

(1)

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HW #6

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	\$10	\$10	\$10	\$10	\$10	\$10
1	0	1	0	1	1	1
	1	3	1	1	2	1
2	1	3	1	1	3	4
3	1	3	0	1	4	4
	4	5	1	1	5	9
4	4	5	1	1	6	9
5	9	7	0	1	7	16
6	16	9	1	1	8	16
	25	11			9	25

- This computes the sum of odd integers

2 Loop:  $g = g + A[i]; // g \in \$S_1; i \in \$S_3, A \in \$S_5$   
 $i = i + 1; // j \in \$S_4, h \in \$S_2$   
 if ( $i \neq h$ ) go to Loop.

Loop: Add \$10, \$S3, \$S3  
 Add \$10, \$10, \$10  
 Add \$10, \$10, \$S5  
 Lw \$11, 0(\$10)  
 Add \$S1, \$S1, \$11  
 Add \$S3, \$S3, \$S4  
 bne \$S3, \$S2, Loop

Exit:

(2)

### 3] B.A of array B in \$S0.

\$t0	\$t1	\$t2	\$S0
B[0]	B[10]	B[1]	B[1]
B[1]		B[2]	B[2]
B[2]		B[3]	B[3]
B[3]		B[4]	B[4]
B[4]			
B[8]		B[9]	B[10]

- \$t0 contains the minimum value from B[0] - B[9]
- \$t2 contains B[9]

### 4] Copy words from \$ac to address \$a1 \$V0 # of words copied

if (word == 0) stop & % terminating word is copied.

Addi \$V0, \$Zero, 0 # initializing \$V0

Loop: Lw \$V1, 0(\$ac) # Read word

Sy \$V1, 0(\$a1) # Copy word

beq \$V1, \$Zero, Exit # Comparing

Addi \$V0, \$V0, 1

Addi \$ac, \$ac, 4 # Advance

Addi \$a1, \$a1, 4 # Advance

J Loop

Exit: ...

### 5] for (i=0 ; i <= 100 ; i = i+1) { // a in \$ac, b in \$a1 a[i] = b[i] + c ; // i in \$t0, & c in \$S0

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(3)

(a) Add \$t<sub>0</sub>, \$zero, 0Loop: Add \$t<sub>1</sub>, \$t<sub>0</sub>, \$t<sub>0</sub> # 2;Add \$t<sub>1</sub>, \$t<sub>1</sub>, \$t<sub>1</sub> # hiAddi \$t<sub>2</sub>, \$zero, 101Add \$t<sub>3</sub>, \$t<sub>1</sub>, \$a<sub>1</sub> # b[i] addressAdd \$t<sub>4</sub>, \$t<sub>1</sub>, \$a<sub>0</sub> # a[i] addressLw \$t<sub>5</sub>, 0(\$t<sub>3</sub>) # b[i] valuebeq \$t<sub>0</sub>, \$t<sub>5</sub>, Exit # i < locAdd \$t<sub>6</sub>, \$t<sub>5</sub>, \$t<sub>0</sub> # b[i] + cSw \$t<sub>6</sub>, 0(\$t<sub>4</sub>) # a[i] = b[i] + cAddi \$t<sub>0</sub>, \$t<sub>0</sub>, 1 # i = i + 1

J loop

Exit: ...

(b) (11 \* 100) + 8 = 1108

(c) (9 \* 100) + 1 = 901

6 (a) (7 \* 10) + 5 = 75

(b) S11 \$t<sub>0</sub>, \$S<sub>3</sub>, 2 # hi

` S11 \$t<sub>1</sub>, \$S<sub>4</sub>, 2 # liAdd \$t<sub>0</sub>, \$t<sub>0</sub>, \$S<sub>6</sub> # address of a[i]Lw \$t<sub>2</sub>, 0(\$t<sub>0</sub>)bne \$t<sub>2</sub>, \$S<sub>5</sub>, ExitLoop: Add \$t<sub>0</sub>, \$t<sub>0</sub>, \$t<sub>1</sub>Lw \$t<sub>2</sub>, 0(\$t<sub>0</sub>)beq \$t<sub>0</sub>, \$S<sub>5</sub>, Loop

Exit: ...