

# Lab Report

**ECPE 170 – Computer Systems and Networks –  
Spring 2016**

**Name:** Nicolas Ahn

**Lab Topic:** Lab Name (Lab #: )

**Question #1** Take two screenshots of the MIPS register panel: one before your program runs, and one after your program finishes. Put the register panel in Decimal mode (right-click) so it is easy to see register values.

**Answer:**

FP Regs	nt Regs [10]	FP Regs	nt Regs [10]
Int Regs [10]		Int Regs [10]	
PC	= 0	PC	= 4194408
EPC	= 0	EPC	= 0
Cause	= 0	Cause	= 0
BadVAddr	= 0	BadVAddr	= 0
Status	= 805371664	Status	= 805371664
HI	= 0	HI	= 0
LO	= 0	LO	= 0
R0 [r0]	= 0	R0 [r0]	= 0
R1 [at]	= 0	R1 [at]	= 268500992
R2 [v0]	= 0	R2 [v0]	= 10
R3 [v1]	= 0	R3 [v1]	= 0
R4 [a0]	= 1	R4 [a0]	= 1
R5 [a1]	= 2147480380	R5 [a1]	= 2147480380
R6 [a2]	= 2147480388	R6 [a2]	= 2147480388
R7 [a3]	= 0	R7 [a3]	= 0
R8 [t0]	= 0	R8 [t0]	= 25
R9 [t1]	= 0	R9 [t1]	= 5
R10 [t2]	= 0	R10 [t2]	= 15
R11 [t3]	= 0	R11 [t3]	= 8
R12 [t4]	= 0	R12 [t4]	= 37
R13 [t5]	= 0	R13 [t5]	= 0
R14 [t6]	= 0	R14 [t6]	= 0
R15 [t7]	= 0	R15 [t7]	= 0
R16 [s0]	= 0	R16 [s0]	= 15
R17 [s1]	= 0	R17 [s1]	= 18
R18 [s2]	= 0	R18 [s2]	= 7
R19 [s3]	= 0	R19 [s3]	= -3
R20 [s4]	= 0	R20 [s4]	= 0
R21 [s5]	= 0	R21 [s5]	= 0
R22 [s6]	= 0	R22 [s6]	= 0
R23 [s7]	= 0	R23 [s7]	= 0
R24 [t8]	= 0	R24 [t8]	= 0
R25 [t9]	= 0	R25 [t9]	= 0
R26 [k0]	= 0	R26 [k0]	= 0
R27 [k1]	= 0	R27 [k1]	= 0
R28 [gp]	= 268468224	R28 [gp]	= 268468224
R29 [sp]	= 2147480376	R29 [sp]	= 2147480376
R30 [s8]	= 0	R30 [s8]	= 0
R31 [ra]	= 0	R31 [ra]	= 4194328

**Question #2** Take two screenshots of the MIPS memory panel (data tab): one before your program runs, and one after your program finishes. Put the memory panel in Decimal mode (right-click), so it is easy to see memory values. In the after-execution capture, circle the memory location (not register) that contains the final calculated value of Z.

