

SAL instruction	Operation
move x, y	$x \leftarrow (y)$
add x, y, z	$x \leftarrow (y) + (z)$
sub x, y, z	$x \leftarrow (y) - (z)$
mul x, y, z	$x \leftarrow (y) * (z)$
div x, y, z	$x \leftarrow (y)/(z)$
rem x, y, z	$x \leftarrow (y) \bmod (z)$
cvt x, y	$x \leftarrow (y)$, with type conversion
not x, y	$x \leftarrow \text{NOT } (y)$, bitwise operation
and x, y, z	$x \leftarrow (y) \text{ AND } (z)$, bitwise operation
or x, y, z	$x \leftarrow (y) \text{ OR } (z)$, bitwise operation
nand x, y, z	$x \leftarrow (y) \text{ NAND } (z)$, bitwise operation
nor x, y, z	$x \leftarrow (y) \text{ NOR } (z)$, bitwise operation
xor x, y, z	$x \leftarrow (y) \text{ XOR } (z)$, bitwise operation
xnor x, y, z	$x \leftarrow (y) \text{ XNOR } (z)$, bitwise operation
sll x, y, AMT	$x \leftarrow (y)$, logically left shifted by AMT bits
srl x, y, AMT	$x \leftarrow (y)$, logically right shifted by AMT bits
sra x, y, AMT	$x \leftarrow (y)$, arithmetically right shifted by AMT bits
rol x, y, AMT	$x \leftarrow (y)$, rotated left by AMT bits
ror x, y, AMT	$x \leftarrow (y)$, rotated right by AMT bits
b label	$\text{PC} \leftarrow \text{label}$
j label	$\text{PC} \leftarrow \text{label}$
beq y, z, label	if $(y) = (z)$ then $\text{PC} \leftarrow \text{label}$
bne y, z, label	if $(y) \neq (z)$ then $\text{PC} \leftarrow \text{label}$
blt y, z, label	if $(y) < (z)$ then $\text{PC} \leftarrow \text{label}$
bgt y, z, label	if $(y) > (z)$ then $\text{PC} \leftarrow \text{label}$
ble y, z, label	if $(y) \leq (z)$ then $\text{PC} \leftarrow \text{label}$
bge y, z, label	if $(y) \geq (z)$ then $\text{PC} \leftarrow \text{label}$
beqz y, label	if $(y) = 0$ then $\text{PC} \leftarrow \text{label}$
bnez y, label	if $(y) \neq 0$ then $\text{PC} \leftarrow \text{label}$
bltz y, label	if $(y) < 0$ then $\text{PC} \leftarrow \text{label}$
bgtz y, label	if $(y) > 0$ then $\text{PC} \leftarrow \text{label}$
blez y, label	if $(y) \leq 0$ then $\text{PC} \leftarrow \text{label}$
bgez y, label	if $(y) \geq 0$ then $\text{PC} \leftarrow \text{label}$
la x, label	$x \leftarrow \text{label}$