

MARS

Data Segment								
Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x10010000	0x12345678	0x44434241	0x48474645	0x34333231	0x38373635	0x756c4600	0x75622078	0x0000006e
0x10010020	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010040	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010060	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010080	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x100100a0	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x100100c0	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x100100e0	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010100	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010120	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000

0x10010000 (.data) ☒ Hexadecimal Addresses ☒ Hexadecimal Values ☐ ASCII

ADDRESS	VALUE (+0)	VALUE (+4)
0x1001 0000		
0x1001 0020		

ADDRESS	VALUE (+0)				VALUE (+4)			
	+3	+2	+1	+0	+7	+6	+5	+4
0x1001 0000								
0x1001 0020								

ADDRESS	CONTENT
0x1001 0007	
0x1001 0006	
0x1001 0005	
0x1001 0004	
0x1001 0003	
0x1001 0002	
0x1001 0001	
0x1001 0000	

Data Directives

Example

```
.data

.space    5                # allocates _____ bytes of memory

.ascii    "hop"            # allocates _____ bytes of memory

.asciiz    "Flux"          # allocates _____ bytes of memory



.byte     10 0x00 0x41 48 0x30 0xFF # allocates _____ bytes of memory

.half     0x1234 0x56 0xABCD # allocates _____ bytes of memory

.word     0xFACE 0xDEADBEEF # allocates _____ bytes of memory

.float    42 6.75         # allocates _____ bytes of memory
```

Data Segment								
Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x10010000	0x00000000	0x706f6800	0x78756c46	0x41000a00	0x00ff3030	0x00561234	0x0000abcd	0x0000face
0x10010020	0xdeadbeef	0x42280000	0x40d80000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010040	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000



0x10010000 (.data)
☒ Hexadecimal Addresses
☒ Hexadecimal Values
☐ ASCII

Data Segment								
Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x10010000	0x00000000	0x706f6800	0x78756c46	0x41000a00	0x00ff3030	0x00561234	0x0000abcd	0x0000face
0x10010020	0xdeadbeef	0x42280000	0x40d80000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010040	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000

0x10010000 (.data)
☒ Hexadecimal Addresses
☒ Hexadecimal Values
☐ ASCII

ADDRESS	CONTENT (HEX)	ADDRESS	CONTENT (HEX)	ADDRESS	CONTENT (HEX)
0x1001 000F		0x1001 001F		0x1001 002F	
0x1001 000E		0x1001 001E		0x1001 002E	
0x1001 000D		0x1001 001D		0x1001 002D	
0x1001 000C		0x1001 001C		0x1001 002C	
0x1001 000B		0x1001 001B		0x1001 002B	
0x1001 000A		0x1001 001A		0x1001 002A	
0x1001 0009		0x1001 0019		0x1001 0029	
0x1001 0008		0x1001 0018		0x1001 0028	
0x1001 0007		0x1001 0017		0x1001 0027	
0x1001 0006		0x1001 0016		0x1001 0026	
0x1001 0005		0x1001 0015		0x1001 0025	
0x1001 0004		0x1001 0014		0x1001 0024	
0x1001 0003		0x1001 0013		0x1001 0023	
0x1001 0002		0x1001 0012		0x1001 0022	
0x1001 0001		0x1001 0011		0x1001 0021	
0x1001 0000		0x1001 0010		0x1001 0020	

Syscall System Services

Syscall 1: _____

Syscall 34: _____

Syscall 35: _____

Syscall 36: _____

Syscall 4: _____

Syscall 11: _____

Example

Code

`.text`

```
li    $t0 -1
move  $a0 $t0
li    $v0 1
syscall
```

```
li    $a0 '\n'
li    $v0 11
syscall
```

```
li    $v0 34
move  $a0 $t0
syscall
```

```
li    $a0 '\n'
li    $v0 11
syscall
```

```
move  $a0 $t0
li    $v0 35
syscall
```

```
li    $a0 '\n'
li    $v0 11
syscall
```

```
move  $a0 $t0
li    $v0 36
syscall
```

Output

```
-1
0xffffffff
11111111111111111111111111111111
4294967295
```