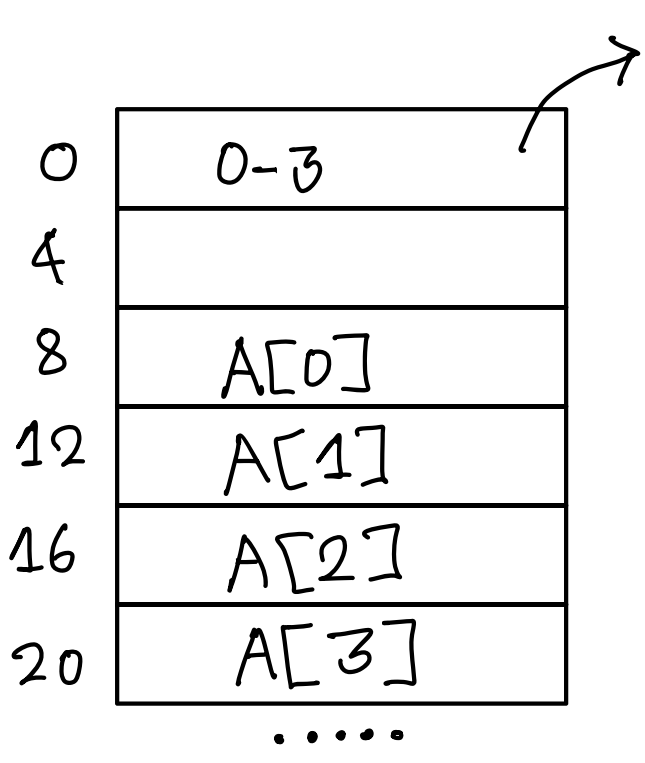
Next Tuesday → First Quiz



4 slot for 32 bits

↓

A[3]

Retrive

Skip 3 Data

3 slots x 4 = 12 Slots

একটা ঘরে 4টা Slot.

DA = BA + Slots

= 8 + 12

= 20 → Destination Address

Register Operands

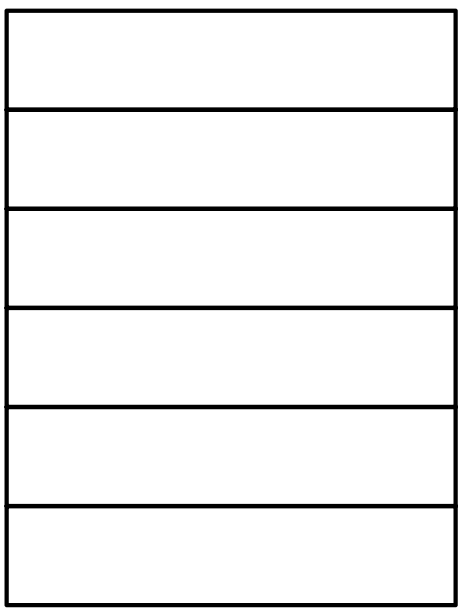
temporary register

↳ temporary values that doesn't required in the future

total 18

- [$t0, $t1, ..., $t9]
- Saved register
  - ↳ saved variables that stored for the future.
- [$s0, $s1, ..., $s9]

Register File



32 registers

32 bit

8 → $t10 (fixed)

C - code

$f = (g+h) - (i+j)$

$a = b + c$

add $a, $b, $c

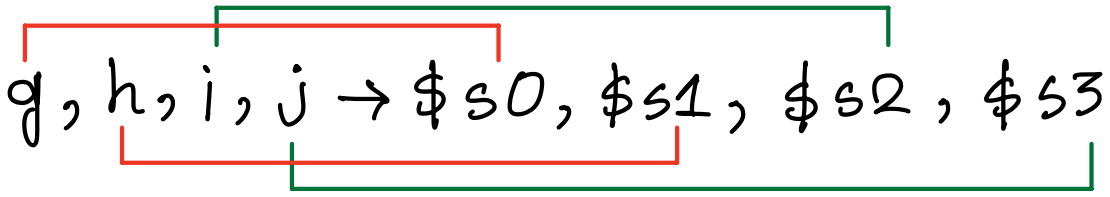
destination source

$a = b + c$

Compiled MIPS Code:

C - code

$f = (g+h) - (i+j)$



$f = \$s4$

→ add $t0, $s0, $s1

→ add $t1, $s2, $s3

→ sub $s4, $t0, $t1

C code

$g = h + A[B]$

g in $s1 ; h in $s2

base address of A in $s3

address = (4 x 8) + $s3

memory to register file → load

load = ——, —— (2 parameters)
word

load word = $s10, 32($s3)
add $s1, $s2, $t0

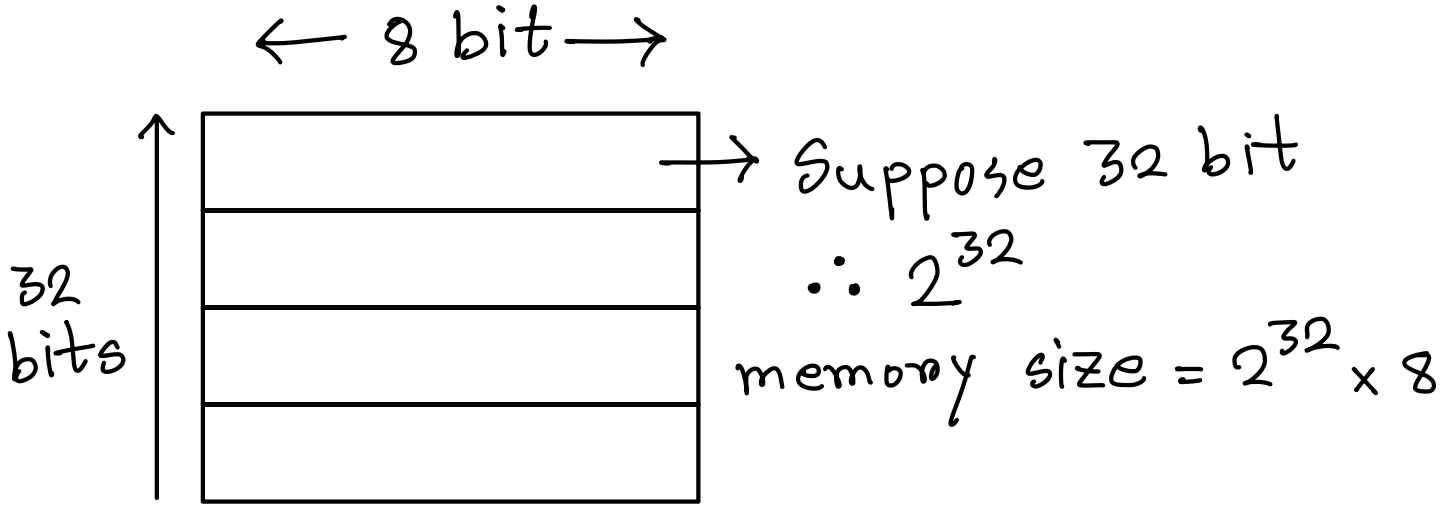
C code:

A[12] = h + A[5] → load → stored in register file

h in $s2; base address of A lin $s3.

memory add = 4x5 + $s3
= 20 + $s3

load $t0, 20($s3)
add $t0, $s2, $0
sw $t0, 48($s3)



if it's adding values with the types of integers,

$f = \$s3 + 4$

$f = \$s3 - 4$

add : $s3, $s3, 4

if subtract →

sub: $s3, $s3, 4

$f = g + h$

↓ ↘

$s2, $s3

$a = b + g$

} register can't be overwritten for $s2.

MIPS register 0 ($zero) is the constant 0.

can't be overwritten

add $t2, $s1, $zero

↓ ↓

7 0

$t2 = $s1 move between register.

20 তম Slide পর্যন্ত Complete