**Answer:**

Data	Text
Data	
User data segment [10000000]..[10040000]	
[10000000]..[1003ffff] 00000000	
User Stack [7ffff338]..[80000000]	
[7ffff338]	0000000001 2147480578
[7ffff340]	0000000000 2147483632 2147483510 2147483491
[7ffff350]	2147483471 2147483421 2147483388 2147483365
[7ffff360]	2147483321 2147483289 2147483248 2147483228
[7ffff370]	2147483200 2147483172 2147483129 2147483114
[7ffff380]	2147483082 2147483061 2147483009 2147482987
[7ffff390]	2147482946 2147482933 2147482915 2147482899
[7ffff3a0]	2147482881 2147482864 2147481345 2147481312
[7ffff3b0]	2147481295 2147481209 2147481175 2147481152
[7ffff3c0]	2147481132 2147481100 2147481088 2147481058
[7ffff3d0]	2147481047 2147481039 2147481021 2147480990
[7ffff3e0]	2147480900 2147480762 2147480739 2147480685
[7ffff3f0]	2147480645 2147480627 0000000000 0000000000
[7ffff400]	1747910656 0795176303 1801677166 0841968741
[7ffff410]	1597125168 1769107571 1700751214 0828731491
[7ffff420]	1815031863 0959472225 1918988335 1630417268
[7ffff430]	1593863539 1937059645 1768042354 1953574766
[7ffff440]	1835626611 1145851648 1027888976 1836017711
[7ffff450]	1768828773 1818585955 0842019375 1886609202
[7ffff460]	1735289202 1885562207 0808923493 1430406144
[7ffff470]	1163091795 1330205523 1430413134 1145134931
[7ffff480]	1397051972 1853177171 1882880105 1030255713
[7ffff490]	1853190703 1702065455 0808529778 1647259696
[7ffff4a0]	1191211893 1163087172 1330205523 1651850574
[7ffff4b0]	1970564725 1919907885 1095762023 0792545364
[7ffff4c0]	1701670760 1667853871 0795633003 1668246574
[7ffff4d0]	1647275105 0792358505 0796029813 1633906540
[7ffff4e0]	1651715948 0792358505 0796029813 1633906540
[7ffff4f0]	1768042348 1966029422 1932489331 0980314466
[7ffff500]	1920169263 1852400175 1651715898 0792358505
[7ffff510]	0980314466 1920169263 1835099951 0792359781
[7ffff520]	0796029813 1633906540 1634152300 0980641133
[7ffff530]	1634628399 1768042352 1932474990 0795894126
[7ffff540]	0007235938 1598506072 1096040772 1380533343
[7ffff550]	1966030163 1932489331 1701994856 1969386799
[7ffff560]	0762672238 1735552888 1937059642 1869361010
[7ffff570]	0795631971 1918986355 0792342373 0796029813
[7ffff580]	1918986355 0792342373 0796025206 0794978668
[7ffff590]	1885433459 1701064548 1869900659 1146617968
[7ffff5a0]	1431461703 1296651342 1229217605 1915698514
[7ffff5b0]	1966042741 0796026227 0808464433 1599361280
[7ffff5c0]	1298091337 1280656463 1651064133 1392538485
[7ffff5d0]	1280724040 1140863037 1280332617 0977099073
[7ffff5e0]	1212275052 1508277205 1207227222 1270248207
[7ffff5f0]	1212275052 1508277205 1207227222 1270248207
[7ffff600]	1212275052 1508277205 1207227222 1270248207
[7ffff610]	1212275052 1508277205 1207227222 1270248207
[7ffff620]	1212275052 1508277205 1207227222 1270248207
[7ffff630]	1212275052 1508277205 1207227222 1270248207
[7ffff640]	1212275052 1508277205 1207227222 1270248207
[7ffff650]	1212275052 1508277205 1207227222 1270248207
[7ffff660]	1212275052 1508277205 1207227222 1270248207
[7ffff670]	1212275052 1508277205 1207227222 1270248207
[7ffff680]	1212275052 1508277205 1207227222 1270248207
[7ffff690]	1212275052 1508277205 1207227222 1270248207
[7ffff6a0]	1212275052 1508277205 1207227222 1270248207
[7ffff6b0]	1212275052 1508277205 1207227222 1270248207
[7ffff6c0]	1212275052 1508277205 1207227222 1270248207
[7ffff6d0]	1212275052 1508277205 1207227222 1270248207
[7ffff6e0]	1212275052 1508277205 1207227222 1270248207
[7ffff6f0]	1212275052 1508277205 1207227222 1270248207
[7ffff700]	1212275052 1508277205 1207227222 1270248207
[7ffff710]	1212275052 1508277205 1207227222 1270248207
[7ffff720]	1212275052 1508277205 1207227222 1270248207
[7ffff730]	1212275052 1508277205 1207227222 1270248207
[7ffff740]	1212275052 1508277205 1207227222 1270248207
[7ffff750]	1212275052 1508277205 1207227222 1270248207
[7ffff760]	1212275052 1508277205 1207227222 1270248207
[7ffff770]	1212275052 1508277205 1207227222 1270248207
[7ffff780]	1212275052 1508277205 1207227222 1270248207
[7ffff790]	1212275052 1508277205 1207227222 1270248207
[7ffff7a0]	1212275052 1508277205 1207227222 1270248207
[7ffff7b0]	1212275052 1508277205 1207227222 1270248207
[7ffff7c0]	1212275052 1508277205 1207227222 1270248207
[7ffff7d0]	1212275052 1508277205 1207227222 1270248207
[7ffff7e0]	1212275052 1508277205 1207227222 1270248207
[7ffff7f0]	1212275052 1508277205 1207227222 1270248207
[7ffff800]	1212275052 1508277205 1207227222 1270248207
[7ffff810]	1212275052 1508277205 1207227222 1270248207
[7ffff820]	1212275052 1508277205 1207227222 1270248207
[7ffff830]	1212275052 1508277205 1207227222 1270248207
[7ffff840]	1212275052 1508277205 1207227222 1270248207
[7ffff850]	1212275052 1508277205 1207227222 1270248207
[7ffff860]	1212275052 1508277205 1207227222 1270248207
[7ffff870]	1212275052 1508277205 1207227222 1270248207
[7ffff880]	1212275052 1508277205 1207227222 1270248207
[7ffff890]	1212275052 1508277205 1207227222 1270248207
[7ffff8a0]	1212275052 1508277205 1207227222 1270248207
[7ffff8b0]	1212275052 1508277205 1207227222 1270248207
[7ffff8c0]	1212275052 1508277205 1207227222 1270248207
[7ffff8d0]	1212275052 1508277205 1207227222 1270248207
[7ffff8e0]	1212275052 1508277205 1207227222 1270248207
[7ffff8f0]	1212275052 1508277205 1207227222 1270248207
[7ffff900]	1212275052 1508277205 1207227222 1270248207
