

TEAM fuchsia pink

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MAPPING OF OPCODE TO MACHINE CODE

INSTRUCTIONS	INSTRUCTION CODE	BINARY CODE
DATA TRANSFER INSTRUCTIONS		
LOAD	LOAD	0000 0000
STORE	STORE	0000 0001
SAVE	SAVE	0000 0010
ARITHMETIC INSTRUCTIONS		
INC	INC	0010 0000
DEC	DEC	0010 0001
ADD	ADD	0010 0010
SUB	SUB	0010 0010
MUL	MUL	0010 0100
DIV	DIV	0010 0101
COMPARISON OPERATION		
CMP	CMP	0100 0000
LOGIC INSTRUCTIONS		
AND	AND	0100 0000
OR	OR	0100 0001
NOR	NOR	0100 0010
XOR	XOR	0100 0011
PROGRAM FLOW INSTRUCTIONS		

JE	JE	1000 0000
JG	JG	1000 0001
JL	JL	1000 0010
JMP	JMP	1000 0011

MAPPING OF REGISTERS TO BINARY CODE

	REGISTER CODE	BINARY CODE
REGISTERS	r0	0000 0000
	r1	0000 0001
	r2	0000 0010
	r3	0000 0011
	r4	0000 0100
	r5	0000 0101
	r6	0000 0110
	r7	0000 0111
MEMORY ADDRESS REGISTERS	MAR0	0010 0000
	MAR1	0010 0001
PROGRAM COUNTER	PC	0100 0000
INSTRUCTION REGISTER	IR	0110 0000
FLAG	FLAG	1000 0000

INSTRUCTIONS	SYNTAX
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Data Transfer Instructions	
Load	LOAD <register>,<memory address>
Store	STORE <memory address>,<register>
Save	SAVE <register>,<immediate value>
Arithmetic Instructions	
Inc	INC <register>, <register>
Dec	DEC <register>, <register>
Add	ADD <register>, <register>
Sub	SUB <register>, <register>
Mul	MUL <register>, <register>
Div	DIV <register>, <register>

Comparison Operations	
Cmp	CMP <register>, <register>
Logic Instructions	
And	AND <register>, <register>
Or	OR <register>, <register>
Not	NOT <register>, <register>
Xor	XOR <register>, <register>
Program Flow Instructions	
JE	JE <label>
JG	JG <label>

JL	JL <label>
JMP	JMP <label>

Registers: r0, r1, r2, r3, r4, r5, r6

Memory Address: MAR0, MAR1