

Princeton University  
 COS 217: Introduction to Programming Systems  
 Examples of IA-32 Instruction Operands

Type of Operand	Syntax	Semantics
<b>Immediate</b>	\$5 \$piNumbers	5 piNumbers (i.e., the address denoted by piNumbers)
<b>Register</b>	%eax	reg[EAX]
<b>Memory (Direct Addressing)</b>	piNumbers	mem[piNumbers]
<b>Memory (Full Form)</b>	piNumbers(%eax,%ecx,4)	mem[piNumbers + reg[EAX] + (reg[ECX] * 4)]
<b>Memory (Indirect Addressing)</b>	(%eax)	mem[reg[EAX]]
<b>Memory (Indexed Addressing)</b>	piNumbers(%eax)	mem[piNumbers + reg[EAX]]
<b>Memory (Fancy Indexed Addressing)</b>	piNumbers(,%eax,4)	mem[piNumbers + (reg[EAX] * 4)]
<b>Memory (Base-Pointer Addressing)</b>	-4(%ebp)	mem[-4 + reg[EBP]]