AT2 Assembly Language

Reference Manual

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SYSTEM (CLOCK, REGISTERS) (PART 1)

REGISTERS

The Virtual Processor is compposed by 8 registers of 16 bits each, rg0 to rg7 (rg7 is reserved to the clock and be/not be modifiable)

Lexical Conventions

Comments

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Labels

lab: ?

Variables

VAR ?

Strings

"" : 0b

Character

'' : 0x

INSTRUCITONS (PART 2)

General-Purpose Instructions

Data Transfer Instructions

The data transfer instructions move data between memory and the general-purpose and segment registers, and perform operations such as conditional moves, stack access, and data conversion.

AT2 Mnemonic	Description
mov	copy the data immediate value and paste it to another location
push	push into stack
pop	pop from stack
pusha	text here
popa	text here

Binary Arithmetic Instructions

The binary arithmetic instructions perform basic integer computions on operands in memory or the general-purpose registers.

AT2 Mnemonic	Description	Example
+	addition	+ [register], 2
-	substraction	- [register], 2
/	division	/ [register], 2
*	multiplication	* [register], 2
%	modulo	% [register], 2
|	or	+ [register], 2
&	and	+ [register], 2
^	xor	+ [register], 2
!	not	+ [register], 2
neg		
++	increment	++ [register]
--	decrement	-- [register]
if	compare	if [register], 2
else	compare	else [register], 4

Logical Instructions

The logical instructions perform basic logical operations on their operands.

AT2 Mnemonic	Description
&&	AND
!	NOT
||	OR

AT2 Mnemonic	Description
^	XOR
<	inferior
>	superior
<=	inferior or equal
>=	superior or equal
=	equal
!=	not equal

Shift Insctructions

AT2 Mnemonic	Description
>>	shift right
<<	shift left

Control Transfer Instructions

The control transfer instructions control the flow of program execution.

AT2 Mnemonic	Description
call	call procedure
goto	go to procedure
ret	return where previous call was use

String Instructions

text here

AT2 Mnemonic	Description
draw	text here

I/O Insctuctions

The input/output instructions transfer data between the processor's I/O ports, registers, and memory.

AT2 Mnemonic	Description
get	text here

Operating System Support Instructions

text here

AT2 Mnemonic	Description
clock	text here
ngr	exit the system call

AT2 Mnemonic	Description

REGISTER 0-7 16bits(7th for clock)

R0 -> ?x R1 -> ?x R2 -> ?x R3 -> ?x R4 -> ?x R5 -> ?x R6 -> ?x R7 -> Reserved for clock

IMPROVEMENT {ELSE IF} STATEMENT

TO IMPLEMENT *END GETCLOCK LABEL:*