\_ TLB Hit? \_\_\_\_\_ Page Fault? \_\_\_\_\_ PPN \_\_\_\_\_

❖ Physical Address:



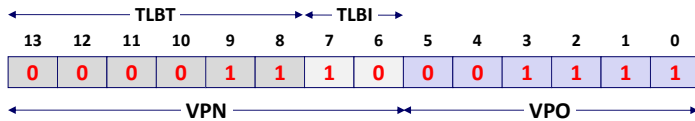
CT \_\_\_\_\_ CI \_\_\_\_\_ CO \_\_\_\_\_ Cache Hit? \_\_\_\_\_ Data (byte) \_\_\_\_\_

Give your answer for Data(byte) at: <http://pollev.com/rea>

# Memory Request Example #2

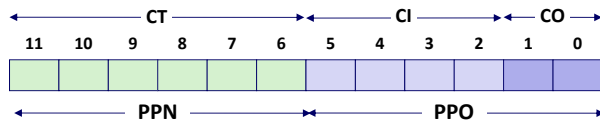
**Note:** It is just coincidence that the PPN is the same width as the cache Tag

❖ Virtual Address: 0x038F



VPN \_\_\_\_\_ TLBT \_\_\_\_\_ TLBI \_\_\_\_\_ TLB Hit? \_\_\_\_\_ Page Fault? \_\_\_\_\_ PPN \_\_\_\_\_

❖ Physical Address:

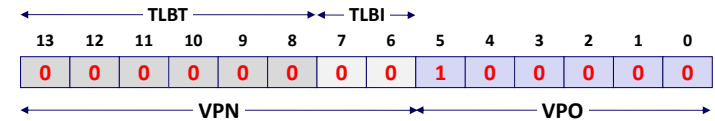


CT \_\_\_\_\_ CI \_\_\_\_\_ CO \_\_\_\_\_ Cache Hit? \_\_\_\_\_ Data (byte) \_\_\_\_\_

# Memory Request Example #3

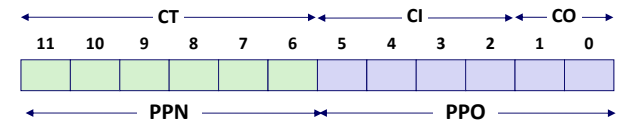
**Note:** It is just coincidence that the PPN is the same width as the cache Tag

❖ Virtual Address: 0x0020



VPN \_\_\_\_\_ TLBT \_\_\_\_\_ TLBI \_\_\_\_\_ TLB Hit? \_\_\_\_\_ Page Fault? \_\_\_\_\_ PPN \_\_\_\_\_

❖ Physical Address:



CT \_\_\_\_\_ CI \_\_\_\_\_ CO \_\_\_\_\_ Cache Hit? \_\_\_\_\_ Data (byte) \_\_\_\_\_