Full Pipeline Examples

Vithout					.W (+2)	<i>61</i>			
add	F	D	E	M	w				
sub	<u> </u>	F			D	E	М	W	
				<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
				LW	(+2)				
lw	F	D	Е	М	W				
sub		F			D	Е	М	W	
•									
			Non	-LW befo	re Branch	(+2)	_	_	
add	F	D	E	M	W				
beq		F			D	Е	M	W	
						- •			
,, T				1	Branch (+	2)	1		
add	F	D	E	M	W	_			
beq		F			D	Е	M	W	
				After Dr	on ch / 12\				
hoa				I	anch (+3)	l	l		
		1 0		1 1/1	1 \//				
beq add	F	D	E	M	F	D	E	М	W
add		ng but No		ranchin	F	D	E	M	W
add				ranchin	F	D	E	M	W
add Vith Fo	rwardin	ng but No	Early B	ranchin	F g W (+0)	D W	E	M	W
add Vith Fo	rwardin	ng but No	Early B	ranching Non-L M E	F W (+0) W		E	M	W
add Vith Fo add sub	rwardin F	D F	E D	ranching Non-L M E	F W (+0) W M		E	M	W
add Vith Fo add sub	rwardin	D F	E D	ranching Non-L M E	F W (+0) W M (+1)	W		M	W
add Vith Fo add sub	rwardin F	D F	E D	ranching Non-L M E	F W (+0) W M		E	M	W
add Vith Fo add sub	rwardin F	D F	E D	ranchina Non-L M E	F W (+0) W (+1) W E	W		M	W
add Vith Fo add sub	rwardin F	D F	E D Non	ranching Non-L M E LW M	F W (+0) W (+1) W E	W		M	W
add Vith Fo add sub Iw sub add	rwardin F	D F D D	E D Non	ranching Non-L M E LW M -LW befo	F W (+0) W (+1) W E re Branch	W (+0)		M	W
add Vith Fo add sub	rwardin F	D F	E D Non	ranching Non-L M E LW M	F W (+0) W (+1) W E	W		M	W
add Vith Fo add sub Iw sub add	rwardin F	D F D D	E D Non E D	ranching Non-L M E LW M -LW befo M E	F W (+0) W (+1) W E re Branch W M	(+0)		M	W
add Vith Fo add sub Iw sub add beq	rwardin F	D F D D	E D Non E D	ranching Non-L M E LW M -LW before	F W (+0) W (+1) W E re Branch W M	(+0)		M	W
add Vith Fo add sub Iw sub add beq add	rwardin F F	D F D F	E D Non E D	ranching Non-L M E LW M -LW befo M E	F W (+0) W (+1) W E re Branch W M	(+0)		M	W
add Vith Fo add sub Iw sub add beq	rwardin F F	D F D F	E D Non E D	ranching Non-L M E LW M -LW before	F W (+0) W (+1) W E re Branch W M Branch (+	(+0) W	W	M	W
add Vith Fo add sub Iw sub add beq add	rwardin F F	D F D F	E D Non E D	ranching Non-L M E LW M -LW before M E	F W (+0) W (+1) W E re Branch W M Branch (+	(+0) W	W	M	W
add Vith Fo add sub Iw sub add beq add	rwardin F F	D F D F	E D Non E D	ranching Non-L M E LW M -LW before M E	F W (+0) W (+1) W E re Branch W M Branch (+	(+0) W	W	M	W

With Forwarding and Early Branching

	Non-LW (+0)											
add	F	D	Е	М	W							
sub		F	D	E	М	W						

	LW (+1)										
lw	F	D	Е	М	W						
sub		F	D		Е	М	W				

	Non-LW before Branch (+1)										
add	F	D	Е	М	W						
beq		F		D	Е	М	W				

	LW before Branch (+2)										
add	add F D E M W										
beq		F			D	Е	М	W			

	After Branch (+1)										
beq F D E M W											
add			F	D	Е	М	W				

Branch

	Branch without Early Branch with Branch Prediction (Taken) (+3)											
beq	F	D	Е	М	W							
inst1		F	D	Е	M	W						
inst2			F	D	Е	M	\ \\					
inst3				F	D	Е	M	W				
label					F	D	Е	М	W			

	Branch with Early Branch with Branch Prediction (Taken) (+1)										
beq	F	D	Е	М	W						
inst1		F	D	Е	M	W					
label			F	D	Е	М	W				

	Branch with(out) Early Branch with Branch Prediction (Not Taken) (+0)										
beq	F	D	Е	М	W						
inst1		F	D	Е	М	W					
inst2											