Instruction Decode Logic Table

Levels_required		1	4	4	3	2	0	2	3,3	1	3	2	4
opcode	CODE (16bit)	R_type	RD	W_reg	W_mem	LHI	sel69	alu_op	Lmstart	lwsr	mem_ans	Jump	Stop
add r3,r1,r2	0000 ra rb rc 0 00	0	10	1	0	0	0	001	00	0	1	00	0
adc r3,r1,r2	0000 ra rb rc 0 10	0	10	1	0	0	0	010	00	0	1	00	0
adz r3,r1,r2	0000 ra rb rc 0 01	0	10	1	0	0	0	011	00	0	1	00	0
adi r2,r1,D6	0001 ra rb UUU_UUU	1	01	1	0	0	0	001	00	0	1	00	0
ndu r3,r1,r2	0010 ra rb rc 0 00	0	10	1	0	0	0	100	00	0	1	00	0
ndc r3,r1,r2	0010 ra rb rc 0 10	0	10	1	0	0	0	101	00	0	1	00	0
ndz r3,r1,r2	0010 ra rb rc 0 01	0	10	1	0	0	0	110	00	0	1	00	0
Lhi r1,D9	0011 ra UUU_UUU_UUU	1	00	1	0	1	1	111	00	0	1	00	0
lw r1,r2,imm	0100 ra rb UUU_UUU	1	00	1	0	0	0	000	00	1	0	00	0
sw r1,r2,imm	0101 ra rb UUU_UUU	1	00	0	1	0	0	000	00	1	0	00	0
LM ra,D6	0110 ra 0 UUU_UUU_UU	1	11	1	0	0	0	111	10	0	0	00	0
SM ra,D6	0111 ra 0 UUU_UUU_UU	1	11	0	1	0	0	111	11	0	0	00	0
beq ra,rb,d6	1100 ra rb UUU_UUU	1	00	0	0	0	0	111	00	0	0	01	0
jal ra,imm	1000 ra UUU_UUU_UUU	1	00	1	0	0	1	111	00	0	1	10	0
jlr ,ra,rb	1001 ra rb 000_000	0	00	1	0	0	0	111	00	0	0	11	0
NOP	1111 1111 1111 1110	0	00	0	0	0	0	000	00	0	0	0	0
HALT	1111 1111 1111 1111	0	00	0	0	0	0	000	00	0	0	0	1

Note:- 1.The "U" will be filled as per our interest as Given in Project Statement