Problem 2 in :	http://www.cs.utah. edu/-raises/cs8810/pres/1 5-6810-12.pdf (Slide No. 20)																		
					The register for the address calculation is made available	stored into memory is made available	The calculated effective address	Address Calculation Time	Data Access Time				The register for the address calculation is made available	stored into memory is made available	The calculated effective address	Address Calculation Time	Data Access Time		
			LD R3 ST R5 LD R7 ST R9	< [R2] < [R4]> [R6] < [R8]> [R10] 1< [R12]	6 4 2	n/a n/a 7 n/a 3 n/a	abcd adde abba abce abba abba				LD R1 <- LD R3 <- ST R5 LD R7 <- ST R9 LD R11 <-	[R4] -> [R6] [R8] -> [R10]	3 6 4 2 8 1	n/a n/a 7 n/a 3 n/a	abcd adde abba abce abba abba	4 7 5 3 9	5 8 commit 6 commit 10		
			LD R3	< [R2]	Tim The register for the address calculation is made available	e when The register that must be stored into memory is made available n/a	The calculated effective address	Address Calculation Time	Data Access Time										
			LD R7 ST R9	> [R6] < [R8] > [R10] 1< [R12]	1 Tim	n/a n/a													
			LD R1	< [R2]	The register for the address calculation is made available	The register that must be stored into	The calculated effective address	Address Calculation Time	Data Access Time										
			ST R5 LD R7 ST R9	< [R4] [R6] < [R8] [R10] 1< [R12]		n/a	abba	2											
		3	LD R1	< [R2]	Tim The register for the address calculation is made available	e when The register that must be stored into memory is made available	The calculated effective address	Address Calculation Time	Data Access Time										
			ST R5 LD R7 ST R9	< [R4]> [R6] < [R8]> [R10] 1< [R12]		n/a n/a 3 n/a	abce	3		can't issue this due to previous unknown store									
		4			The register for the address calculation is made available	memory is made available	The calculated effective address	Address Calculation Time	Data Access Time										
			LD R3 ST R5 LD R7 ST R9	< [R2] < [R4]> [R6] < [R8]> [R10] 1< [R12	4 2	n/a n/a n/a 3 n/a		3		can't issue this due to previous store									
		5			Tim The register for the address calculation is made available	Stored into	The calculated effective address	Address Calculation Time	Data Access Time										
			LD R3 ST R5 LD R7 ST R9	< [R2] < [R4]> [R6] < [R8]> [R10] 1< [R12]	4 2	n/a n/a n/a 3 n/a	abcd abba abce	5 3		Issue! can't issue this due to previous store (we just calculated the address of the previous store), so we can't proceed yet) can't issue this due to previous store									
		6				e when The register that must be stored into	The calculated effective address	Address Calculation Time	Data Access Time										
			LD R3 ST R5 LD R7	< [R2] < [R4]> [R6] < [R8]> [R10]	3 6 4 2	made available n/a n/a n/a 3	abcd abba abce	4 5 3	6	Issued									
			LD R11	1< [R12	1	n/a	abba	2		can't issue this due to previous store (no mem bypassing allowed)									

7			Time	when					
			The register for the address calculation is made available	stored into	The calculated effective address	Address Calculation Time	Data Access Time		
	D R1	[R2]	3	n/a	abcd	4	5	Issued	
		[R4]	6	n/a	adde	7	-		
		> [R6]	4	7	abba	5			
		[R8]		n/a	abce	3	6	Issued	
		> [R10]		3	abce	3		100/00	
		[R12]		n/a	abba	2		can't issue this due to previous store (no mem bypassing allowed)	
	D KII	[KIZ]		IVA	abba			tant rissue tils due to previous store (no mem dypassing allowed)	
8									
8			The register for the address calculation is	stored into	The calculated effective address	Address Calculation Time	Data Access Time		
			made available	made available	dddieso	11110			
	D R1	[R2]	3	n/a	abcd	4	5	Issued	
	D R3	[R4]	6	n/a	adde	7	8	Issue!	
	ST R5	> [R6]	4	7	abba	5	8	Commit	
	D R7	[R8]	2	n/a	abce	3	6	Issued	
	ST R9	> [R10]	8	3					
	D R11	< [R12]	1	n/a	abba	2		can't issue this due to previous store (no mem bypassing allowed)	
			Time	whon					
9			The register for the address calculation is made available	stored into	The calculated effective address	Address Calculation Time	Data Access Time		
9		[R2]	The register for the address calculation is made available	The register that must be stored into memory is	effective address	Calculation	Data Access Time	Issued	
9	D R1	< [R2]	The register for the address calculation is made available	The register that must be stored into memory is made available	effective	Calculation Time	Time	Issued Issuel	
9	.D R1		The register for the address calculation is made available	The register that must be stored into memory is made available n/a	effective address abcd	Calculation Time	Time 5		
9	.D R1 .D R3	[R4]	The register for the address calculation is made available	The register that must be stored into memory is made available n/a	effective address abcd adde	Calculation Time 4 7	Time 5 8	Issue!	
