ARM Conditional Branch Instructions

Description	Symbol	Java	Instruction	Mnemonic
Equality				
equal	=	==	BEQ	**EQ**ual
not equal	≠	!=	BNE	**N**ot **E**qual
Inequality (unsigned values)				
less than	<	<	BLO (or BCC)	**LO**wer
less than or equal	≤	<=	BLS	**L**ower or **S**ame
greater than or equal	≥	>=	BHS (or BCS)	**H**igher or **S**ame
greater than	>	>	BHI	**HI**gher
Inequality (signed values)				
less than	<	<	BLT	**L**ess **T**han
less than or equal	≤	<=	BLE	**L**ess than or **E**qual
greater than or equal	≥	>=	BGE	**G**reater than or **E**qual
greater than	>	>	BGT	**G**reater **T**han
Flags				
Negative Set			BMI	**MI**nus
Negative Clear			BPL	**PL**us
Carry Set			BCS (or BHS)	**C**arry **S**et
Carry Clear			BCC (or BLO)	**C**arry **Cl**ear
Overflow Set			BVS	o**V**erflow **S**et
Overflow Clear			BVC	o**V**erflow **C**lear
Zero Set			BEQ	**EQ**ual
Zero Clear			BNE	**N**ot **E**qual

Equality and Inequality Mnemonics are based on a previous execution of a compare (CMP) instruction of the form CMP Rx, Ry. For example, BLE label will branch to label if *Rx* is less than or equal to *Ry*.

Pseudo Code Examples

Pseudo Code		ARM Assembly Language

`if (x <= y)`
`{`
`   x = x + 1;`
`}`
	assume x and y are
	signed values
		`        CMP   Rx, Ry`
		`        BGT   label`
		`        ADD   Rx, Rx, #1`
		`Label:`

`if (x < y)`
`{`
`   z = x;`
`}`
`else {`
`   z = y;`
`}`
	assume x and y are
	unsigned values
		`        CMP   Rx, Ry`
		`        BHS   Label1`
		`        MOV   Rz, Rx`
		`        B     Label2`
		`Label1:`
		`        MOV   Rz, Ry`
		`Label2:`

`while (x > 2)`
`{`
`   y = x * y;`
`   x = x - 1;`
`}`
	assume x and y are
	unsigned values
		`Label1:`
		`        CMP   Rx, #2`
		`        BLS   Label2`
		`        MUL   Ry, Rx, Ry`
		`        SUB   Rx, Rx, #1`
		`        B     Label1`
		`Label2:`