18CSR156
18CSR155
18CSR154

Firewall Authentication Keepali... | MIPS Five Stage Pipeline

Not secure | ecs.umass.edu/ece/koren/architecture/windlx/main.html

Instruction	Execution Cycles
FP_Add/Sub	1
FP_Multiply	3
FP_Divide	4
INT_Divide	1

FP_Multiply | F1 | F1 | F1 | Insert Instruction

Data Forwarding | Remove Instruction

Help | Reset Application

	Instruction	CPU Cycles 1	2	3	4	5	6	7	8	9	10	11	12
0	fp_sub (F3, F1, F2)	IF	ID	+|- (f)	MEM	WB							
1	fp_mult (F1, F4, F3)		IF	ID	S	S	* (f)	* (f)	* (f)	MEM	WB		

Step | Execute All Instructions

Potential Hazards:

RAW: Instructions 0 and 1. Register F3.
WAR: Instructions 0 and 1. Register F1.

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*Request this during

156 - C
155 - C
154 - 34
24/11/19

Rajaraman.B

Firewall Authentication Keepal... | MIPS Five Stage Pipeline

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Step | Execute All Instructions

Potential Hazards:

WAR: Instructions 0 and 1. Register F1.

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Rajaraman.B
18 CSE 157

Rajaraman.B
18CSR151
18CSR152
18CSR153.

LITTLE MINION COMPUTER

The little Minion computer is a conceptual model of a simple CPU, introduced by Dr. Stuart Madnick of M.I.T in 1965. Although it seems simplistic, in fact the model captures many important features of real CPU & illustrate these in an accessible way. The conceit is that inside the CPU is a tiny person or minion that runs around data and peryoming the calculations. Inside the box of the CPU are:

100 numbered mailbones.

A calculator

An in-tray

A 2-digit counter

An out-tray

FETCH AND EXECUTE CYCLE

A little minion starts by looking at at the counter yor number, which is a mailbon number.

The minion increement the counter, so that next time minion comes it will be one longer.

The minion goes to the mailbox with the number the minion read on the counter, and read what written on the slip of paper in the mailbox, it's a 3 digit.

The minion takes the approximate action depending on those digits

The minion then start again.

INSTRUCTION SET

Mnemonic	OP code	Description
ADD	1XX	Add
SUB	2XX	Subtract
STO	3XX	Store
LDA	5XX	Add
BR	6XX	Branch
BRZ	7XX	Branch on zero
BRP	8XX	Branch on positive
IN	901	Input
OUT	902	Output
HLT	000	Halt or Stop
DAT		Data storage location

Following is the code to find biggest of two Numbers

```
IN
STO  a
IN
STO  b
```

```
      LDA    a
      SUB    b
      BRP    POS
      LDA    b
      OUT
      HLT
POS   LDA    a
      HLT
a     DAT    000
b     DAT    000
```