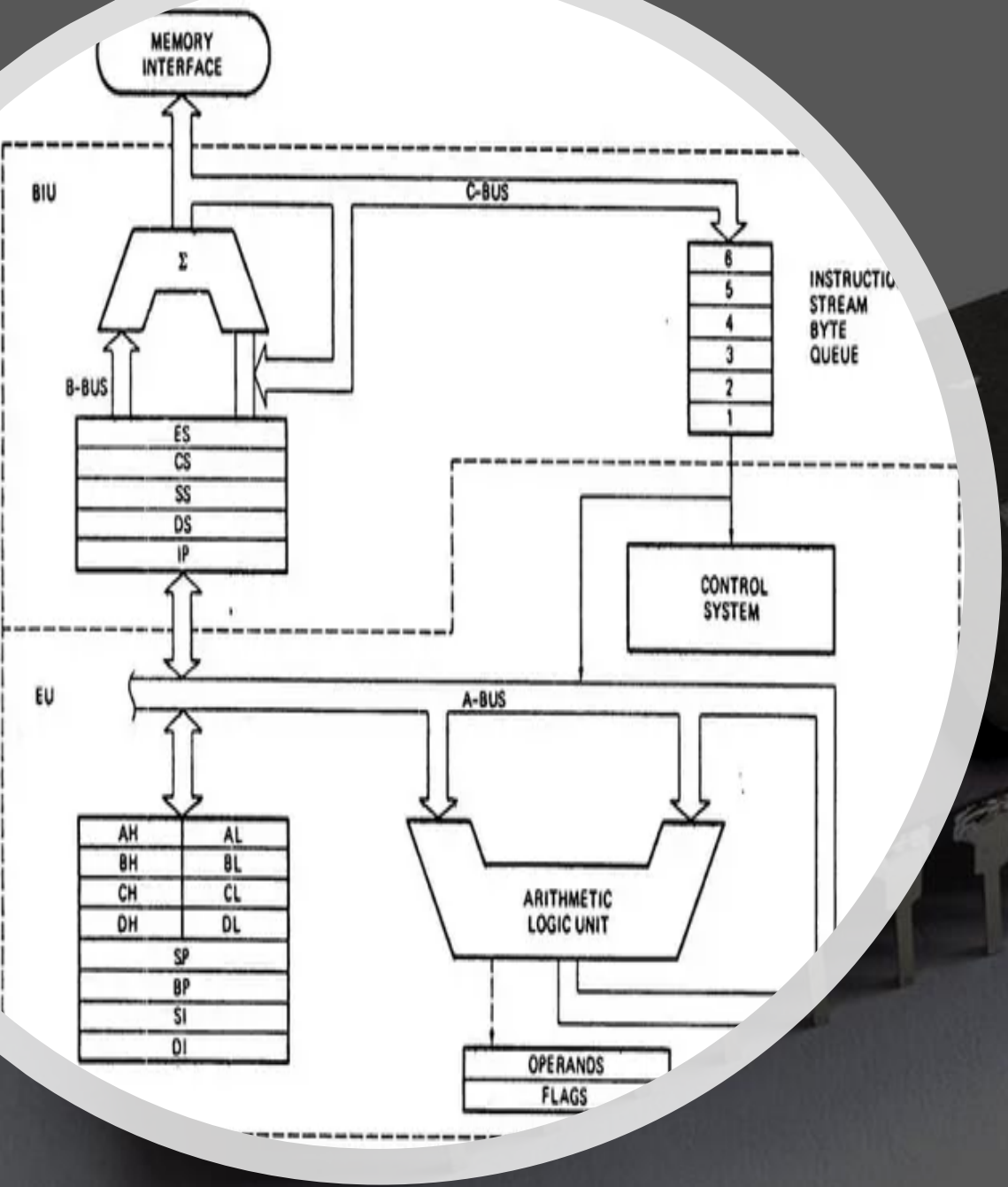


Third Project

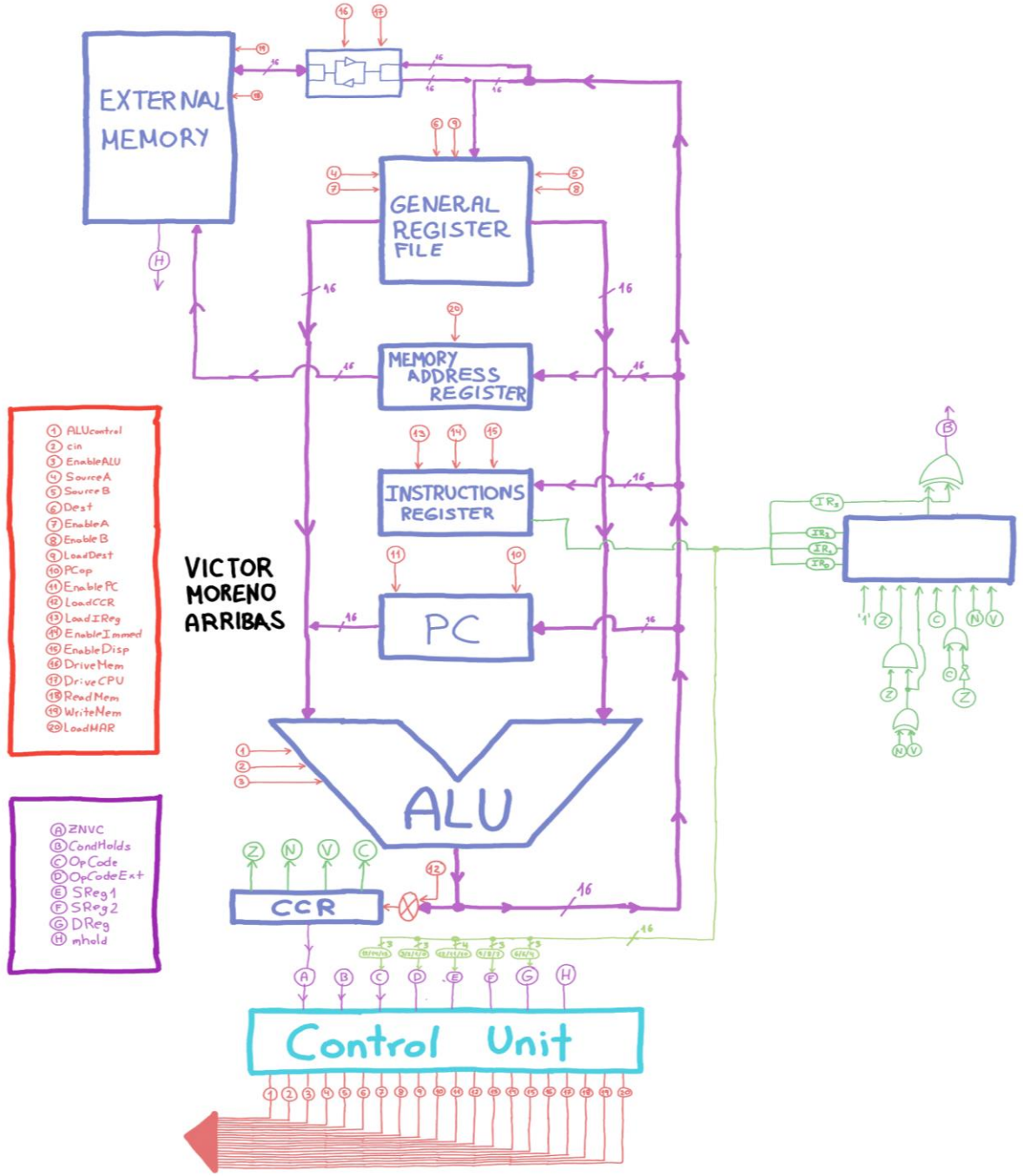
16-bit CPU

Victor Moreno Arribas 180070
Jorge Albendea Pizarro 190229

CPU signals

Question 1
States diagram

Question 2