[7ffff910]	1212275052 1508277205 1207227222 1270248207
[7ffff920]	1212275052 1508277205 1207227222 1270248207
[7ffff930]	1212275052 1508277205 1207227222 1270248207
[7ffff940]	1212275052 1508277205 1207227222 1270248207
[7ffff950]	1212275052 1508277205 1207227222 1270248207
[7ffff960]	1212275052 1508277205 1207227222 1270248207
[7ffff970]	1212275052 1508277205 1207227222 1270248207
[7ffff980]	1212275052 1508277205 1207227222 1270248207
[7ffff990]	1212275052 1508277205 1207227222 1270248207
[7ffff9a0]	1212275052 1508277205 1207227222 1270248207
[7ffff9b0]	1212275052 1508277205 1207227222 1270248207
[7ffff9c0]	1212275052 1508277205 1207227222 1270248207
[7ffff9d0]	1212275052 1508277205 1207227222 1270248207
[7ffff9e0]	1212275052 1508277205 1207227222 1270248207
[7ffff9f0]	1212275052 1508277205 1207227222 1270248207
[7ffffa00]	1212275052 1508277205 1207227222 1270248207
[7ffffa10]	1212275052 1508277205 1207227222 1270248207
[7ffffa20]	1212275052 1508277205 1207227222 1270248207
[7ffffa30]	1212275052 1508277205 1207227222 1270248207
[7ffffa40]	1212275052 1508277205 1207227222 1270248207
[7ffffa50]	1212275052 1508277205 1207227222 1270248207
[7ffffa60]	1212275052 1508277205 1207227222 1270248207
[7ffffa70]	1212275052 1508277205 1207227222 1270248207
[7ffffa80]	1212275052 1508277205 1207227222 1270248207
[7ffffa90]	1212275052 1508277205 1207227222 1270248207
[7ffffaa0]	1212275052 1508277205 1207227222 1270248207
[7ffffab0]	1212275052 1508277205 1207227222 1270248207
[7ffffac0]	1212275052 1508277205 1207227222 1270248207
[7ffffad0]	1212275052 1508277205 1207227222 1270248207
[7ffffae0]	1212275052 1508277205 1207227222 1270248207
[7ffffaf0]	1212275052 1508277205 1207227222 1270248207
[7ffffb00]	1212275052 1508277205 1207227222 1270248207
[7ffffb10]	1212275052 1508277205 1207227222 1270248207
[7ffffb20]	1212275052 1508277205 1207227222 1270248207
[7ffffb30]	1212275052 1508277205 1207227222 1270248207
[7ffffb40]	1212275052 1508277205 1207227222 1270248207
[7ffffb50]	1212275052 1508277205 1207227222 1270248207
[7ffffb60]	1212275052 1508277205 1207227222 1270248207
[7ffffb70]	1212275052 1508277205 1207227222 1270248207
[7ffffb80]	1212275052 1508277205 1207227222 1270248207
[7ffffb90]	1212275052 1508277205 1207227222 1270248207
[7ffffba0]	1212275052 1508277205 1207227222 1270248207
[7ffffbb0]	1212275052 1508277205 1207227222 1270248207
[7ffffbc0]	1212275052 1508277205 1207227222 1270248207
[7ffffbd0]	1212275052 1508277205 1207227222 1270248207
[7ffffbe0]	1212275052 1508277205 1207227222 1270248207
[7ffffbf0]	1212275052 1508277205 1207227222 1270248207
[7ffffc00]	1212275052 1508277205 1207227222 1270248207
[7ffffc10]	1212275052 1508277205 1207227222 1270248207
[7ffffc20]	1212275052 1508277205 1207227222 1270248207
[7ffffc30]	1212275052 1508277205 1207227222 1270248207
[7ffffc40]	1212275052 1508277205 1207227222 1270248207
[7ffffc50]	1212275052 1508277205 1207227222 1270248207
[7ffffc60]	1212275052 1508277205 1207227222 1270248207
[7ffffc70]	1212275052 1508277205 1207227222 1270248207
[7ffffc80]	1212275052 1508277205 1207227222 1270248207
[7ffffc90]	1212275052 1508277205 1207227222 1270248207
[7ffffca0]	1212275052 1508277205 1207227222 1270248207
[7ffffcb0]	1212275052 1508277205 1207227222 1270248207
[7ffffcc0]	1212275052 1508277205 1207227222 1270248207
[7ffffcd0]	1212275052 1508277205 1207227222 1270248207
[7ffffce0]	1212275052 1508277205 1207227222 1270248207
[7ffffcf0]	1212275052 1508277205 1207227222 1270248207
[7ffffd00]	1212275052 1508277205 1207227222 1270248207
[7ffffd10]	1212275052 1508277205 1207227222 1270248207
[7ffffd20]	1212275052 1508277205 1207227222 1270248207
[7ffffd30]	1212275052 1508277205 1207227222 1270248207
[7ffffd40]	1212275052 1508277205 1207227222 1270248207
[7ffffd50]	1212275052 1508277205 1207227222 1270248207
[7ffffd60]	1212275052 1508277205 1207227222 1270248207
[7ffffd70]	1212275052 1508277205 1207227222 1270248207
[7ffffd80]	1212275052 1508277205 1207227222 1270248207
[7ffffd90]	1212275052 1508277205 1207227222 1270248207
[7ffffda0]	1212275052 1508277205 1207227222 1270248207
[7ffffdb0]	1212275052 1508277205 1207227222 1270248207
[7ffffdc0]	1212275052 1508277205 1207227222 1270248207
[7ffffdd0]	1212275052 1508277205 1207227222 1270248207
[7ffffde0]	1212275052 1508277205 1207227222 1270248207
[7ffffdf0]	1212275052 1508277205 1207227222 1270248207
[7ffffe00]	1212275052 1508277205 1207227222 1270248207
[7ffffe10]	1212275052 1508277205 1207227222 1270248207
[7ffffe20]	1212275052 1508277205 1207227222 1270248207
[7ffffe30]	1212275052 1508277205 1207227222 1270248207
[7ffffe40]	1212275052 1508277205 1207227222 1270248207
[7ffffe50]	1212275052 1508277205 1207227222 1270248207
[7ffffe60]	1212275052 1508277205 1207227222 1270248207
[7ffffe70]	1212275052 1508277205 1207227222 1270248207
[7ffffe80]	1212275052 1508277205 1207227222 1270248207
[7ffffe90]	1212275052 1508277205 1207227222 1270248207
[7ffffea0]	1212275052 1508277205 1207227222 1270248207
[7ffffeb0]	1212275052 1508277205 1207227222 1270248207
[7ffffec0]	1212275052 1508277205 1207227222 1270248207
[7ffffed0]	1212275052 1508277205 1207227222 1270248207
[7ffffee0]	1212275052 1508277205 1207227222 1270248207
[7ffffef0]	1212275052 1508277205 1207227222 1270248207
[7fffff00]	1212275052 1508277205 1207227222 1270248207
[7fffff10]	

