

ESE501 Project 1 Phase 1

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Data Path

_modulesTop

Register File

Data Memory

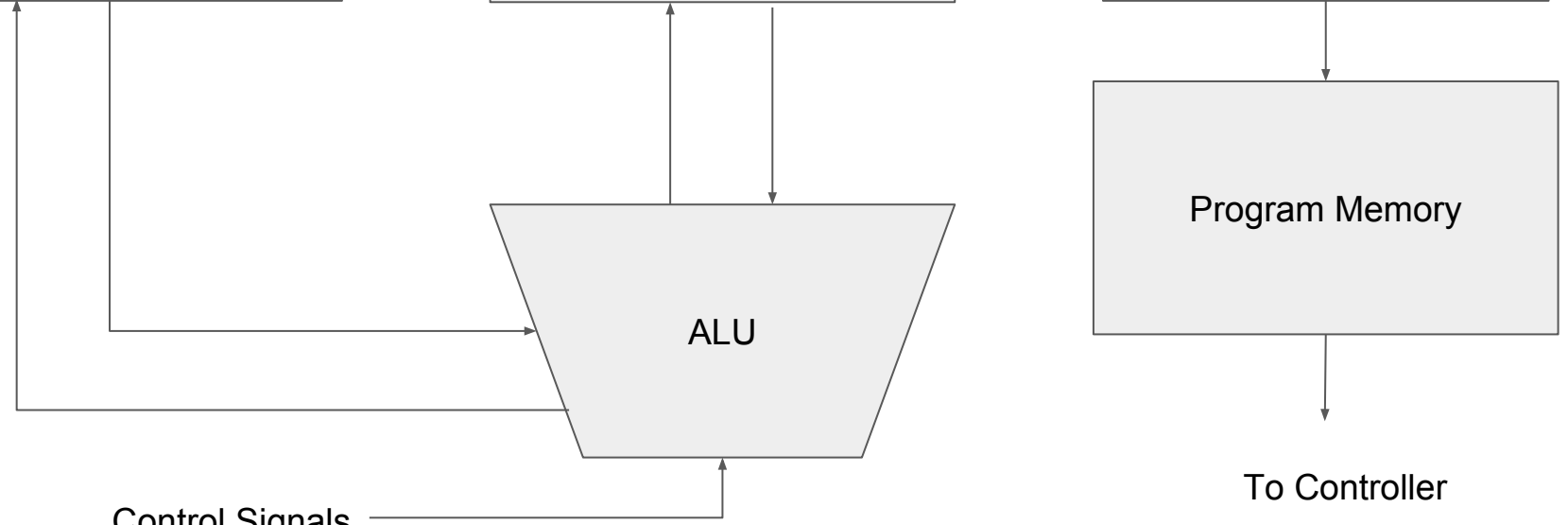
Program Counter

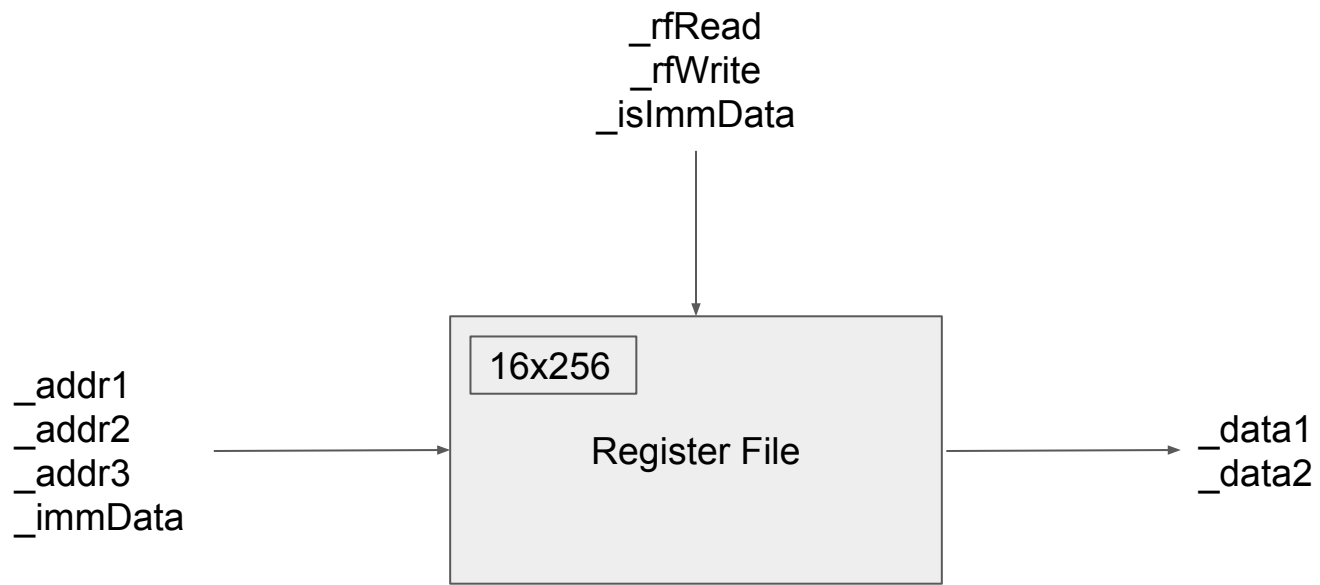
Program Memory

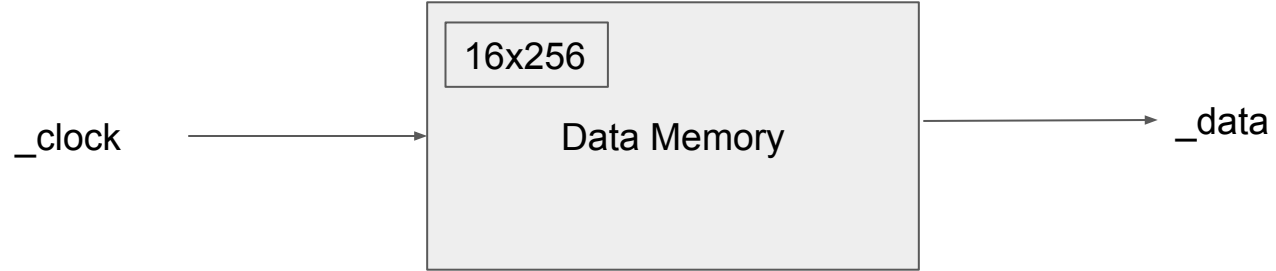
ALU

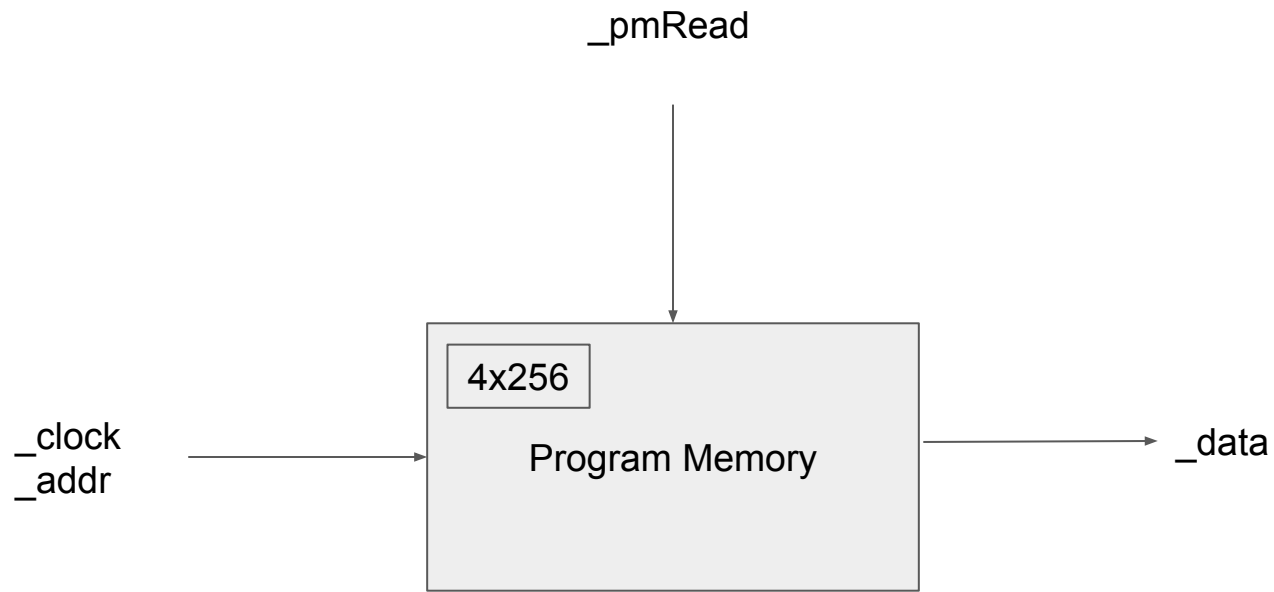
