

```
DADDIU R3, R1, \#-2
0x04:
      BNEZ
           R3,L1
                  ;branch b1 (aa!=2)
      DADD R1, R0, R0 ; aa=0
L1:
      DADDIU R3, R2, \#-2
0x10:
           R3,L2
                   ; branch b2 (bb!=2)
      BNEZ
      DADD R2, R0, R0 ; bb=0
L2:
      DSUBU R3,R1,R2
                    ;R3=aa-bb
0x1C:
     BEQZ R3,L3
                  ;branch b3 (aa==bb)
```

GHR PC[3:2]

0
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0
0

Predicted NT



```
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0 \times 04:
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      DADD
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```

	0000	0
→	0001	1
	0010	0
	0011	0
	0100	0
	0101	0
	0110	0
	0111	0
	1000	0
	1001	0
	1010	0
	1011	0
	1100	0
	1101	0
	1110	0
	1111	0

Actually T

GHR



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0 \times 04:
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                            ; branch b1 (aa!=2)
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       DADD
                            ;aa=0
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0x10:
       BNEZ
             R3,L2
                            ;branch b2 (bb!=2)
             R2,R0,R0
                        ;bb=0
       DADD
L2:
       DSUBU R3,R1,R2
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Predicted NT

GHR



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0 \times 04:
       BNEZ
              R3,L1
                             ;branch b1 (aa!=2)
             R1,R0,R0
       DADD
                             ;aa=0
       DADDIU R3, R2, \#-2
L1:
0 \times 10:
              R3,L2
                             ; branch b2 (bb!=2)
       BNEZ
              R2,R0,R0
       DADD
                         ; bb=0
L2:
       DSUBU R3, R1, R2
                         ;R3=aa-bb
0x1C:
       BEQZ
              R3,L3
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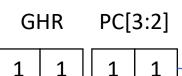
0000	0
0001	1
0010	0
0011	0
0100	1
0101	0
0110	0
0111	0
1000	0
1001	0
1010	0
1011	0
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GHR



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L1:
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            R3,L2
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Predicted NT



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0 \times 10:
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L2:
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Actually NT

GHR



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              R1,R0,R0
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       DADDIU R3, R2, \#-2
L1:
0 \times 10:
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                             ; branch b2 (bb!=2)
       BNEZ
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L2:
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0000	0
0001	1
0010	0
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Predicted NT

GHR



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       DADDIU R3, R2, \#-2
L1:
0 \times 10:
             R3,L2
                            ;branch b2 (bb!=2)
       BNEZ
            R2,R0,R0
                        ;bb=0
       DADD
L2:
       DSUBU R3,R1,R2
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Actually NT

GHR



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                           ;branch b1 (aa!=2)
            R1,R0,R0
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       DADD
L1:
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0x10:
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             R3,L2
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             R3,L3
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GHR PC[3:2]

Pr	ed	ict	ed	NT
	- 0			

0000	0
0001	1
0010	0
0011	0
0100	1
0101	0
0110	0
0111	0
1000	0
1001	0
1010	0
1011	0
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                           ;aa=0
      DADD
      DADDIU R3, R2, \#-2
L1:
0 \times 10:
            R3,L2
                           ; branch b2 (bb!=2)
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L2:
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0000	0
0001	1
0010	0
0011	0
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Actually NT

GHR



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       DADD
                           ;aa=0
      DADDIU R3, R2, \#-2
L1:
0 \times 10:
             R3,L2
                           ;branch b2 (bb!=2)
      BNEZ
           R2,R0,R0
                       ; bb=0
       DADD
L2:
      DSUBU R3,R1,R2
                       ;R3=aa-bb
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      BEQZ
             R3,L3
                           ;branch b3 (aa==bb)
```

GHR PC[3:2]

0 0 1 1

0000	0
0001	1
0010	0
0011	0
0100	1
0101	0
0110	0
0111	0
1000	0
1001	0
1010	0
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L1:
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Actually T

GHR