

Absolute Value

Given variable A holds an 8-bit signed 2's complement number. Write a program to find the absolute value A. Save result back into variable A.

$A = |A|$

Simulation of the problem $A = |-113_{10}|$

```

.CSEG
Absolute:
→ lds r16, A
  tst r16
  brpl endAbs
  neg r16
endAbs:
  sts A, r16
  rjmp Absolute

```

Name	Value	Type	Location
A	0x8F ''	SRAM Locat:	0x0100 [SRAM]

Figure 1 Start of Absolute program with variable A initialized to -71_{16} (-113_{10})

```

.CSEG
Absolute:
  lds r16, A
  tst r16
  brpl endAbs
  neg r16
endAbs:
→ sts A, r16
  rjmp Absolute

```

Name	Value	Type	Location
A	0x71 'q'	SRAM Locat:	0x0100 [SRAM]

Figure 2 End of Absolute program with variable A containing $+71_{16}$ ($+113_{10}$)