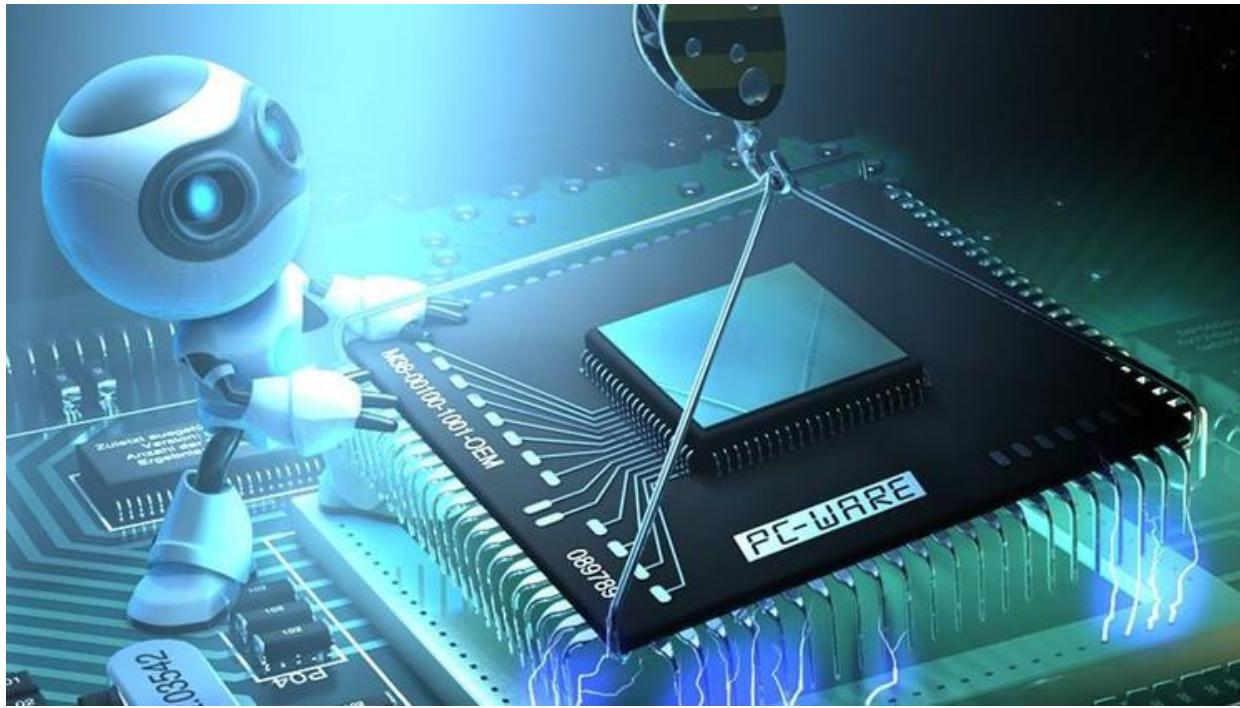


Iterative Statement (FOR)



Iterative Statement (FOR)



MODEL:

```
for (INI; COND; INC) {  
    BODY-FOR  
}
```

Generic translation:

```
INI  
for: evaluate condition  
j(fails) end  
BODY-FOR  
INC  
jmp for  
end:
```

Iterative Statement (FOR)



Example:

```
int sumV(int V[], int N) {  
    int sum, i;  
    sum = 0;  
    for (i=0; i<N; i++)  
        sum = sum + V[i];  
    return sum;  
}
```

sumV (V,5)



7

V

5	2	-4	1	3
---	---	----	---	---

0

1

2

3

4

Iterative Statement (FOR)



Example:

```
int sumV(int V[], int N) {  
    int sum, i;  
    sum = 0;  
    for (i=0; i<N; i++)  
        sum = sum + V[i];  
    return sum;  
}
```

result in % eax

We always return % eax

```
sumV: pushl %ebp  
       movl %esp, %ebp  
       subl $8, %esp  
       movl $0, %eax # sum  
       movl $0, %ecx # i  
for:  cmpl 12(%ebp), %ecx  
       jge end  
       movl 8(%ebp), %edx  
       addl (%edx,%ecx,4), %eax  
       incl %ecx  
       jmp for  
end:  movl %ebp, %esp  
       popl %ebp  
       ret  
# @V → 8[%ebp]  
# N → 12[%ebp]
```

%edx ← @V ≡ V[0]
%eax ← %eax + @V +
i*4