Control Signals

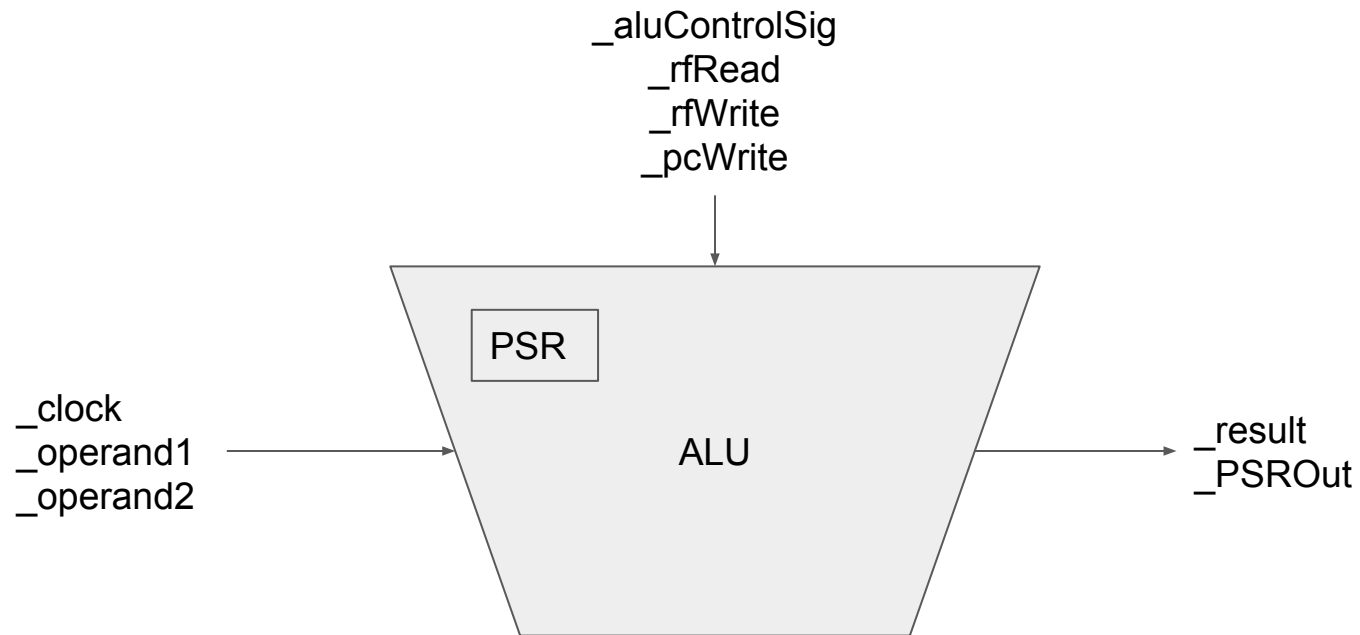
To Controller











Control Signals

Instruction	ALU	Immediate (_isImmData)	Memory Read (_rfRead)	Memory Write (_rfWrite)	PC Write (_pcWrite)
ADD	00000	0	1	1	0
ADDI	00001	1	1	1	0
SUB	00010	0	1	1	0
SUBI	00011	1	1	1	0
CMP	00100	0	1	1	0
CMPI	00101	1	1	1	0
AND	00110	0	1	1	0
ANDI	00111	1	1	1	0
OR	01000	0	1	1	0
ORI	01001	1	1	1	0
XOR	01010	0	1	1	0
XORI	01011	1	1	1	0
MOV	01100	0	1	1	0
MOVI	01101	1	1	1	0
LSH	01110	0	1	1	0
LSHI	01111	1	1	1	0
ASH	10000	0	1	1	0
ASHI	10001	1	1	1	0
LUI	10010	0	1	1	0
LOAD	10011	1	1	1	0
STOR	10100	0	1	1	0
Bcond	10101	1	0	0	1
Jcond	10110	0	1	0	1
JAL	10111	1	1	0	1