States decoder



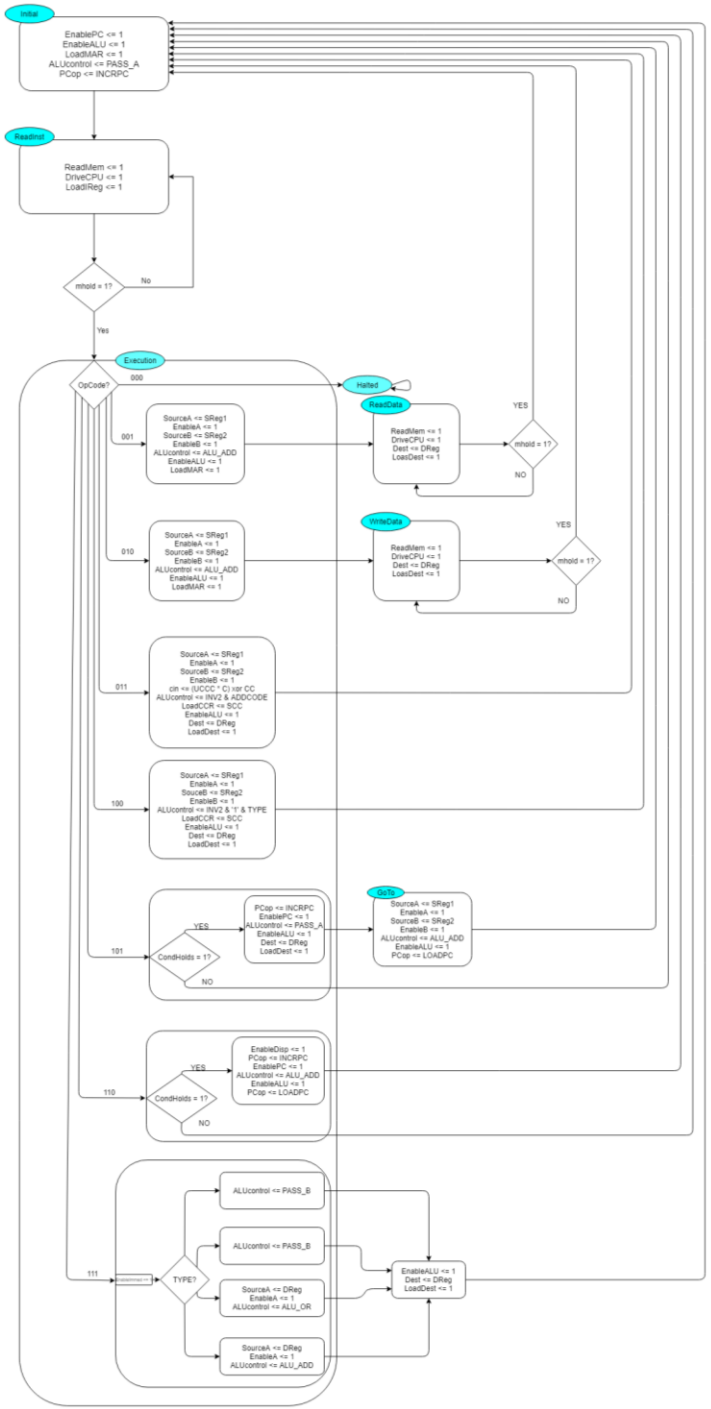
CPU signals

Question 1

States diagram

Question 2

States decoder



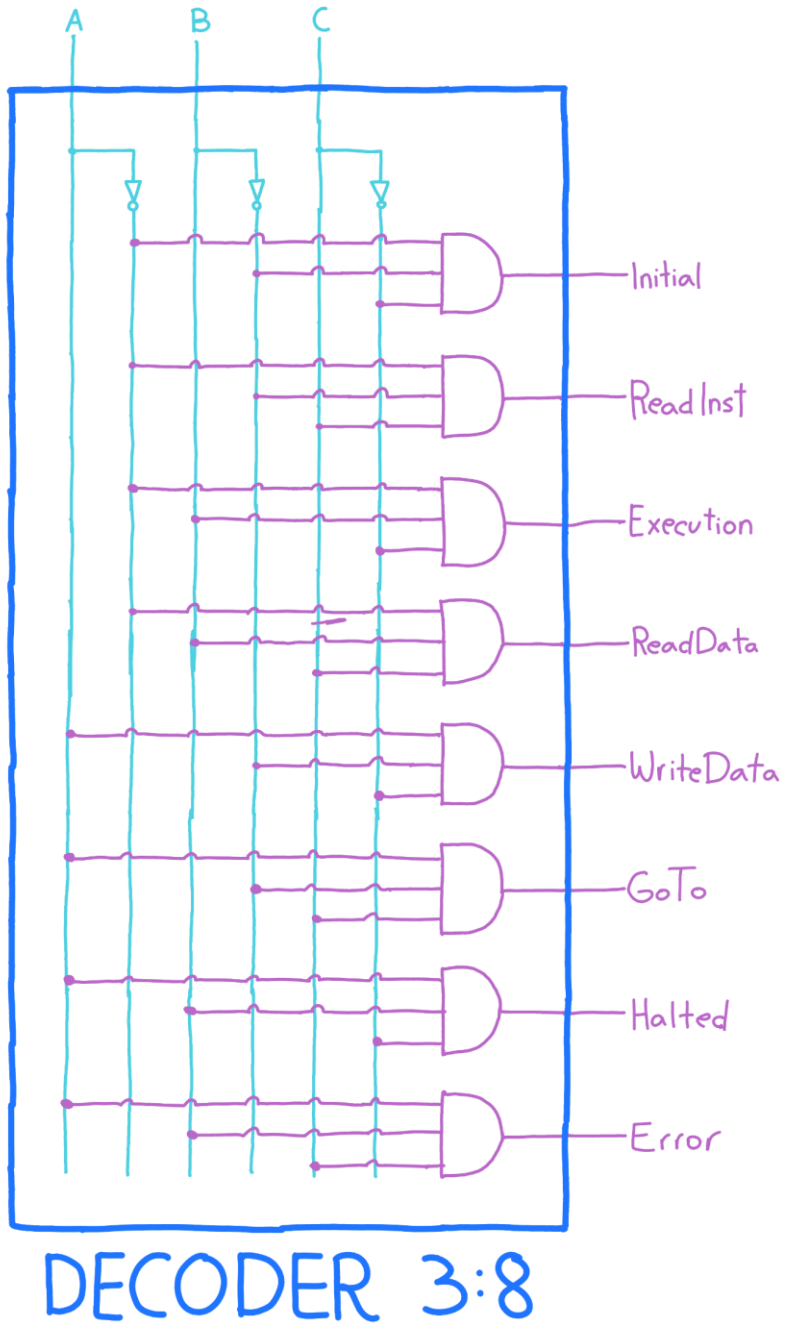
CPU signals

Question 1
States diagram

Question 2
States decoder

Truth table

A	B	C	States
0	0	0	Initial
0	0	1	ReadInst
0	1	0	Execution
0	1	1	ReadData
1	0	0	WriteData
1	0	1	GoTo
1	1	0	Halted
1	1	1	Error

Minterm Equations

Initial = $\bar{A}\cdot\bar{B}\cdot\bar{C}$
ReadInst = $\bar{A}\cdot\bar{B}\cdot C$
Execution = $\bar{A}\cdot B\cdot\bar{C}$
ReadData = $\bar{A}\cdot B\cdot C$
WriteData = $A\cdot\bar{B}\cdot\bar{C}$
GoTo = $A\cdot\bar{B}\cdot C$
Halted = $A\cdot\bar{B}\cdot C$
Error = $A\cdot B\cdot C$