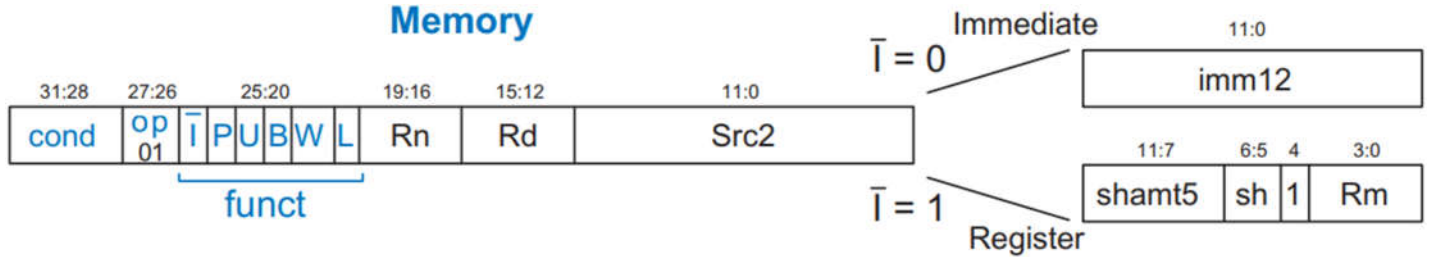


cmd	Name	Description	Operation
0000	AND Rd, Rn, Src2	Bitwise AND	$Rd \leftarrow Rn \& Src2$
0001	EOR Rd, Rn, Src2	Bitwise XOR	$Rd \leftarrow Rn \wedge Src2$
0010	SUB Rd, Rn, Src2	Subtract	$Rd \leftarrow Rn - Src2$
0011	RSB Rd, Rn, Src2	Reverse Subtract	$Rd \leftarrow Src2 - Rn$
0100	ADD Rd, Rn, Src2	Add	$Rd \leftarrow Rn + Src2$
0101	ADC Rd, Rn, Src2	Add with Carry	$Rd \leftarrow Rn + Src2 + C$
0110	SBC Rd, Rn, Src2	Subtract with Carry	$Rd \leftarrow Rn - Src2 - \bar{C}$
0111	RSC Rd, Rn, Src2	Reverse Sub w/ Carry	$Rd \leftarrow Src2 - Rn - \bar{C}$
1000 ( $S = 1$ )	TST Rd, Rn, Src2	Test	Set flags based on $Rn \& Src2$
1001 ( $S = 1$ )	TEQ Rd, Rn, Src2	Test Equivalence	Set flags based on $Rn \wedge Src2$
1010 ( $S = 1$ )	CMP Rn, Src2	Compare	Set flags based on $Rn - Src2$
1011 ( $S = 1$ )	CMN Rn, Src2	Compare Negative	Set flags based on $Rn + Src2$
1100	ORR Rd, Rn, Src2	Bitwise OR	$Rd \leftarrow Rn   Src2$
1101 $I = 1$ OR ( $instr_{11:4} = 0$ ) $I = 0$ AND ( $sh = 00$ ; $instr_{11:4} \neq 0$ ) $I = 0$ AND ( $sh = 01$ ) $I = 0$ AND ( $sh = 10$ ) $I = 0$ AND ( $sh = 11$ ; $instr_{11:7} \neq 0$ )	Shifts: MOV Rd, Src2 LSL Rd, Rm, Rs/shamt5 LSR Rd, Rm, Rs/shamt5 ASR Rd, Rm, Rs/shamt5 ROR Rd, Rm, Rs/shamt5	Move Logical Shift Left Logical Shift Right Arithmetic Shift Right Rotate Right	$Rd \leftarrow Src2$ $Rd \leftarrow Rm \ll Src2$ $Rd \leftarrow Rm \gg Src2$ $Rd \leftarrow Rm \ggg Src2$ $Rd \leftarrow Rn \text{ ror } Src2$
1110	BIC Rd, Rn, Src2	Bitwise Clear	$Rd \leftarrow Rn \& \sim Src2$
1111	MVN Rd, Rn, Src2	Bitwise NOT	$Rd \leftarrow \sim Rn$

## Memory



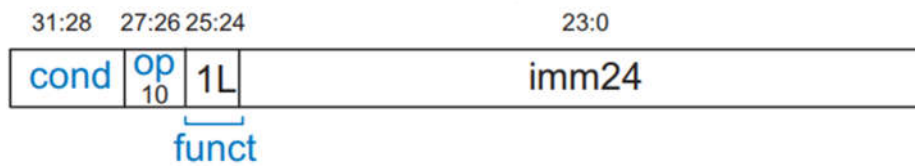
op	B	L	Name	Description	Operation
01	0	0	STR Rd, [Rn, ±Src2]	Store Register	Mem[Adr] ← Rd
01	0	1	LDR Rd, [Rn, ±Src2]	Load Register	Rd ← Mem[Adr]
01	1	0	STRB Rd, [Rn, ±Src2]	Store Byte	Mem[Adr] ← Rd <sub>7:0</sub>
01	1	1	LDRB Rd, [Rn, ±Src2]	Load Byte	Rd ← Mem[Adr] <sub>7:0</sub>

P	W	Indexing Mode
0	1	Not supported
0	0	Postindex
1	0	Offset
1	1	Preindex

## Add/Subtract Immediate/Register Offset

Value	I	U
0	Immediate offset in Src2	Subtract offset from base
1	Register offset in Src2	Add offset to base

## Branch



L	Name	Description	Operation
0	B label	Branch	PC ← (PC+8)+imm24 << 2
1	BL label	Branch with Link	LR ← (PC+8) - 4; PC ← (PC+8)+imm24 << 2

cond	Mnemonic	Name	CondEx
0000	EQ	Equal	Z
0001	NE	Not equal	$\bar{Z}$
0010	CS/HS	Carry set / unsigned higher or same	C
0011	CC/LO	Carry clear / unsigned lower	$\bar{C}$
0100	MI	Minus / negative	N
0101	PL	Plus / positive or zero	$\bar{N}$
0110	VS	Overflow / overflow set	V
0111	VC	No overflow / overflow clear	$\bar{V}$
1000	HI	Unsigned higher	$\bar{Z}C$
1001	LS	Unsigned lower or same	Z OR $\bar{C}$
1010	GE	Signed greater than or equal	$\bar{N} \oplus \bar{V}$
1011	LT	Signed less than	$N \oplus V$
1100	GT	Signed greater than	$\bar{Z}(N \oplus \bar{V})$
1101	LE	Signed less than or equal	Z OR (N ⊕ V)
1110	AL (or none)	Always / unconditional	Ignored