

Lab Tasks

Session 1

- Consider the following subdivision of 20 bit Virtual Address into 3 Segments as follows

2-bits	8-bits	10-bits
--------	--------	---------

- What is the Page Size in the above setting ?
- If each page table entry takes 4 bytes, how much minimum memory is required by the program ?

Convert Following VA to PA assuming a 2 Level page table (1bit-3bit-12bit) with each page of 4kB.

- 0xE21C
- 0x3A9D
- 0xA9D9
- 0x7001
- 0xACA1

Level 1 Page Table	
0	0xA925F233
1	0x6B73A49F

A @ 0xA925F233	
Page	Frame
0	9
1	1
2	3
3	5
4	-1
5	4
6	2
7	15

B @ 0x6B73A49F	
Page	Frame
8	-1
9	0
10	10
11	13
12	-1
13	-1
14	14
15	8

Frame -1 indicates "Disk"

Session 2

- Consider the following subdivision of 32 bit Virtual Address into 4 Segments as follows

6-bits	8-bits	10-bits	8-bits
--------	--------	---------	--------

- What is the Page Size in the above setting ?
- If each page table entry takes 4 bytes, how much minimum memory is required by the program ?

Convert Following VA to PA assuming a 2 Level page table (1bit-3bit-12bit) with each page of 4kB.

- 0xF74C
- 0x8B9D
- 0x19B9
- 0x190F
- 0x5CB1

Level 1 Page Table	
0	0xA925F233
1	0x6B73A49F

A @ 0xA925F233	
Page	Frame
0	9
1	1
2	3
3	5
4	-1
5	4
6	2
7	15

B @ 0x6B73A49F	
Page	Frame
8	-1
9	0
10	10
11	13
12	-1
13	-1
14	14
15	8

Frame -1 indicates "Disk"

Session 3

- Consider the following subdivision of 16 bit Virtual Address into 3 Segments as follows

2-bits	10-bits	4-bits
--------	---------	--------

- What is the Page Size in the above setting ?
- If each page table entry takes 4 bytes, how much minimum memory is required by the program ?

Convert Following VA to PA assuming a 2 Level page table (1bit-3bit-12bit) with each page of 4kB.

- 0xB61C
- 0x849D
- 0x5AD9
- 0xB901
- 0x3BA1

Level 1 Page Table	
0	0xA925F233
1	0x6B73A49F

A @ 0xA925F233	
Page	Frame
0	9
1	1
2	3
3	5
4	-1
5	4
6	2
7	15

B @ 0x6B73A49F	
Page	Frame
8	-1
9	0
10	10
11	13
12	-1
13	-1
14	14
15	8

Frame -1 indicates "Disk"

Session 4

- Consider the following subdivision of 32 bit Virtual Address into 4 Segments as follows

8-bits	8-bits	10-bits	6-bits
--------	--------	---------	--------

- What is the Page Size in the above setting ?
- If each page table entry takes 4 bytes, how much minimum memory is required by the program ?

Convert Following VA to PA assuming a 2 Level page table (1bit-3bit-12bit) with each page of 4kB.

- 0xF12C
- 0x49BD
- 0xB1F9
- 0x4D19
- 0xBCA1

Level 1 Page Table	
0	0xA925F233
1	0x6B73A49F

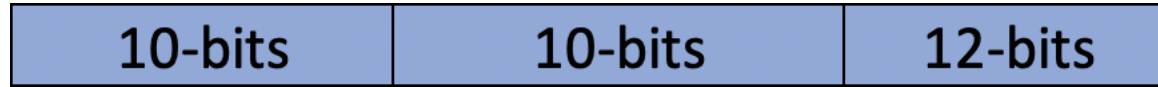
A @ 0xA925F233	
Page	Frame
0	9
1	1
2	3
3	5
4	-1
5	4
6	2
7	15

B @ 0x6B73A49F	
Page	Frame
8	-1
9	0
10	10
11	13
12	-1
13	-1
14	14
15	8

Frame -1 indicates "Disk"

Session 5

- Consider the following subdivision of 32 bit Virtual Address into 2 Segments as follows



- What is the Page Size in the above setting ?
- If each page table entry takes 4 bytes, how much minimum memory is required by the program ?

Convert Following VA to PA assuming a 2 Level page table (1bit-3bit-12bit) with each page of 4kB.

- 0xF21C
- 0xBA9D
- 0x19D9
- 0x5001
- 0xDCA1

Level 1 Page Table	
0	0xA925F233
1	0x6B73A49F

A @ 0xA925F233	
Page	Frame
0	9
1	1
2	3
3	5
4	-1
5	4
6	2
7	15

B @ 0x6B73A49F	
Page	Frame
8	-1
9	0
10	10
11	13
12	-1
13	-1
14	14
15	8

Frame -1 indicates "Disk"

Session 6

- Consider the following subdivision of 16 bit Virtual Address into 2 Segments as follows



- How many pages are in Virtual Address Space.
- If each page table entry takes 4 bytes, how much minimum memory is required by the program ?

**Convert Following VA to PA assuming a
2 Level page table (1bit-3bit-12bit)
with each page of 4kB.**

- 0xA21C
- 0x4A9D
- 0xB9D9
- 0x3001
- 0x7CA1

Level 1 Page Table	
0	0xA925F233
1	0x6B73A49F

A @ 0xA925F233	
Page	Frame
0	9
1	1
2	3
3	5
4	-1
5	4
6	2
7	15

B @ 0x6B73A49F	
Page	Frame
8	-1
9	0
10	10
11	13
12	-1
13	-1
14	14
15	8