Data	Text
Data	
User data segment [10000000]..[10040000]	
[10000000]..[1000ffff]	00000000
[10010000]..[1001ffff]	0000000000 0000000000 0000000000 0000000000 % . . . . .
[10010010]..[1003ffff]	00000000
User Stack [7ffff338]..[80000000]	
[7ffff338]	0000000001 2147480578 . . . . .
[7ffff340]	0000000000 2147483632 2147483510 2147483491 . . . . . v . . . c . . .
[7ffff350]	2147483471 2147483421 2147483388 2147483365 O . . . . .
[7ffff360]	2147483321 2147483289 2147483248 2147483228 . . . . . p . . . \ . . .
[7ffff370]	2147483200 2147483172 2147483129 2147483114 @ . . . \$ . . . . .
[7ffff380]	2147483082 2147483061 2147483009 2147482987 . . . . . k . . .
[7ffff390]	2147482946 2147482933 2147482915 2147482899 B . . . 5 . . . # . . . . .
[7ffff3a0]	2147482881 2147482864 2147481345 2147481312 . . . . .
[7ffff3b0]	2147481295 2147481209 2147481175 2147481152 . . . . y . . . W . . . @ . . .
[7ffff3c0]	2147481132 2147481100 2147481088 2147481058 , . . . . .
[7ffff3d0]	2147481047 2147481039 2147481021 2147480990 . . . . .
[7ffff3e0]	2147480900 2147480762 2147480739 2147480685 D . . . . . m . . .
[7ffff3f0]	2147480645 2147480627 0000000000 0000000000 E . . . 3 . . . . .
[7ffff400]	1747910656 0795176303 1801677166 0841968741 . . / h o m e / n i c k e l / 2
[7ffff410]	1597125168 1769107571 1700751214 0828731491 0 2 2 _ s p r i n g _ e c p e l
[7ffff420]	1815031863 0959472225 1918988335 1630417268 7 0 / l a b 0 9 / p a r t 1 . a
[7ffff430]	1593863539 1937059645 1768042354 1953574766 s m . _ = / u s r / b i n / q t
[7ffff440]	1835626611 1145851648 1027888976 1836017711 s p i m . O L D P W D = / h o m
[7ffff450]	1768828773 1818585955 0842019375 1886609202 e / n i c k e l / 2 0 2 2 _ s p
[7ffff460]	1735289202 1885562207 0808923493 1430406144 r i n g _ e c p e l 7 0 . D B U
[7ffff470]	1163091795 1330205523 1430413134 1145134931 S _ S E S S I O N _ B U S _ A D
[7ffff480]	1397051972 1853177171 1882880105 1030255713 D R E S S = u n i x : p a t h =
[7ffff490]	1853190703 1702065455 0808529778 1647259696 / r u n / u s e r / 1 0 0 0 / b
[7ffff4a0]	1191211893 1163087172 1330205523 1651850574 u s . G D M S E S S I O N = u b
[7ffff4b0]	1970564725 1919907885 1095762023 0792545364 u n t u - x o r g . P A T H = /
[7ffff4c0]	1701670760 1667853871 0795633003 1668246574 h o m e / n i c k e l / . l o c
[7ffff4d0]	1647275105 0792358505 0796029813 1633906540 a l / b i n : / u s r / l o c a
[7ffff4e0]	1651715948 0792358505 0796029813 1633906540 l / s b i n : / u s r / l o c a
[7ffff4f0]	1768042348 1966029422 1932489331 0980314466 l / b i n : / u s r / s b i n :
[7ffff500]	1920169263 1852400175 1651715898 0792358505 / u s r / b i n : / s b i n :
[7ffff510]	0980314466 1920169263 1835099951 0792359781 b i n : / u s r / g a m e s :
[7ffff520]	0796029813 1633906540 1634152300 0980641133 u s r / l o c a l / g a m e s :
[7ffff530]	1634628399 1768042352 1932474990 0795894126 / s n a p / b i n : / s n a p /
[7ffff540]	0007235938 1598506072 1096040772 1380533343 b i n . X D G _ D A T A _ D I R
[7ffff550]	1966030163 1932489331 1701994856 1969386799 S = / u s r / s h a r e / u b u
[7ffff560]	0762672238 1735552888 1937059642 1869361010 n t u - x o r g : / u s r / l o
[7ffff570]	0795631971 1918986355 0792342373 0796029813 c a l / s h a r e / : / u s r /
[7ffff580]	1918986355 0792342373 0796025206 0794978668 s h a r e / : / v a r / l i b /
[7ffff590]	1885433459 1701064548 1869900659 1146617968 s n a p d / d e s k t o p . X D
[7ffff5a0]	1431461703 1296651342 1229217605 1915698514 G _ R U N T I M E _ D I R = / r
[7ffff5b0]	1966042741 0796026227 0808464433 1599361280 u n / u s e r / 1 0 0 0 . Q T _

