Slide 1

Programming assignment:
Program this way for MAL
You MUST document MAL

```
sub $15, $8, $9  # $15 has f.
add $9, $15, $19  # $9 has e + f.
add $8, $16, $17, $8  # $8 has e + f.

INSTRUCTIONS
#      #
9       #
18  :  #
P6  :  #
 register allocations

MAL code:

f = (e + p) - (f + j);
int f, g, h, i, j;
Required computation (C++):
Example 1:
```

Slide 0

September 7, 1999
S. S. Ray, S. Chakrav
Language Programming
Examples of MIPS Assembly
(One more jump: Jumps are slow)

Larger (code size) than Version II.

\[ \frac{3\%}{3 \text{ instructions}} = \frac{3 \text{ instructions}}{1 \text{ instruction}} \]

Version I is

ALWAYS.

(also called $\$e$ro)$

Also, hardware makes register $0$

\[ \text{Example:} \]

```c
end =

\text{if} \:$16,: 16, 16, 16
\text{add}
\text{ble} \:$16, 8, 0, \text{end}
```

Equivalent MAL segment (Version II)

Slide 4

```
end if
19 \text{ mul}
6 \text{ then add}
4 \text{ end if}
0, 0, \text{ then}

\text{Register assignment:}

\text{Example:}

```
{x + = d * = q;}
\text{if (a < 0) return (a)}
```
Slide 6

au retour...

Slide 6

... au retour...

syscall

0

syscall

out a string

syscall

11 $0,4

ja $a0, start

--start:

@10b --start:

text

data

data segment

text segment

data segment

text segment

---

# 40 - points to the string

# 40 - points to the string

hello world

hello world

---
Slide 9

```c
// y
f
V±e g
```

Slide 8

```c
// y
f
V±e g
```

```c
// y
f
V±e g
```

```c
// y
f
V±e g
```

```c
// y
f
V±e g
```
Slide 10

```plaintext
# end of title temp.4
```

```plaintext
end
end: assert "network in parenthesis is "
`assert: assert "network in parenthesis (Celsius): ":
data.
```

```plaintext
# Mandatory data segment
```

```plaintext
# Mandatory data segment
```

```plaintext
# Mandatory data segment
```

### Mandatory data segment

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University at Albany Computer Science Dept.