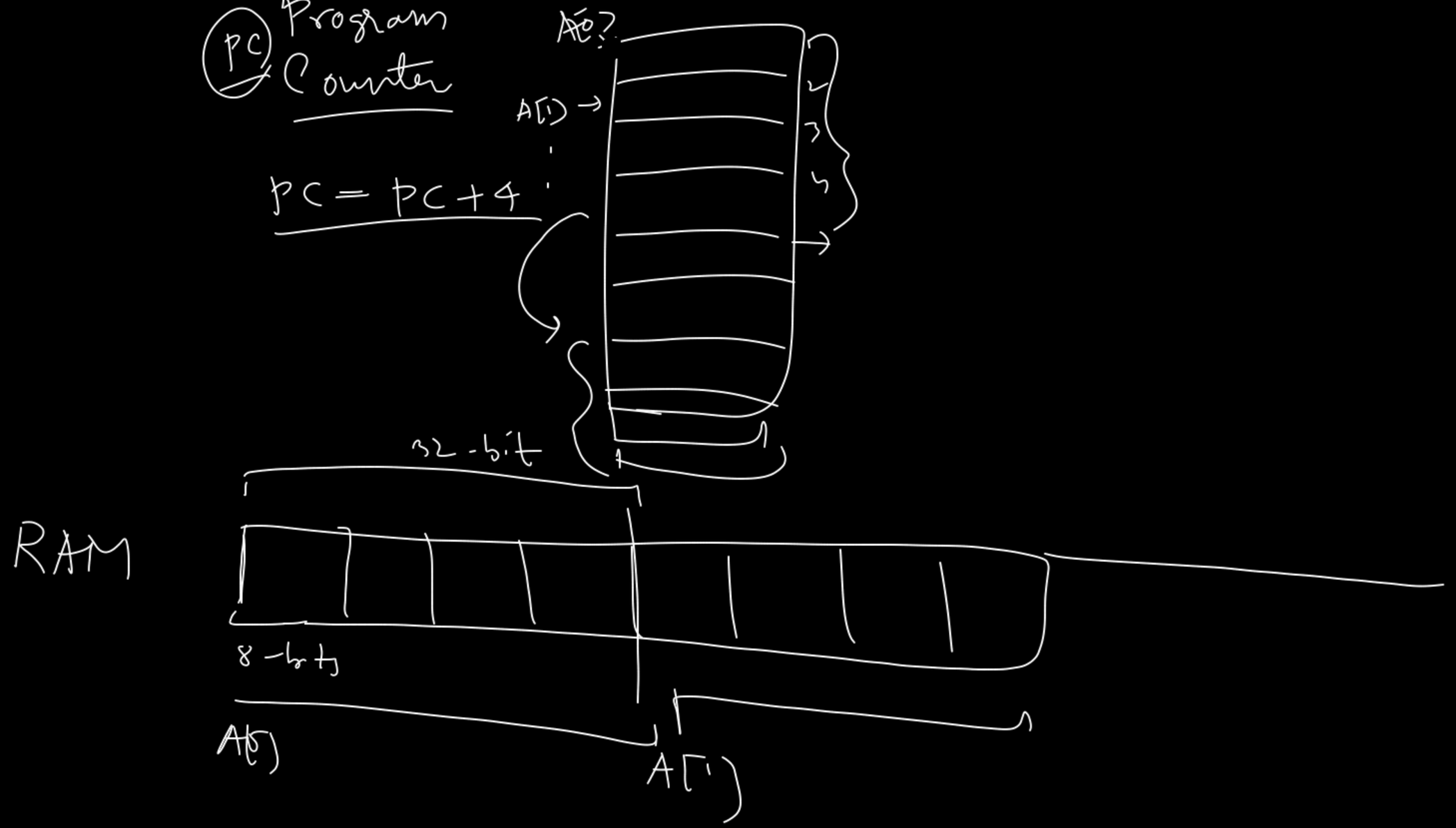
PC Program Counter

A[0]?