**Question #3** Take two screenshots of the MIPS register panel: one before your program runs, and one after your program finishes. Put the register panel in Decimal mode (right-click) so it is easy to see register values.

**Answer:**

PC	= 0	PC	= 4194484
EPC	= 0	EPC	= 0
Cause	= 0	Cause	= 0
BadVAddr	= 0	BadVAddr	= 0
Status	= 805371664	Status	= 805371664
HI	= 0	HI	= 0
LO	= 0	LO	= 0
R0 [r0]	= 0	R0 [r0]	= 0
R1 [at]	= 0	R1 [at]	= 268500992
R2 [v0]	= 0	R2 [v0]	= 10
R3 [v1]	= 0	R3 [v1]	= 0
R4 [a0]	= 1	R4 [a0]	= 1
R5 [a1]	= 2147480404	R5 [a1]	= 2147480404
R6 [a2]	= 2147480412	R6 [a2]	= 2147480412
R7 [a3]	= 0	R7 [a3]	= 0
R8 [t0]	= 0	R8 [t0]	= 0
R9 [t1]	= 0	R9 [t1]	= 0
R10 [t2]	= 0	R10 [t2]	= 0
R11 [t3]	= 0	R11 [t3]	= 0
R12 [t4]	= 0	R12 [t4]	= 0
R13 [t5]	= 0	R13 [t5]	= 0
R14 [t6]	= 0	R14 [t6]	= 0
R15 [t7]	= 0	R15 [t7]	= 0
R16 [s0]	= 0	R16 [s0]	= 10
R17 [s1]	= 0	R17 [s1]	= 15
R18 [s2]	= 0	R18 [s2]	= 6
R19 [s3]	= 0	R19 [s3]	= 0
R20 [s4]	= 0	R20 [s4]	= 0
R21 [s5]	= 0	R21 [s5]	= 0
R22 [s6]	= 0	R22 [s6]	= 0
R23 [s7]	= 0	R23 [s7]	= 0
R24 [t8]	= 0	R24 [t8]	= 0
R25 [t9]	= 0	R25 [t9]	= 0
R26 [k0]	= 0	R26 [k0]	= 0
R27 [k1]	= 0	R27 [k1]	= 0
R28 [gp]	= 268468224	R28 [gp]	= 268468224
R29 [sp]	= 2147480400	R29 [sp]	= 2147480400
R30 [s8]	= 0	R30 [s8]	= 0
R31 [ra]	= 0	R31 [ra]	= 4194328

**Question #4** Take two screenshots of the MIPS memory panel (data tab): one before your program runs, and one after your program finishes. Put the memory panel in Decimal mode

(right-click), so it is easy to see memory values. In the after-execution capture, circle the memory location (not register) that contains the final calculated value of Z.

**Answer:**

Obs:

Data	Text
Data	
User data segment [10000000]..[10040000]	
[10000000]..[1000ffff]	00000000
[10010000]..[1001ffff]	0000000010 0000000015 0000000006 0000000000
[10010010]..[1003ffff]	00000000
User Stack [7ffff350]..[80000000]	
[7ffff350]	0000000001 2147480598 0000000000 2147483632
[7ffff360]	2147483510 2147483491 2147483471 2147483421
[7ffff370]	2147483388 2147483365 2147483321 2147483289
[7ffff380]	2147483248 2147483228 2147483200 2147483172
[7ffff390]	2147483129 2147483114 2147483082 2147483061
[7ffff3a0]	2147483009 2147482987 2147482946 2147482933
[7ffff3b0]	2147482915 2147482899 2147482881 2147482864
[7ffff3c0]	2147481345 2147481312 2147481295 2147481209
[7ffff3d0]	2147481175 2147481152 2147481132 2147481100
[7ffff3e0]	2147481088 2147481058 2147481047 2147481039
[7ffff3f0]	2147481021 2147480990 2147480900 2147480762
[7ffff400]	2147480739 2147480685 2147480665 2147480647
[7ffff410]	0000000000 1747910656 0795176303 1801677166
[7ffff420]	0841968741 1597125168 1769107571 1700751214
[7ffff430]	0828731491 1815031863 0959472225 1918988335
[7ffff440]	1630417524 1593863539 1937059645 1768042354
[7ffff450]	1953574766 1835626611 1145851648 1027888976
[7ffff460]	1836017711 1768828773 1818585955 1430406144
[7ffff470]	1163091795 1330205523 1430413134 1145134931
[7ffff480]	1397051972 1853177171 1882880105 1030255713
[7ffff490]	1853190703 1702065455 0808529778 1647259696
[7ffff4a0]	1191211893 1163087172 1330205523 1651850574
[7ffff4b0]	1970564725 1919907885 1095762023 0792545364
[7ffff4c0]	1701670760 1667853871 0795633003 1668246574
[7ffff4d0]	1647275105 0792358505 0796029813 1633906540
[7ffff4e0]	1651715948 0792358505 0796029813 1633906540
[7ffff4f0]	1768042348 1966029422 1932489331 0980314466
[7ffff500]	1920169263 1852400175 1651715898 0792358505
[7ffff510]	0980314466 1920169263 1835099951 0792359781
[7ffff520]	0796029813 1633906540 1634152300 0980641133
[7ffff530]	1634628399 1768042352 1932474990 0795894126
[7ffff540]	0007235938 1598506072 1096040772 1380533343
[7ffff550]	1966030163 1932489331 1701994856 1969386799
[7ffff560]	0762672238 1735552888 1937059642 1869361010
[7ffff570]	0795631971 1918986355 0792342373 0796029813
[7ffff580]	1918986355 0792342373 0796025206 0794978668
[7ffff590]	1885433459 1701064548 1869900659 1146617968
[7ffff5a0]	1431461703 1296651342 1229217605 1915698514
[7ffff5b0]	1966042741 0796026227 0808464433 1599361280

