



**HACETTEPE
ÜNİVERSİTESİ**

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BBM 234 Computer Organization

MIPS Project

Problem Statement

We are trying to prevent Hababam Sınıfı from cheating. In part 1 we are trying to hide the notes from possible cheaters by dividing and multiplying them. In part 2 we are trying to calculate an average note to see which students' notes are higher than average.

Test Results

Data Segment						
Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)
0x10010000	720	480	80	3	1	0
0x10010020	543516513	1768778099	1769103724	544830578	1919902579	1936269413
0x10010040	0	0	0	0	0	0

Data Segment						
Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)
0x10010000	90	60	10	15	5	0
0x10010020	543516513	1768778099	1769103724	544830578	1919902579	1936269413
0x10010040	0	0	0	0	0	0

Mars Messages

Run I/O

Reset: reset completed.

The average similarirty score is: 29

-- program is finished running (dropped off bottom) --

Clear

Registers	Coproc 1	Coproc 0
Name	Number	Value
\$zero	0	0
\$at	1	0
\$v0	2	0
\$v1	3	0
\$a0	4	0
\$a1	5	0
\$a2	6	0
\$a3	7	0
\$t0	8	0
\$t1	9	0
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	0
\$s1	17	0
\$s2	18	0
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194304
hi		0
lo		0

Registers	Coproc 1	Coproc 0
Name	Number	Value
\$zero	0	0
\$at	1	268500992
\$v0	2	1
\$v1	3	29
\$a0	4	29
\$a1	5	0
\$a2	6	0
\$a3	7	268501012
\$t0	8	268500992
\$t1	9	0
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	0
\$s1	17	6
\$s2	18	6
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	4194408
pc		4194576
hi		1
lo		29

Data Segment									
Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)	
0x10010000	0	1	5	400	112	17	7	0	
0x10010020	560	19	0	11	9	5	0	543516756	
0x10010040	1919252065	543516513	1768778099	1769103724	544830578	1919902579	1936269413	8250	
0x10010060	0	0	0	0	0	0	0	0	

Data Segment									
Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)	
0x10010000	0	5	25	50	14	85	35	0	
0x10010020	70	65	0	55	15	25	0	543516756	
0x10010040	1919252065	543516513	1768778099	1769103724	544830578	1919902579	1936269413	8250	
0x10010060	0	0	0	0	0	0	0	0	
0x10010080	0	0	0	0	0	0	0	0	

Mars Messages

Run I/O

The average similarity score is: 27

-- program is finished running (dropped off bottom) --

Clear

Registers				Registers			
Coprocc 1		Coprocc 0		Coprocc 1		Coprocc 0	
Name	Number	Value		Name	Number	Value	
\$zero	0	0		\$zero	0	0	
\$at	1	0		\$at	1	268500992	
\$v0	2	0		\$v0	2	1	
\$v1	3	0		\$v1	3	27	
\$a0	4	0		\$a0	4	27	
\$a1	5	0		\$a1	5	0	
\$a2	6	0		\$a2	6	0	
\$a3	7	0		\$a3	7	268501048	
\$t0	8	0		\$t0	8	268500992	
\$t1	9	0		\$t1	9	0	
\$t2	10	0		\$t2	10	0	
\$t3	11	0		\$t3	11	0	
\$t4	12	0		\$t4	12	0	
\$t5	13	0		\$t5	13	0	
\$t6	14	0		\$t6	14	0	
\$t7	15	0		\$t7	15	0	
\$s0	16	0		\$s0	16	0	
\$s1	17	0		\$s1	17	15	
\$s2	18	0		\$s2	18	15	
\$s3	19	0		\$s3	19	0	
\$s4	20	0		\$s4	20	0	
\$s5	21	0		\$s5	21	0	
\$s6	22	0		\$s6	22	0	
\$s7	23	0		\$s7	23	0	
\$t8	24	0		\$t8	24	0	
\$t9	25	0		\$t9	25	0	
\$k0	26	0		\$k0	26	0	
\$k1	27	0		\$k1	27	0	
\$gp	28	268468224		\$gp	28	268468224	
\$sp	29	2147479548		\$sp	29	2147479548	
\$fp	30	0		\$fp	30	0	
\$ra	31	0		\$ra	31	4194408	
pc		4194304		pc		4194576	
hi		0		hi		1	
lo		0		lo		27	

I used stack pointer to store n and return values from the last recursion.

Reference

1. <https://courses.engr.illinois.edu/cs232/sp2012/section/disc2sol.pdf>