A[1] →

PC = PC + 4



16 GB RAM

$2^4 \times 2^{30}$

$1024 = 2^{10}$

$2^{34} / 2^3 \rightarrow$ Many Unique Address 2^{31}

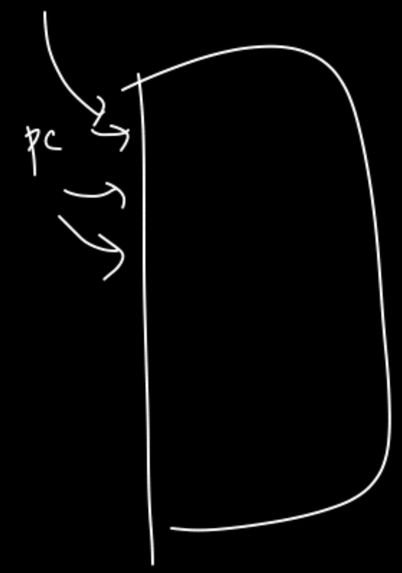
2^3

2^{31}

0101 0101 ~ 1111

16

PC →



Starting Address →

RAM

Program

SSD

I-S function

Loop:

```
i=0
while (A[i] == i){
    A[i] = i*i;
    i = i+1;
}
```

$i \rightarrow \$s_0$
$A \rightarrow \$s_1$

```
Loop:
lw $t0, 0($s1)
beq $t0, $s0, LABEL
J EXIT
LABEL:
mult $t1, $s0, $s0
addi $s0, $s0, 1
sw $t1, 0($s1)
J Loop
EXIT
```

2 3 1 4 1 7

Main( )

function (int a , int b, int c) {

s = a + b - c

Return s

}

| S → $ S_0
| a → $ a_0
| b → $ a_1
| c → $ a_2

v_0 → Return Value

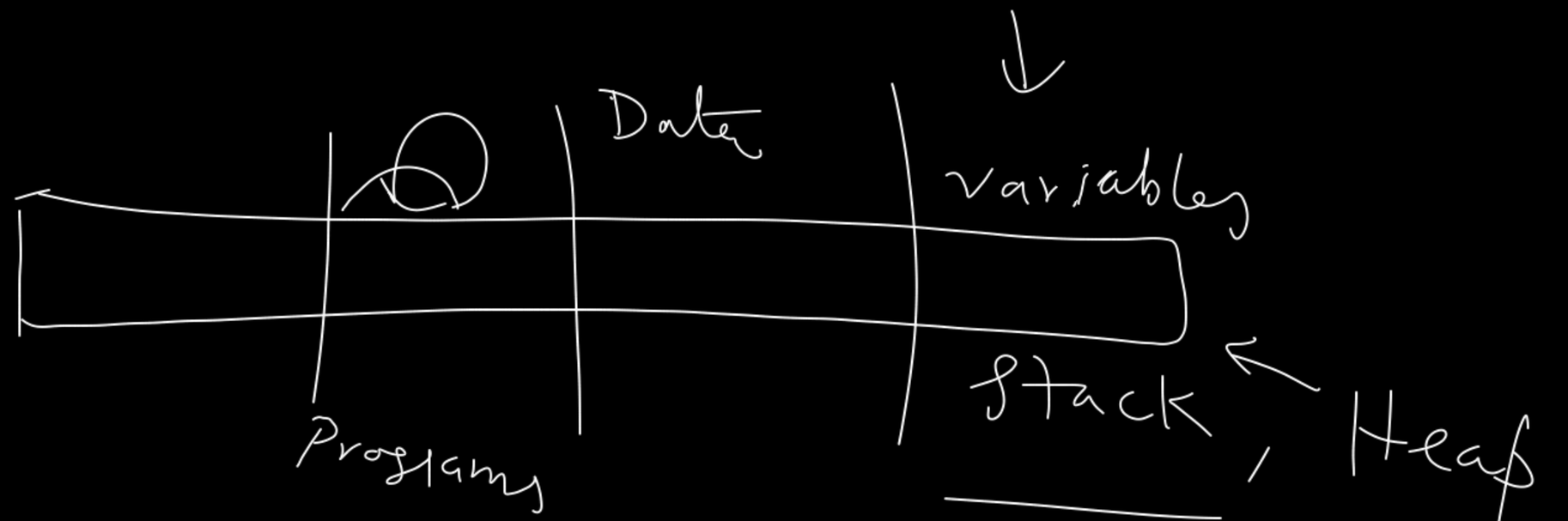
| add $ t_0 $ a_0, $ a_1 → $t_0 = a + b$

| sub $ v_0, $ t_0, $ a_2 → $t_0 = t_0 - c$: (a + b - c)

J $ r_a

→ v_0 → Return value will be stored

$ r_a


Data
variables
Program
stack
Heap