Fibonacci Sequence (New Code 1-233) **4-11-2017**

Instruction	A#	Address	Opcode + Operand		
LDI	0	**0000**	**0111** 0000	Load 0 into Reg A	x = 0
STA	1	0001	**0100** 1101	Store Reg A value in X Variable	
OUT	2	0010	0101 0000	Output Reg A	
LDI	3	0011	0111 0001	Load 1 into Reg A	y = 1
STA	4	**0100**	0100 1110	Store Reg A value in Y Variable	
OUT	5	0101	0101 0000	Output Reg A	
ADD	6	0110	0010 1101	Add Y variable to Reg A	z = x + y
JC	7	0111	1000 **0000**	Go to Beginning if over 255	
STA	8	1000	0100 1111	Store Reg A value in Z Variable	
LDA	9	1001	0001 1110	Load Reg A with Y variable	x = y
STA	A	1010	0100 1101	Store Reg A value in X Variable	
LDA	B	1011	0001 1111	Load Reg A with Z variable	y = z
JMP	C	1100	0110 **0100**	Go to Address **0100** (4)	
[X]	D	1101	0000 0000		
[Y]	E	1110	0000 0000	Variables	
[Z]	F	1111	0000 0000		

Count from 0 - 255 In increments of 1

ADD[4]	0	0000	**0010** 1000
OUT	1	0001	**0101** 0000
JMP	2	0010	**0110** 0000
[1]	8	1000	0000 0001

Adding 14 and 28 for sum of 42

LDA[4]		0000	**0001** 0100
ADD[5]		0001	**0010** 0101
OUT		0010	**0101** 0000
HLT		0011	**1111** 0000
[14]		0100	0000 1110
[28]		0101	0001 1100

Subtracting 14 from 28 for sum of 14

LDA[5]		0000	**0001** 0101
SUB[4]		0001	**0011** 0100
OUT		0010	**0101** 0000
HLT		0011	**1111** 0000
[14]		0100	0000 1110
[28]		0101	0001 1100

Subtracting 28 from 14 for sum of -14

LDA[4]		0000	**0001** 0100
SUB[5]		0001	**0011** 0101
OUT		0010	**0101** 0000
HLT		0011	**1111** 0000
[14]		0100	0000 1110
[28]		0101	0001 1100