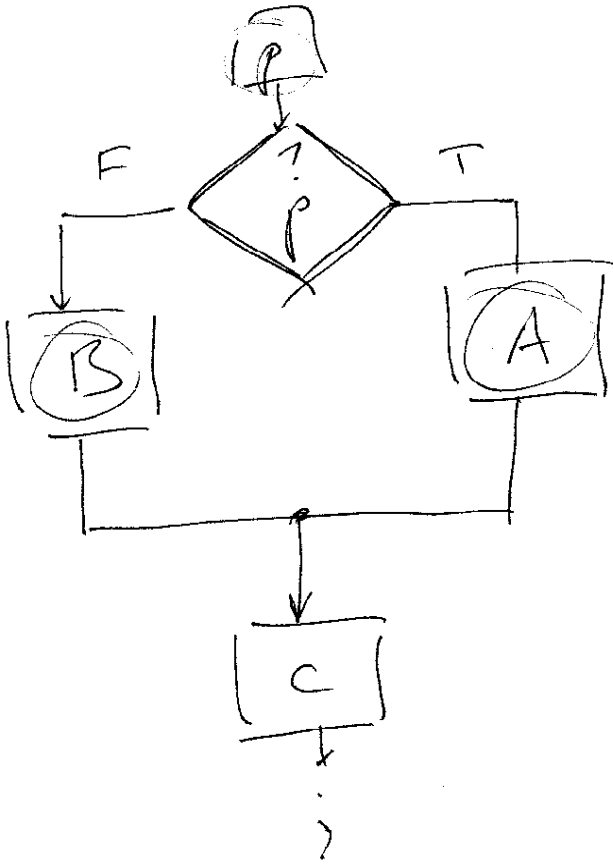


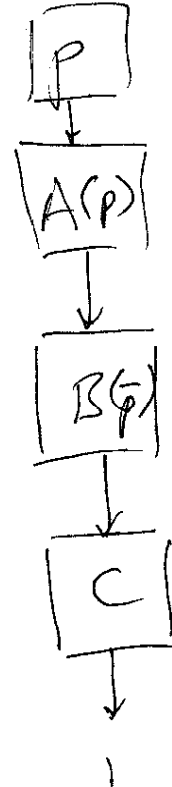
Conditional Branches

6 Feb/1

1. Multiple Pipelines
2. Delayed Branches
3. Predicated Execution



BoS RA0



Control

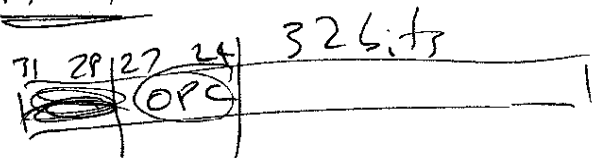
ADD R0, R1, R2, #P

Dependency

Flow Dependency

ARM

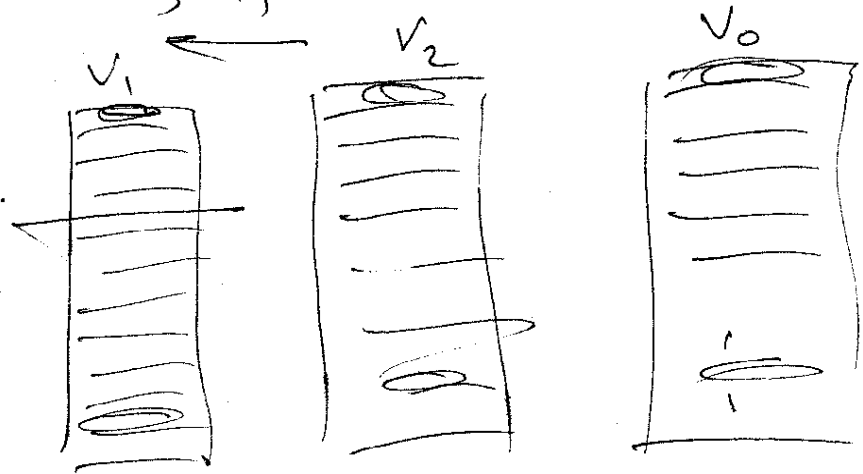
RAW Hazard



6 Feb / 2

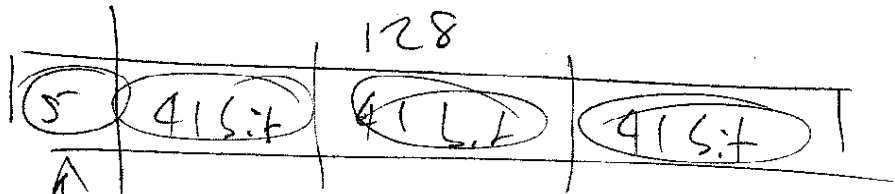
VADD

V_0, V_1, V_2



MASK

VLIW

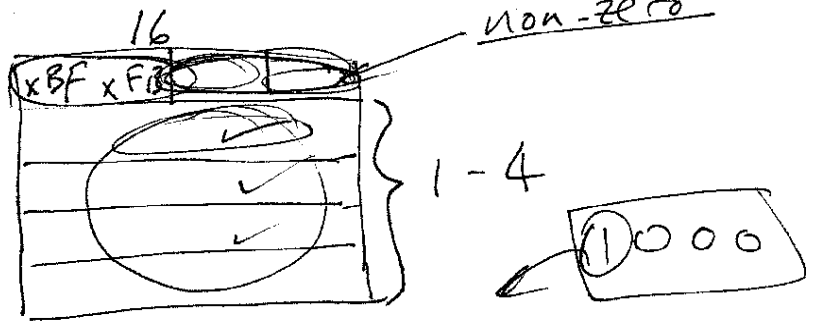


Cytrone
Ala Hifw

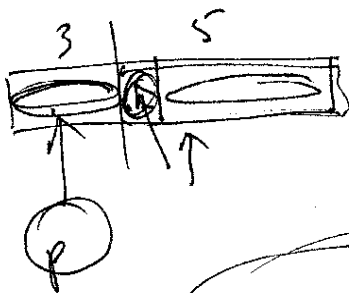
template

EPIC

THUMB



IT



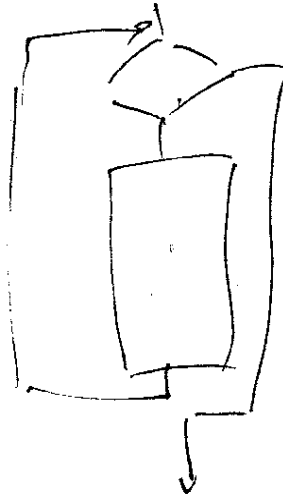
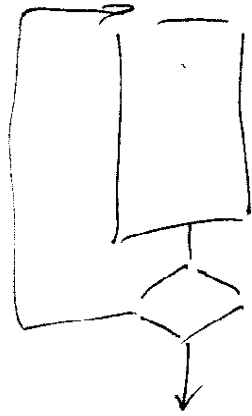
IT-block

THUMB

1	0	1	1
