CA Project

INSTRUCTION TYPE	OP CODE
R	00
I	01
W	10
C + J	11

R TYPE

OP	RS	RT	RD	FUNCT
2 bits	4 bits	4 bits	4 bits	2 bits

ADD	00
SUB	01
MUL	10
AND	11

I TYPE

OP	RS	RT	IMM	FUNCT
2 bits	2 bits	2 bits	8 bits	2 bits

ADDI	00
ORI	01
SLL	10
SRL	11

W TYPE

OP	RS	RT	IMM	FUNCT
2 bits	2 bits	2 bits	8 bits	2 bits

LW	00
SW	11

C+J TYPE

OP	RS	RT	RD	FUNCT
2 bits	2 bits	4 bits	4 bits	2 bits
OP	ADDRESS	-	-	FUNCT
2 bits	12 BITS	-	-	2 bits

BNE	00
BGT	01
SLT	10
J	11

ALU

ADD	000	ADD,ADDI,LOAD,STORE
SUB	001	SUB,BNE,SLT,BGT
MUL	010	MUL
OR	011	ORI
AND	100	AND
SHIFT R	101	SHR
SHIFT L	110	SHL

INSTRUCTION	ALUOP	REGISTER DEST	ALUSRC	REGWRITE	MEMREAD	MEMWRITE	BRANCH	MEMTORE	SHREG	jump
ADD	000	1	0	1	0	0	0	0	0	0
SUB	001	1	0	1	0	0	0	0	0	0
MUL	010	1	0	1	0	0	0	0	0	0
AND	100	1	0	1	0	0	0	0	0	0
ADDI	000	0	1	1	0	0	0	0	1	0
ORI	011	0	1	1	0	0	0	0	1	0
SHIFT L	110	0	1	1	0	0	0	0	1	0

SHIFT R	101	0	1	1	0	0	0	0	1	0
LOAD	000	0	1	1	1	0	0	1	1	0
STORE	000	X	1	0	0	1	0	X	1	0
BNE	001	X	1	0	0	0	1	X	1	0
BGT	001	X	1	0	0	0	1	X	1	0
SLT	001	1	1	1	0	0	0	0	0	0
jump	000	0	0	0	0	0	0	0	0	1