

## Assignment Done By:

**Mohit Sharma(2019CS10372)**

**Vivek Choudhary(2019CS10413)**

## Test Cases

// Test case 1 (all operator)

addi \$t0, \$zero, 100

addi \$t1, \$zero, 50

add \$t3, \$t0, \$t1

sub \$t4, \$t0, \$t1

mul \$t5, \$t0, \$t1

slt \$t6, \$t0, \$t1

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// Test case 2 (lw, sw)

lw \$t2, 124

sw \$t3, 256

lw \$t4, 0(\$sp)

sw \$t5, 0(\$sp)

=====

// Test case 3 (infinite loop)

addi \$t0, \$zero, 123

addi \$t1, \$zero, 321

label\_1:

    j label\_2

label\_2:

    j label\_1

=====

// Test case 4 (general)

addi \$t0, \$zero, 52

addi \$t1, \$zero, 25

addi \$s0, \$zero, 25

add \$t2, \$t0, \$t1

sub \$t3, \$t0, \$t1

mul \$t4, \$t0, \$t1

bne \$s0, \$t1, label\_bne

beq \$t0, \$t4, label\_beq

slt \$s1, \$s0, \$t0

slt \$v1, \$t4, \$t2

j label\_j

label\_beq:

mul \$s1, \$s1, \$s1

label\_bne:

add \$s3, \$t4, \$t2

j label\_j

test:

addi \$t9, \$zero, 100

j end

label\_j:

sub \$t8, \$t1, \$t0

j test

end:

=====

// Test case 5(empty)

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// Test case 6 (general with lw and sw)

sw \$t0, 124

lw \$t1, 56

add \$s1, \$t0, \$t1

sub \$s2, \$s1, \$t1

mul \$s3, \$s2, \$s1

beq \$s2, \$t0, label\_1

bne \$s3, \$s2, label\_2

label\_2:

add \$s1, \$s1, \$s1

lw \$t4, 0(\$sp)

label\_1:

sub \$s2, \$s2, \$s2

sw \$t4, 0(\$sp)

=====

// Test case 7(extra arguments)

addi \$t0, \$zero, 21, \$t3

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// Test case 8 (less arguments)

addi \$t0, \$zero

=====

// Test case 9(add overflow)

addi \$t0, \$zero, 10000

addi \$t1, \$zero, 10000

addi \$t2, \$zero, 20

mul \$t0, \$t0, \$t1

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mul $t0, $t2, $t0
add $t2, $t0, $t0
=====

// Test case 10(mul overflow)
addi $t0, $zero, 10000
addi $t1, $zero, 10000
addi $t2, $zero, 20
mul $t0, $t0, $t1
mul $t0, $t2, $t0
mul $t2, $t0, $t0
=====

// Test case 11(sub overflow)
addi $t0, $zero, 10000
addi $t1, $zero, 10000
addi $t2, $zero, 20
mul $t0, $t0, $t1
mul $t0, $t2, $t0
addi $t5, $zero, -1
mul $t1, $t0, $t5
sub $t2, $t0, $t1
=====

// Test case 12(addi to large constant)
addi $t0, $zero, 2000000000
addi $t1, $t0, 2000000000
=====

// Test case 13(label used without defining)
sw $t0, 124
lw $t1, 56
add $s1, $t0, $t1
sub $s2, $s1, $t1
mul $s3, $s2, $s1

```

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beq $s2, $t0, label_1
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bne $s3, $s2, label_2
```