INSTRUCTION	TYPE	OPCODE	SEL	ALU	MNEMONIC	OPERATION
NO OPERATION	R	0000	XXXX	00000	NOP	PC<=PC+1
ADD IMMEDIATE	IM	0001	R[x] addr	ZZZZ	ADD R[x], #data	R[x]<=R[x]+#data
ADD	R	0010	0000	00001	ADD R[x], R[y]	R[x]<=R[x]+R[y]
SUBSTRACT	R	0010	0001	00010	SUB R[x], R[y]	R[x]<=R[x]-R[y]
INCREMENT	R	0011	0000	00011	INC R[x]	R[x]<=R[x]+1
DECREMENT	R	0011	0001	00100	DEC R[x]	R[x]<=R[x]-1
SHIFT LEFT	R	0100	0000	00101	SHL R[x], R[y]	R[x]=R[x]<<R[y]
SHIFT RIGHT	R	0100	0001	00110	SHR R[x], R[y]	R[x]=R[x]>>R[y]
LOGICAL NOT	R	0101	0000	00111	NOT R[x]	R[x]<=NOT R[x]
LOGICAL NOR	R	0101	0001	01000	NOR R[x]	R[x]<=NOR R[x]
LOGICAL NAND	R	0101	0010	01001	NAND R[x]	R[x]<=NAND R[x]
LOGICAL XOR	R	0101	0011	01010	XOR R[x]	R[x]<=XOR R[x]
LOGICAL AND	R	0101	0100	01011	AND R[x]	R[x]<=AND R[x]
LOGICAL OR	R	0101	0101	01100	OR R[x]	R[x]<=OR R[x]
CLEAR	R	0101	0110	01101	CLR R[x]	R[x]<=0
SET	R	0101	0111	01110	SET R[x]	R[X]<=1
SET IF LESS THAN	R	0101	1111	01111	SLT R[x], R[y]	IF R[x]<R[y] THEN R[x]==FF
RESET IF LESS THAN	R	0101	1110	10000	RLT R[x], R[y]	IF R[x]<R[y] THEN R[x]=00
MOVE	R	0101	1000	10001	MOV R[x], R[y]	R[y]<=R[x]
LOAD INDIRECT	EM	1000	XXXX	10010	LD R[x], R[y]	R[x]<=MEM[R[y]]
STORE INDIRECT	EM	1001	XXXX	10011	STR R[x], R[y]	MEM[R[x]]<=R[y]
LOAD REGISTER	EM	1010	R[x} addr	10100	LD R[x], #addr	R[x]<=MEM[#addr]
STORE REGISTER	EM	1011	R[x] addr	10101	STR R[x], #addr	MEM[#addr]<=R[x]
JUMP	BR	1100	XXXX	ZZZZZ	JMP #addr	PC<=#addr
BRANCH IF ZERO	BR	1101	XXXX	ZZZZZ	JZ #offset	IF R[x]==0, PC<=PC+offset
BRANCH IF NOT ZERO	BR	1110	XXXX	ZZZZZ	JNZ #offset	IF R[x]<>0, PC<=PC+offset