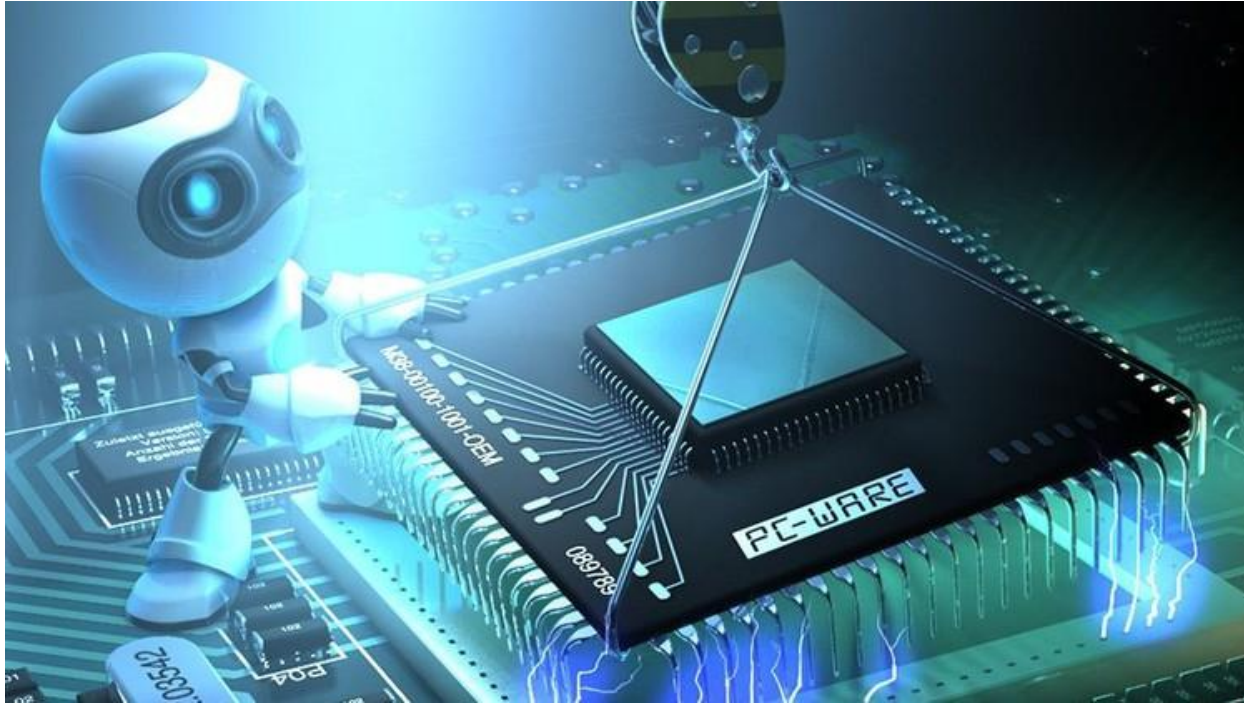


Iterative Statement (FOR)



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