for equals all we have to do is Compare bne a,b, false for a > b all we have to do is invert a add I then add (-a)+b if there is to carry out than arb for acb we cannuse the Some hard ware idarry out can be used as the result in arb if a is greater than b carry out will be 1 if it isnt o for L=) >= all we need to do is organ == and either zor 7, thus we need 2 digital cirvits that can compute these results and by changing the targets of Example cirvit For equals 7,6

xor and carryout carryout

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carryout with proper routing of = 17/6 and a, and b all would take linstruction

```
(ase 1 i if (a!=b)
                     # branch true
   bne a, b, true b false
                     # branch false
Case 2: if (a!=b)
    bne a, b, false
                     # branch fulsu
    6 true
                      # branch true
 Case 3: If (a < b)
                # invert b
     not b
                 # add I to b
     add c,b,1
     add c, a, c # add a and c
      SII a,31 # Shift left 31
get last bit
      511 c,31
      511 6,31
      and a, a, b
      and a, a, c
                          Swup true and
       bne a, zero, true
                              false for
       b False
                               azb.
                                Combine
                                  Cases for
```

フェ

Ideal Pipeline

					-	sempetaninest	A STATE OF THE PARTY OF THE PAR	THE RESERVE THE PROPERTY OF THE PERSON NAMED IN	SEASON CREEKS IN
Sw R16, 12 (1-6)	IF	ID	EX	MEM	WB				
lw R16, 8(r6)		TF	ID	EX	MEM	WB			Lucason
beg 15, 14, Label		es de desarrollo de la companya de l	IF	ID	EX	MEN	WB		To a transmitted
add 15,17,174				IF	ID	EX	MEM	WB	
51+		and all refunds from more considered in the classic of the classic operations of the classic operations of the		And all the pour trade on the first of the latter of the l	立F	ID	EX	MEN	W
	1		1		1	1			

add and SI+ try to access memory at same time as ID from earlier Comando

	THE RESERVE THE PARTY OF THE PA	Married Street, or other Persons and Street, S	Freezeway Control of the Control of								
Sw. R16, 12 r(6)	IF	ID	EX	MEM	WB		\				
lw R16,8(F6)	The section is a section of the party of the	TF	ID	EX	MeM	WB					Mark of
beg rs, ry, Label		and the state of t	IF	TD	1	MEM			The state of the s		Topological Control
jadd rs, ri, ry	ts and the			×	X	TF	ID	EX	MEM	WB	
51+ 15, 15,14					1+	J.	TF	ID	EX	MEM	M
Wall of the property of the state of the sta	-	The second section of the Second	and the second section of the second	CAMPANIATION OF THE PARTY	erzanea en esta Alexan	a September 2011 and September 2011	A CONTRACTOR	Name and Address of the Owner, where the Owner, which is the Owner, where the Owner, which is the Owner, where the Owner, which is the Owner, whic	1		

in a total of 11 clock cycles is
needed and nops can't solve the
hazard because it is a hardware
Problem and the problem must be
addressed within the hardware

no branches, no hazards, no one ays

Sw	R16, 12(R6)	IF	ID	EX	NEM	WB				
100	R16, 8(R6)		IF	ID	EX	MEM	WB			
Beg	R5, R4, Labe			IF	ID	EX	MEM	WB		
Add	R5, R1, R4				エF	ID	EX	MEM	WB	
SI+	RS, RIS, RU					IF	ID	EX	MEM	WB

a cycles

overlap EX/MEM

1	Sw R16, 12(R6) IF	ID	EXME	WB				APPRIL A ASSESSMENT APPRIL
	IW R16, 8(R6)	エヒ	ID	EXMEM	WB			
,	Beg RS, R4, Label	-	IF	ID	EX/MEM	WB		
4271/contract	Add R5, R1, R4			TF	ID	MEM	WB	
0520	SI+ RSJR15/R4				ゴヤ	FD	EX/MEM	WB

8 Cycles

i. The speedup is 9/8

Pipeline with Stall-on-brandies determined In ID Stage

Sw RIG	12(RE)	IF	ID	EXE	MEM	WB						
Lw			IF	ID	X	EXE	MEM	WB		The state of the s		uman militar a primer e el Yarro de pel englini Medecelestas y talent tibel
BEQ				IF	Œ	X	EXE	MEM	WB			The construction of a fine of the construction
Add					IF	ID	Χ	EXE	MEM	WB		and a finish manager of the second over the second of the second objects of the second o
SLT	-					IF	ID	X	EXE	MEM	WB	mentana atamatanan ibasah yakan persecualah

of clock cycles is 10

... the Speedup is $\frac{11}{10} = 1.1$

the latency of MEM is 190 and Ex is 150

The latency of MEM is big

190+20PS = 210 # Staye & X 210 = 1680PS

200 PS 5 stare 9 X 200 = 1800PS

Speed
$$UP = \frac{1800}{1680} = 1.07$$

"Speed 2700 = 0.92 Up 2400

200 x 12 = 2400 Exicution time