**Question #5** Take a screenshot of the MIPS register panel after your program finishes. Put the register panel in Decimal mode (right-click) so it is easy to see register values.

Answer:

FP Regs	nt Regs [10]
Int Regs [10]	
PC	= 4194428
EPC	= 0
Cause	= 0
BadVAddr	= 0
Status	= 805371664
HI	= 0
LO	= 0
R0 [r0]	= 0
R1 [at]	= 268500992
R2 [v0]	= 10
R3 [v1]	= 0
R4 [a0]	= 1
R5 [a1]	= 2147480448
R6 [a2]	= 2147480456
R7 [a3]	= 0
R8 [t0]	= 78
R9 [t1]	= 0
R10 [t2]	= 0
R11 [t3]	= 0
R12 [t4]	= 0
R13 [t5]	= 0
R14 [t6]	= 0
R15 [t7]	= 0
R16 [s0]	= 0
R17 [s1]	= 0
R18 [s2]	= 0
R19 [s3]	= 0
R20 [s4]	= 0
R21 [s5]	= 0
R22 [s6]	= 0
R23 [s7]	= 0
R24 [t8]	= 0
R25 [t9]	= 0
R26 [k0]	= 0
R27 [k1]	= 0
R28 [gp]	= 268468224
R29 [sp]	= 2147480444
R30 [s8]	= 0
R31 [ra]	= 4194328



**Question #6** Take a screenshot of the MIPS memory panel (data tab) after your program finishes. Put the memory panel in Decimal mode (right-click), so it is easy to see memory values. **Circle the memory location (not register) that contains the final calculated values of I and Z.**

**Answer:**

Data	Text
Data	
User data segment [10000000]..[10040000]	
[10000000]..[1000ffff]	00000000
[10010000]	0000000078 0000000000 0000000000 0000000000 N . . . . .
[10010010]..[1003ffff]	00000000
User Stack [7ffff37c]..[80000000]	
[7ffff37c]	0000000001 . . . .
[7ffff380]	2147480644 0000000000 2147483632 2147483510 D . . . . . v . . .
[7ffff390]	2147483491 2147483471 2147483421 2147483388 c . . . . O . . . . .
[7ffff3a0]	2147483365 2147483321 2147483289 2147483248 . . . . . p . . .
[7ffff3b0]	2147483228 2147483200 2147483172 2147483155 \ . . . . @ . . . . \$ . . . . .
[7ffff3c0]	2147483140 2147483108 2147483087 2147483035 . . . . .
[7ffff3d0]	2147483013 2147482972 2147482959 2147482941 . . . . \ . . . . O . . . . = . . . .
[7ffff3e0]	2147482925 2147482907 2147482890 2147481371 - . . . . .
[7ffff3f0]	2147481338 2147481321 2147481235 2147481201 . . . . . q . . .
[7ffff400]	2147481178 2147481158 2147481126 2147481114 Z . . . . F . . . . 4 . . . . .
[7ffff410]	2147481084 2147481073 2147481065 2147481047 . . . . .
[7ffff420]	2147481016 2147480926 2147480788 2147480765 . . . . ^ . . . . .
[7ffff430]	2147480711 2147480693 0000000000 0000000000 . . . . u . . . . .
[7ffff440]	0000000000 1836017711 1768828773 1818585955 . . . . / home / nickel
[7ffff450]	0842019375 1886609202 1735289202 1885562207 / 2022 _ spring _ ecp
[7ffff460]	0808923493 1650551855 1882143024 0863269473 e170 / lab09 / part3
[7ffff470]	1836278062 0792551168 0796029813 0795765090 . a s m . _ = / u s r / b i n /
[7ffff480]	1886614641 1140878697 1599296834 1397966163 q t s p i m . D B U S _ S E S S
[7ffff490]	1598967625 1599296834 1380205633 1028870981 I O N _ B U S _ A D D R E S S =
[7ffff4a0]	2020175477 1952542778 1915698536 1966042741 u n i x : p a t h = / r u n / u
[7ffff4b0]	0796026227 0808464433 1937072687 1296320256 s e r / 1000 / b u s . G D M
[7ffff4c0]	1397966163 1028542281 1853186677 2016245108 S E S S I O N = u b u n t u - x
[7ffff4d0]	0006779503 1213481296 1869098813 1848599917 o r g . P A T H = / h o m e / n
[7ffff4e0]	1701536617 1814966124 1818321775 1852400175 i c k e l / . l o c a l / b i n
[7ffff4f0]	1937059642 1869361010 0795631971 1852400243 : / u s r / l o c a l / s b i n
[7ffff500]	1937059642 1869361010 0795631971 0980314466 : / u s r / l o c a l / b i n :
[7ffff510]	1920169263 1768059695 1966029422 1647276659 / u s r / s b i n : / u s r / b
[7ffff520]	0792358505 1852400243 1768042298 1966029422 i n : / s b i n : / b i n : / u
[7ffff530]	1731162739 1936026977 1937059642 1869361010 s r / g a m e s : / u s r / l o
[7ffff540]	0795631971 1701667175 1932474995 0795894126 c a l / g a m e s : / s n a p /
[7ffff550]	0980314466 1634628399 1768042352 1146617966 b i n : / s n a p / b i n . X D
[7ffff560]	1094999879 1147093332 1028870729 1920169263 G _ D A T A _ D I R S = / u s r
[7ffff570]	1634235183 1966040434 1953396066 1870146933 / s h a r e / u b u n t u - x o
[7ffff580]	0792356722 0796029813 1633906540 1752379244 r g : / u s r / l o c a l / s h
[7ffff590]	0795177569 1937059642 1752379250 0795177569 a r e / : / u s r / s h a r e /
[7ffff5a0]	1635135290 1768697714 1853042530 0795111521 : / v a r / l i b / s n a p /
[7ffff5b0]	1802724708 0007368564 1598506072 1414419794 d e s k t o p . X D G _ R U N T
[7ffff5c0]	1598377289 1028802884 1853190703 1702065455 I M E _ D I R = / r u n / u s e
[7ffff5d0]	0808529778 1358966832 1296654164 1146047839 r / 1000 . Q T _ I M _ M O D
[7ffff5e0]	1027951701 1937072745 1279808256 0809323606 U L E = i b u s . S H L V L = 0
[7ffff5f0]	1397310464 1497451600 0003160637 1297043015 . D I S P L A Y = : 0 . G N O M
[7ffff600]	1163157317 1213474770 1308764360 1530303030 e t e r m i n a t c e d u r

