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CSE341

Note: beqout=1 means a==b and beqOP, flow means overflow, out is my output.

Critical path and delay:

The maximum 12

Gate cost of the alu:

gate cost (number): 740

Zero delay:

input size:30

each instruction has 5 input

010=Add 110=Sub 111=SLT 100=BEQ 001=OR 000=AND

0 a= x b= x opcode=xxx out= X flow=x beqout=x

100 a= 10 b= 136 opcode=010 out= 146 flow=0 beqout=0

200 a= -474 b= -115 opcode=010 out= -589 flow=0 beqout=0

300 a= 5 b= -239 opcode=010 out= -234 flow=0 beqout=0

400 a= 530 b= 956 opcode=010 out= 1486 flow=0 beqout=0

500 a= -986 b= 316 opcode=010 out= -670 flow=0 beqout=0

600 a= -207 b= 738 opcode=110 out= -945 flow=0 beqout=0

700 a= -751 b= 928 opcode=110 out= -1679 flow=0 beqout=0

800 a= 200 b= 851 opcode=110 out= -651 flow=0 beqout=0

900 a= -235 b= -167 opcode=110 out= -68 flow=0 beqout=0

1000 a= 176 b= 279 opcode=110 out= -103 flow=0 beqout=0

1100 a= 909 b= 603 opcode=111 out= 0 flow=0 beqout=1

1200 a= 819 b= 784 opcode=111 out= 0 flow=0 beqout=1

1300 a= -207 b= -771 opcode=111 out= 0 flow=0 beqout=1

1400 a= -101 b= -642 opcode=111 out= 0 flow=0 beqout=1

1500 a= 348 b= 391 opcode=111 out= 1 flow=0 beqout=0

1600 a= 750 b= -786 opcode=100 out= 1536 flow=0 beqout=0

1700 a= 51 b= -939 opcode=100 out= 990 flow=0 beqout=0

1800 a= 232 b= 483 opcode=100 out= -251 flow=0 beqout=0

1900 a= -119 b= -548 opcode=100 out= 429 flow=0 beqout=0

2000 a= -998 b= -258 opcode=100 out= -740 flow=0 beqout=0

2100 a= 10 b= -442 opcode=001 out= -434 flow=0 beqout=0

2200 a= 925 b= 572 opcode=001 out= 957 flow=0 beqout=0

2300 a= 725 b= -831 opcode=001 out= -299 flow=0 beqout=0

2400 a= 223 b= 345 opcode=001 out= 479 flow=0 beqout=0

2500 a= 861 b= 902 opcode=001 out= 991 flow=0 beqout=0

2600 a= 814 b= -476 opcode=000 out= 548 flow=0 beqout=0

2700 a= 455 b= -704 opcode=000 out= 320 flow=0 beqout=0

2800 a= 365 b= 328 opcode=000 out= 328 flow=0 beqout=0

2900 a= 267 b= 453 opcode=000 out= 257 flow=0 beqout=0

3000 a= 561 b= -610 opcode=000 out= 16 flow=0 beqout=0

Temporal\_unit\_delay:

100 a= 335 b= -13 opcode=010 out= 322 delay=53

200 a= -185 b= -918 opcode=110 out= 733 delay=13

300 a= 879 b= -842 opcode=010 out= 37 delay=59

400 a= 220 b= 56 opcode=110 out= 164 delay=52

500 a= 61 b= 800 opcode=111 out= 1 delay=55

600 a= -168 b= 334 opcode=001 out= -162 delay=49

700 a= 348 b= 280 opcode=111 out= 0 delay=61

800 a= -204 b= -491 opcode=100 out= 287 delay=16

900 a= 663 b= -904 opcode=000 out= 16 delay=52

1000 a= -826 b= -838 opcode=100 out= 12 delay=52

1100 a= 385 b= -335 opcode=000 out= 129 delay=55

Alu\_unit\_5000:

Input size: 5000

Average delay: 11.977