0	1	1	0
1	1	0	0
1	0	0	0
0	0	0	0

Brand Prediction

6 Feb / 3

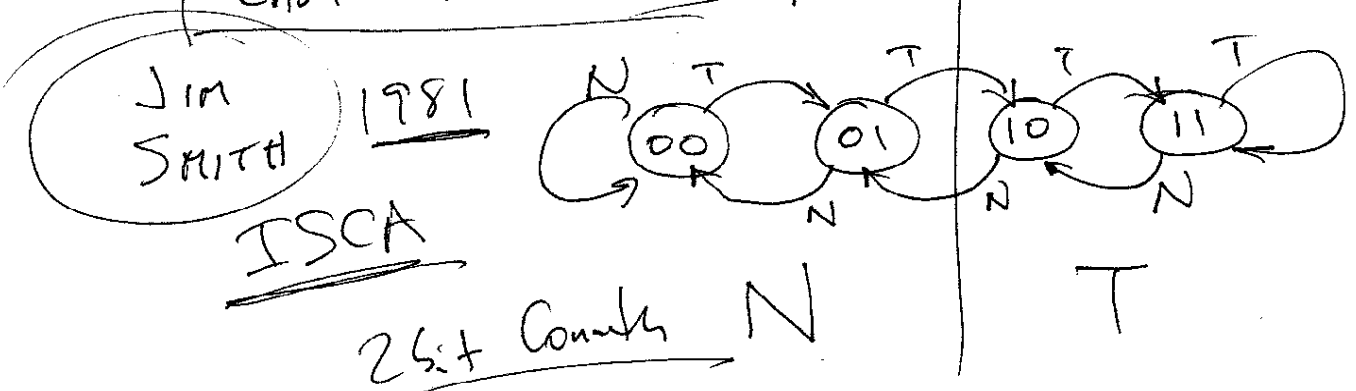


BT FN

97%

SERVIC 98 1/2 %

REPRESENTATIVE
PROFILING



Jim Smith

1981

ISCA

26+ Counties

N

T

1	2	3									13		
F ₁	D ₁	E ₁	S ₁	F ₂	D ₂	E ₂	S ₂	F ₃	D ₃	E ₃	-	-	-
	f ₁	d ₁	e ₁	s ₁	f ₂	d ₂	e ₂						
		f₁	d₁	e₁	s₁	f₂	d₂						
			f ₁	d ₁	e ₁	s ₁							



IN-ORDER

2000 Reps

F ₁	D ₁	E ₁	S ₁
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F ₂	D ₁	E ₁	S ₁
----------------	----------------	----------------	----------------

6 Feb/5

$$\frac{1x}{x4}$$

$$\frac{1x6}{x64}$$

$$\frac{1x\Delta\Delta}{x\Delta\Delta4}$$

$$\frac{1x}{x5}$$

$$\frac{2x}{x5}$$

B
~~A~~