**Question #7** Take a screenshot of the MIPS register panel after your program finishes. Put the register panel in Decimal mode (right-click) so it is easy to see register values.



**Answer:**

FP Regs	nt Regs [10]
Int Regs [10]	
PC	= 4194456
EPC	= 0
Cause	= 0
BadVAddr	= 0
Status	= 805371664
HI	= 0
LO	= 0
R0 [r0]	= 0
R1 [at]	= 1
R2 [v0]	= 10
R3 [v1]	= 0
R4 [a0]	= 1
R5 [a1]	= 2147480448
R6 [a2]	= 2147480456
R7 [a3]	= 0
R8 [t0]	= 268500988
R9 [t1]	= -1
R10 [t2]	= 12
R11 [t3]	= 268501032
R12 [t4]	= 26
R13 [t5]	= 17
R14 [t6]	= 0
R15 [t7]	= 0
R16 [s0]	= 268500992
R17 [s1]	= 268501012
R18 [s2]	= 0
R19 [s3]	= 0
R20 [s4]	= 0
R21 [s5]	= 0
R22 [s6]	= 0
R23 [s7]	= 0
R24 [t8]	= 0
R25 [t9]	= 0
R26 [k0]	= 0
R27 [k1]	= 0
R28 [gp]	= 268468224
R29 [sp]	= 2147480444
R30 [s8]	= 0
R31 [ra]	= 4194328

**Question #8** Take a screenshot of the MIPS memory panel (data tab) after your program finishes. Put the memory panel in Decimal mode (right-click), so it is easy to see memory values. Circle the final values of array A.

**Answer:**

Data	Text			
Data				
User data segment [10000000]..[10040000]				
[10000000]..[1000ffff]	00000000			
[10010000]	0000000026	0000000028	0000000030	0000000032
[10010010]	0000000034	0000000001	0000000002	0000000003
[10010020]	0000000004	0000000005	0000000000	0000000000
[10010030]..[1003ffff]	00000000			
User Stack [7ffff37c]..[80000000]				
[7ffff37c]	0000000001			
[7ffff380]	2147480638	0000000000	2147483632	2147483510
[7ffff390]	2147483491	2147483471	2147483421	2147483388
[7ffff3a0]	2147483365	2147483321	2147483289	2147483248
[7ffff3b0]	2147483228	2147483200	2147483172	2147483155
[7ffff3c0]	2147483140	2147483108	2147483087	2147483035
[7ffff3d0]	2147483013	2147482972	2147482959	2147482941
[7ffff3e0]	2147482925	2147482907	2147482890	2147481371
[7ffff3f0]	2147481338	2147481321	2147481235	2147481201
[7ffff400]	2147481178	2147481158	2147481126	2147481114
[7ffff410]	2147481084	2147481073	2147481065	2147481047
[7ffff420]	2147481016	2147480926	2147480788	2147480765
[7ffff430]	2147480711	2147480693	0000000000	1747910656
[7ffff440]	0795176303	1801677166	0841968741	1597125168
[7ffff450]	1769107571	1700751214	0828731491	1815031863
[7ffff460]	0959472225	1918988335	1882141812	0880046689
[7ffff470]	1836278062	0792551168	0796029813	0795765090
[7ffff480]	1886614641	1140878697	1599296834	1397966163
[7ffff490]	1598967625	1599296834	1380205633	1028870981
[7ffff4a0]	2020175477	1952542778	1915698536	1966042741
[7ffff4b0]	0796026227	0808464433	1937072687	1296320256
[7ffff4c0]	1397966163	1028542281	1853186677	2016245108
[7ffff4d0]	0006779503	1213481296	1869098813	1848599917
[7ffff4e0]	1701536617	1814966124	1818321775	1852400175
[7ffff4f0]	1937059642	1869361010	0795631971	1852400243
[7ffff500]	1937059642	1869361010	0795631971	0980314466
[7ffff510]	1920169263	1768059695	1966029422	1647276659
[7ffff520]	0792551168	1852400243	1768059695	1966029422

