CSARCH2 Case Study 2

T3 AY2024-2025

1 Test Cases

The test cases are for everyone in general, note that the 1st nibble is marked as ? as you will have to use the equivalent from your project specifications.
Ex. If your project specs indicate that MOV REG, REG is in Op Code 3, then ? is 3.
If there are Op Codes that are not assigned to your group, ignore those test cases, they are for other groups.
Assume all registers are empty (0x0000).

1.1 AND REG, REG

DATA	ADDR
0x1234	0x00AB
0x1357	0x00AC

Code	
MOV R0, 0xAB	0x?0AB
MOV R1, 0xAC	0x?1AC
MOV R2, [R0]	0x?200
MOV R3, [R1]	0x?301
AND R3, R2	0x?302

Results	
R0	0x00AB
R1	0x00AC
R2	0x1234
R3	0x1214
R4	0x0000
R5	0x0000
R6	0x0000
R7	0x0000
R8	0x0000
R9	0x0000
RA	0x0000
RB	0x0000
RC	0x0000
RD	0x0000
RE	0x0000
RF	0x0000

1.2 OR REG, REG

DATA	ADDR
0x1234	0x00AB
0x1357	0x00AC

Code	
MOV R0, 0xAB	0x?0AB
MOV R1, 0xAC	0x?1AC
MOV R2, [R0]	0x?200
MOV R3, [R1]	0x?301
OR R3, R2	0x?302

Results	
R0	0x00AB
R1	0x00AC
R2	0x1234
R3	0x1377
R4	0x0000
R5	0x0000
R6	0x0000
R7	0x0000
R8	0x0000
R9	0x0000
RA	0x0000
RB	0x0000
RC	0x0000
RD	0x0000
RE	0x0000
RF	0x0000

1.3 ADD PTR, REG

DATA	ADDR
0x1F4D	0x00DA

Code	
MOV R0, 0xDA	0x?0DA
MOV R1, [R0]	0x?100
MOV R2, R1	0x?201
ADD R2, R0	0x?200
XOR R1, R1	0x?101
MOV [0xEB], R2	0x?EB2
MOV R3, R0	0x?300
ADD [R3], R2	0x?302
MOV R5, [R3]	0x?503

Results	
R0	0x00DA
R1	0x0000
R2	0x2027
R3	0x00DA
R4	0x0000
R5	0x3F74
R6	0x0000
R7	0x0000
R8	0x0000
R9	0x0000
RA	0x0000
RB	0x0000
RC	0x0000
RD	0x0000
RE	0x0000
RF	0x0000

1.4 ADD REG, PTR

DATA	ADDR
0x1F4D	0x00DA

Code	
MOV R0, 0xDA	0x?0DA
MOV R1, [R0]	0x?100
MOV R2, R1	0x?201
ADD R2, R0	0x?200
XOR R1, R1	0x?101
MOV [0xEB], R2	0x?EB2
MOV R3, R0	0x?300
MOV R5, R2	0x?502
ADD R2, [R3]	0x?203

Results	
R0	0x00DA
R1	0x0000
R2	0x3F74
R3	0x00DA
R4	0x0000
R5	0x2027
R6	0x0000
R7	0x0000
R8	0x0000
R9	0x0000
RA	0x0000
RB	0x0000
RC	0x0000
RD	0x0000
RE	0x0000
RF	0x0000

1.5 ADC REG, REG

DATA	ADDR
0xFFFE	0x000A

Code	
MOV R0, 0x0A	0x?00A
MOV R1, [R0]	0x?100
MOV R2, R1	0x?201
ADC R2, R1	0x?201
ADC R3, R0	0x?300

Results	
R0	0x000A
R1	0xFFFE
R2	0xFFFC
R3	0x000B
R4	0x0000
R5	0x0000
R6	0x0000
R7	0x0000
R8	0x0000
R9	0x0000
RA	0x0000
RB	0x0000
RC	0x0000
RD	0x0000
RE	0x0000
RF	0x0000