Full Name: _____

AID: _____

CS 351 Final Exam Worksheet

WP1 (/12) :	
WP2 (/10) :	
WP3 (/6) :	
WP4 (/6) :	
TOTAL (/34) :	

WP1.

(a)

A	0	1
0		
1		

B	0	1
0		
1		

(b)

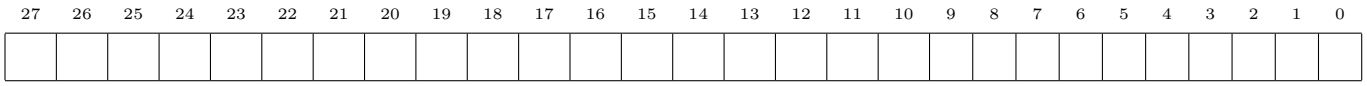
A	0	1	2
0			
1			
2			

B	0	1	2
0			
1			
2			

WP2 (a).

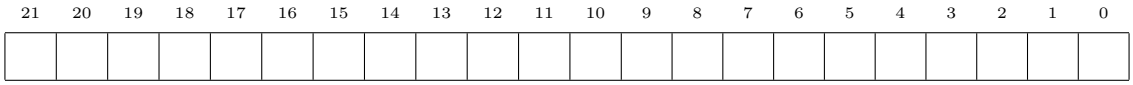
Virtual address fields:

VPO : The virtual page offset
VPN : The virtual page number
TLBI : The TLB index
TLBT : The TLB tag



Physical address fields:

PPO : The physical page offset
PPN : The physical page number
CO : The cache block offset
CI : The cache set index
CT : The cache tag



WP2 (b).

Request: **0x9D0649E**

A. Virtual address (binary)

B. Address translation

Parameter	Value
VPN	0x
TLB Index	0x
TLB Tag	0x
TLB Hit? (Y/N)	
Page Fault? (Y/N)	
PPN	0x

C. Physical address (binary)

D. Physical memory reference

Parameter	Value
Cache offset	0x
Cache Index	0x
Cache Tag	0x
Cache Hit? (Y/N)	
Cache Byte returned	0x

WP2 (c).

Request: **0x0018152**

A. Virtual address (binary)

B. Address translation

Parameter	Value
VPN	0x
TLB Index	0x
TLB Tag	0x
TLB Hit? (Y/N)	
Page Fault? (Y/N)	
PPN	0x

C. Physical address (binary)

D. Physical memory reference

Parameter	Value
Cache offset	0x
Cache Index	0x
Cache Tag	0x
Cache Hit? (Y/N)	
Cache Byte returned	0x

WP3.

Start state:

Addr.	Data
0x80005068	0x00000020
0x...5064	—
0x...5060	—
0x...505c	—
0x...5058	—
0x...5054	—
0x...5050	—
0x...504c	0x00000020
0x...5048	0x00000015
0x...5044	—
0x...5040	—
0x...503c	—
0x...5038	0x00000015
0x...5034	0x00000028
0x...5030	—
0x...502c	—
0x...5028	—
0x...5024	—
0x...5020	—
0x...501c	—
0x...5018	—
0x...5014	—
0x...5010	0x00000028
0x...500c	0x00000011
0x...5008	—
0x...5004	—
0x80005000	0x00000011

After `malloc(25)`:

Addr.	Data
0x80005068	
0x...5064	
0x...5060	
0x...505c	
0x...5058	
0x...5054	
0x...5050	
0x...504c	
0x...5048	
0x...5044	
0x...5040	
0x...503c	
0x...5038	
0x...5034	
0x...5030	
0x...502c	
0x...5028	
0x...5024	
0x...5020	
0x...501c	
0x...5018	
0x...5014	
0x...5010	
0x...500c	
0x...5008	
0x...5004	
0x80005000	

After `free(0x8000503C)`:

Addr.	Data
0x80005068	
0x...5064	
0x...5060	
0x...505c	
0x...5058	
0x...5054	
0x...5050	
0x...504c	
0x...5048	
0x...5044	
0x...5040	
0x...503c	
0x...5038	
0x...5034	
0x...5030	
0x...502c	
0x...5028	
0x...5024	
0x...5020	
0x...501c	
0x...5018	
0x...5014	
0x...5010	
0x...500c	
0x...5008	
0x...5004	
0x80005000	

After `realloc(0x80005004, 10)`:

Addr.	Data
0x80005068	
0x...5064	
0x...5060	
0x...505c	
0x...5058	
0x...5054	
0x...5050	
0x...504c	
0x...5048	
0x...5044	
0x...5040	
0x...503c	
0x...5038	
0x...5034	
0x...5030	
0x...502c	
0x...5028	
0x...5024	
0x...5020	
0x...501c	
0x...5018	
0x...5014	
0x...5010	
0x...500c	
0x...5008	
0x...5004	
0x80005000	

WP4.

```
void *try_split(void *bp, size_t size) {




}
```