**Question #9** Take a screenshot of the MIPS memory panel (data tab) after your program finishes. Put the memory panel in Hex mode (right-click), since Decimal mode will not allow us to distinguish between bytes. **Circle two things: the final value of the pointer 'result' in memory, and the corresponding location that result points to.** Does that location in memory contain the ASCII code for the character 'e'? (If not, you had better check your work!)

**Answer:**

Data	Text
Data	
User data segment [10000000]..[10040000]	
[10000000]..[1000ffff]	00000000
[10010000]	74736574 000a0808 00000000 00000000 test . . . . .
[10010010]..[100100ff]	00000000
[10010100]	73726946 616d2074 20686374 61207461 First match at a
[10010110]	65726464 00207373 6568540a 74616d20 ddress . . The mat
[10010120]	6e696863 68632067 63617261 20726574 ching character
[10010130]	65207369 206f4e00 6374616d 6f662068 is e . No match fo
[10010140]	00646e75 10010001 00000000 00000000 und . . . . .
[10010150]..[1003ffff]	00000000
User Stack [7ffff37c]..[80000000]	
[7ffff37c]	00000001 . . . .
[7ffff380]	7ffff43e 00000000 7fffff0 7fffff76 > . . . . . v . . .
[7ffff390]	7fffff63 7fffff4f 7fffff1d 7ffffefc c . . . O . . . . .
[7ffff3a0]	7ffffee5 7ffffeb9 7ffffe99 7ffffe70 . . . . . p . . .
[7ffff3b0]	7ffffe5c 7ffffe40 7ffffe24 7ffffe13 \ . . . @ . . . \$ . . . . .
[7ffff3c0]	7ffffe04 7ffffde4 7ffffdcf 7ffffd9b . . . . .
[7ffff3d0]	7ffffd85 7ffffd5c 7ffffd4f 7ffffd3d . . . \ . . . O . . . = . . .
[7ffff3e0]	7ffffd2d 7ffffd1b 7ffffd0a 7ffff71b - . . . . .
[7ffff3f0]	7ffff6fa 7ffff6e9 7ffff693 7ffff671 . . . . . q . . .
[7ffff400]	7ffff65a 7ffff646 7ffff626 7ffff61a Z . . . F . . . & . . . . .
[7ffff410]	7ffff5fc 7ffff5f1 7ffff5e9 7ffff5d7 . . . . .
[7ffff420]	7ffff5b8 7ffff55e 7ffff4d4 7ffff4bd . . . . ^ . . . . .
[7ffff430]	7ffff487 7ffff475 00000000 682f0000 . . . . u . . . . . / h
[7ffff440]	2f656d6f 6b63696e 322f6c65 5f323230 ome / nickel / 2022 _
[7ffff450]	69727073 655f676e 31657063 6c2f3037 spring _ ecpe170 / l
[7ffff460]	39306261 7261702f 702f3574 35747261 ab09 / part5 / part5
[7ffff470]	6d73612e 2f3d5f00 2f727375 2f6e6962 . asm . _ = / usr / bin /
[7ffff480]	70737471 44006d69 5f535542 53534553 qtspi m . DBUS _ SESS
[7ffff490]	5f4e4f49 5f535542 52444441 3d535345 ION _ BUS _ ADDRESS =
[7ffff4a0]	78696e75 7461703a 722f3d68 752f6e75 unix : path = / run / u
[7ffff4b0]	2f726573 30303031 7375622f 4d444700 ser / 1000 / bus . GDM
[7ffff4c0]	53534553 3d4e4f49 6e756275 782d7574 SESSION = ubuntu - x
[7ffff4d0]	0067726f 48544150 6f682f3d 6e2f656d org . PATH = / home / n
[7ffff4e0]	656b6369 6c2e2f6c 6c61636f 6e69622f ickel / . local / bin
[7ffff4f0]	73752f3a 6f6c2f72 2f6c6163 6e696273 : / usr / local / sbin
[7ffff500]	73752f3a 6f6c2f72 2f6c6163 3a6e6962 : / usr / local / bin :
[7ffff510]	7273752f 6962732f 752f3a6e 622f7273 / usr / sbin : / usr / b
[7ffff520]	2f3a6e69 6e696273 69622f3a 752f3a6e in : / sbin : / bin : / u
[7ffff530]	672f7273 73656d61 73752f3a 6f6c2f72 sr / games : / usr / lo
[7ffff540]	2f6c6163 656d6167 732f3a73 2f70616e cal / games : / snap /
[7ffff550]	3a6e6962 616e732f 69622f70 4458006e bin : / snap / bin . XD