Cycle: operation

1: load 0 into register 5

2: load 2 into register 6

3: load 2 into register 7

4: load 2 into register 8

5: load 2 into register 9

6: load 2 into register 18

7: load 2 into register 19

8: load 2 into register 20

9: load 2 into register 21

10: load 2 into register 22

11: load 2 into register 23

12: load 2 into register 24

13: load 2 into register 25

14: load 2 into register 26

15: load 2 into register 27

16: load 2 into register 28

17: load 2 into register 29

18: load 2 into register 30

19: load 2 into register 31

20: add register 24 with immediate store in register8

10+ 10101 = 10111

21: logical left shift register 5 by immediate store in register31

Shift 10 by 11101 = 1000000000000000000000000000000

Giving all 0

22: xor register 20 with immediate store in register20

00010

11011 =

11001

23: shift logical right register 18 by immediate store in register5

10 by 110 = 0

24: shift arithmetic right register24 by immediate store in register19

10 by 10000001000 = 0

25: or register20 with immediate store in register26

11001

11100 =

11101

26: and register30 with immediate store in register21

00010

11001 =

00000

27: add register 22 with register 20 store in register24

10 +11001 = 11011

28: subtract register25 with register 8 store in register21

10 – 10111 = 1111111111111111111111111111111111111111111111111111111111101011

29: logical left shift register 9 by register 28 store in register18

10 by 10 = 1000

30: xor register 7 with register7 store in register8

10

10 =

0

31: shift logical right register25 by register5 store in register21

10 shift by 0 = 10

32: shift arithmetic right register22 by register30 store in register19

10 by 10 = 0

33: or register20 with register6 store in register5

11001

10 =

11011

34: and register30 with register29 store in register21

10

10 =

10

35: branch if register7 equal to register31

Sub 10 and 000000000000000000000000000000001000000000000000000000000000000

1111111111111111111111111111111111000000000000000000000000000010

Not equal NO BRANCH

36: Brach if register21 equal to register28

Sub 10 and 10 = 0

Equal BRANCH

37. Branch if register21 not equal to register28

Sub 10 and 10 = 0

Equal NO BRANCH

38: branch if register5 not equal to register6

Sub 11011 and 10 0000000000000000000000000000000000000000000000000000000000011001

With carry

Not equal BRANCH

39: branch if register21 is less than register28

10 sub 10 = 0

Not less than NO BRANCH

40: branch if register 7 is less than register31

Sub 10 and 000000000000000000000000000000001000000000000000000000000000000

1111111111111111111111111111111111000000000000000000000000000010

No carry

Less than BRANCH

41: Store what is in register23 in data\_mem address 6

Store 10

42: store what is in register9 in data\_mem address7

Store 10

43: store what is in register 25 in data\_ mem address 30

Store 10

44: load from data\_mem address6 to register8

Load 10

45: load from data\_mem address7 to register24

Load 10

46: load from data\_mem addres30 to register31

Load 10

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