**CS3339 Summer 2020 Assignment 1**

**A screenshot of a cell phone

Description automatically generated**

SW $t0 0x0000 $sp {sw rt, offset(base) [I-Type]}

|  |  |  |  |
| --- | --- | --- | --- |
| 101011 | 11101 | 01000 | 0000000000000000 |

SW (6) $sp (5) $t0 (5) Offset (16)

Binary: 10101111101010000000000000000000

Hex: 0xafa80000

bne $s0,$s1,endLoop1

BNE $s0 $s1 0x0004 // 4 below

{BNE rs, rt, offset(base) [I-Type]}

|  |  |  |  |
| --- | --- | --- | --- |
| 000101 | 10000 | 10001 | 0000000000000000 |

BNE(6) $s0 (5) $s1 (5) Offset (16)

Binary: 00010110000100010000000000000100

Hex: 0x16110004

subi $s0,$s0,1

//addi $1,$0,1

//sub $16,$16,$1

ADDI $at $zero 0x0001 {{ADDI rt, rs, immediate [I-Type]}

|  |  |  |  |
| --- | --- | --- | --- |
| 001000 | 0-0000 | 00001 | 0000000000000001 |

ADDI(6) $ZERO(5) $at (5) Offset (16)

Binary: 00100000000000010000000000000001

Hex: 0x20010001

SUB $s0 $s0 $at {SUB rd, rs, rt [R-Type]}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 000000 | 10000 | 00001 | 10000 | 00000 | 100010 |

Special (6) rs(5) rt (5) rd(5) 0(5) SUB(6)

Binary: 00000010000000011000000000100010

Hex: 0x02018022

nand $s3,$s1,$s2 // and $s3,$s1,$s2 // not $s3,$s3  
AND $s3 $s1 $s2 {AND rd, rs, rt [R-Type]}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 000000 | 10001 | 10010 | 10011 | 00000 | 100100 |

Special (6) rs(5) rt (5) rd(5) 0(5) SUB(6)

Binary: 00000010001100101001100000100100

Hex: 0x02329824

NOR $s3 $s3 $zero {NOR rd, rs, rt [R-Type]}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 000000 | 10011 | 00000 | 10011 | 00000 | 100111 |

Special (6) rs(5) rt (5) rd(5) 0(5) SUB(6)

Binary: 00000010011000001001100000100111

Hex: 0x02609827

jal start //start address 1000

0000000000000001000000000000 //Binary

00000000000000010000000000 //Removed 2 digits

000011 // jal instruction

Binary : 00001100000000000000010000000000 // combined instruction

Hex : c000400

JR $ra {JR rs, [R-Type]}

|  |  |  |  |
| --- | --- | --- | --- |
| 000000 | 11111 | 000000000000000 | 001000 |

special(6) $ra(5) $0 (15) JR(6)

Binary: 00000011111000000000000000001000

Hex: 0x03e00008

A picture containing bird, tree

Description automatically generated

3402000A ORI $v0 $Zero 0x000A

20020004 ADDI $v0 $Zero 0x0004

8C900000 LW $s0 0x0000 $a0

AC900000 SW $s0 0x0000 $a0

114CFFFB J 0x0100009

8F898000 LW $t1 0x8000 $gp

03E00008 JR $ra