9	.D R1 .D R3 ST R5 .D R7	[R4] > [R6]	The register for the address calculation is made available 3 6 4 2	The register that must be stored into memory is made available n/a n/a 7	address abcd adde abba	Calculation Time 4 7 5	5 8 8	Issue! Commit S S S S S S S S S S S S S S S S S S S	
9	.D R1 .D R3 ST R5 .D R7 ST R9	[R4] > [R6] [R8]	The register for the address calculation is made available 3 6 4 2	The register that must be stored into memory is made available n/a n/a 7 n/a	abcd adde abba abce	Calculation Time 4 7 5 3	5 8 8	Issuel Commit Issued	
9	.D R1 .D R3 ST R5 .D R7 ST R9	[R4] > [R6] [R8] > [R10]	The register for the address calculation is made available 3 6 4 2	The register that must be stored into memory is made available n/a n/a 7 n/a 3	abod adde abba aboe abba	Calculation Time 4 7 5 3	5 8 8	Issue! Commit Issued	
9	.D R1 .D R3 ST R5 .D R7 ST R9	[R4] > [R6] [R8] > [R10]	The register for the address calculation is made available 3 6 4 2 8 1	The register that must be stored into memory is made available n/a n/a 7 n/a 3 n/a	abod adde abba aboe abba	Calculation Time 4 7 5 3	5 8 8	Issue! Commit Issued	
9	.D R1 .D R3 ST R5 .D R7 ST R9	[R4] > [R6] [R8] > [R10]	The register for the address calculation is made available 3 6 4 2 8 1	The register that must be stored into memory is made available n/a n/a n/a 3 n/a 3 n/a the stored into memory is ewhen that must be stored into memory is	abod adde abba aboe abba	Calculation Time 4 7 5 3	5 8 8	Issue! Commit Issued	
10	.D R1 .D R3 ST R5 .D R7 ST R9	< [R4]> [R6] [R8]> [R10] [R12]	The register for the address calculation is made available 3 6 4 2 2 8 1 1 Time The register for the address calculation is made available address calculation is made available	The register that must be stored into memory is made available n/a n/a 7 n/a 3 n/a 3 n/a when The register that must be stored into memory is made available	effective address abcd adde abba abce abba abba abca abba adde adda adde adda adda adda add	Calculation Time 4 7 5 3 9 2 Address Calculation Time	Time 5 8 8 6	Issued Commit tssued can't issue this due to previous store (no mem bypassing allowed)	
10	.D R1 .D R3 ST R5 .D R7 ST R9 .D R11	< [R4]	The register for the address calculation is made available 3 6 4 2 8 1 Time The register for the address calculation is made available 3	The register that must be stored into memory is made available n/a 7 n/a 3 n/a 3 n/a the third that must be stored into memory is made available n/a	effective address abod adde abba abce abba abba abba abba abba abb	Calculation Time 4 7 5 3 9 2 Address Calculation Time	Time 5 8 8 6 Data Access Time	Issued Commit	
10	D R1	Kernel (R4) Kernel (R6) Kernel (R8) Kernel (R8) Kernel (R12) Kernel (R4) Kernel (R4) Kernel (R4)	The register for the address calculation is made available 3 6 4 2 8 1 1 Time The register for the address calculation is made available 3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	The register that must be stored into memory is made available n/a n/a 7 n/a 3 n/a 3 n/a ewhen The register that must be stored into memory is made available n/a n/a	effective address abod adde abba abce abba abba abba abba abba abb	Calculation Time 4 7 5 3 9 2 Address Calculation Time 4 7	Time 5 8 8 6 Data Access Time 5 8	Issued Issued	
10	D R1 D R3 T R5 T R5 D R7 T R9 D R11 D R1 D R1 D R3	Kerring Ker	The register for the address calculation is made available as a second and a second as a s	The register that must be stored into memory is made available n/a 3 n/a 3 n/s when The register that must be stored into memory is made available n/a n/a n/a n/a n/a n/a n/a n/a	effective address abod adde abba abba abba abba abba abba abb	Calculation Time 4 7 5 3 9 2 Address Calculation Time	Time 5 8 8 6 Data Access Time 5 8 8	Issued Is	
10	D R1 R3 R5	 (R4) (R6) (R8) (R10) (R12) (R2) (R4) (R12) (R12) (R2) (R4) (R4) (R4) (R6) (R8) 	The register for the address calculation is made available as calculation is made available as a feet address calculation is made available as a feet address calculation is made available as a feet address calculation is made available as a feet as feet address calculation is made available as a feet as fee	The register that must be stored into memory is made available n/a	effective address abod adde abba abba abba abcd adde abba abba abba abba abba abba abb	Calculation Time 4 7 5 3 9 2 Address Calculation Time 4 7	Time 5 8 8 6 Data Access Time 5 8 6	Issued Commit	
10	D R1 D R3 T R5 D R7 T R9 D R11 D R3 T R9 D R11 D R1	Kerring Ker	The register for the address calculation is made available as a fine of the address calculation as a fine of the addre	The register that must be stored into memory is made available n/a 3 n/a 3 n/s when The register that must be stored into memory is made available n/a n/a n/a n/a n/a n/a n/a n/a	effective address abod adde abba abba abba abba abba abba abb	Calculation Time 4 7 5 3 9 2 Address Calculation Time 4 7	Time 5 8 8 6 Data Access Time 5 8 8	Issued Is	