Project

Assembly Language Programs

Write a two-pass assembler for the 12 bit accumulator architecture having instructions as follows.

Opcode	Meaning	Assembly Opcode
0000	Clear accumulator	CLA
0001	Load into accumulator from address	LAC
0010	Store accumulator contents into address	SAC
0011	Add address contents to accumulator contents	ADD
0100	Subtract address contents from accumulator contents	SUB
0101	Branch to address if accumulator contains zero	BRZ
0110	Branch to address if accumulator contains negative value	BRN
0111	Branch to address if accumulator contains positive value	BRP
1000	Read from terminal and put in address	INP
1001	Display value in address on terminal	DSP
1010	Multiply accumulator and address contents	MUL
1011	Divide accumulator contents by address content. Quotient in R1 and remainder in R2	DIV
1100	Stop execution	STP

Team size: 2 from your group
Soft copy of code to be submitted for anti-plagiarism check
Grading: Documentation, error reporting, working assembler all carry equal weight.