

ARM Assembly Language Cheatsheet (Keil)

1. Data Movement Instructions

- MOV Rd, Rn - Move value from Rn to Rd
- LDR Rd, =value - Load an immediate value into Rd
- LDR Rd, [Rn] - Load from memory address in Rn
- STR Rd, [Rn] - Store value from Rd to memory at Rn
- PUSH {R0-R7} - Push registers to stack
- POP {R0-R7} - Pop registers from stack

2. Arithmetic Instructions

- ADD Rd, Rn, Rm - Add $Rn + Rm \rightarrow Rd$
- SUB Rd, Rn, Rm - Subtract $Rn - Rm \rightarrow Rd$
- MUL Rd, Rn, Rm - Multiply $Rn * Rm \rightarrow Rd$
- ADC Rd, Rn, Rm - Add with carry
- SBC Rd, Rn, Rm - Subtract with carry

3. Logical Instructions

- AND Rd, Rn, Rm - Bitwise AND
- ORR Rd, Rn, Rm - Bitwise OR
- EOR Rd, Rn, Rm - Bitwise XOR
- MVN Rd, Rn - Bitwise NOT of Rn
- LSL Rd, Rn, #n - Logical Shift Left
- LSR Rd, Rn, #n - Logical Shift Right
- ASR Rd, Rn, #n - Arithmetic Shift Right

4. Comparison Instructions

- CMP Rn, Rm - Compare Rn with Rm
- CMN Rn, Rm - Compare Negative ($Rn + Rm$)
- TST Rn, Rm - Test bits (AND)
- TEQ Rn, Rm - Test Equivalence (XOR)

5. Branching / Control Flow

- B label - Unconditional branch
- BL label - Branch with link (function call)

BX Rn - Branch to address in Rn
BEQ label - Branch if equal (Z=1)
BNE label - Branch if not equal (Z=0)
BGT, BLT, etc. - Branch on condition codes

6. Stack Instructions

PUSH {R0-R3} - Push registers to stack
POP {R0-R3} - Pop registers from stack
STMFD, LDMFD - Store/Load multiple (full-desc stack)

7. Miscellaneous

NOP - No operation
SVC #imm - Supervisor call (software interrupt)
BKPT #imm - Breakpoint for debugging
CPSID i - Disable interrupts
CPSIE i - Enable interrupts