```
.data
        displayAddress:  .word   0x10008000
        #Colors
        birdColour: .word       0xffff00 # yellow
        backgroundColour: .word  0x00ccff         # blue
        darkBlue: .word 0x00008B
        purple: .word 0x6A0DAD
        pipeColour: .word       0x00ff00 # green


        #game info
        size: .word 4094
        strokeAdd: .word 0xffff0000 # address of if a key is pressed
        contentAdd: .word 0xffff0004 # address of ascii code of which button pressed

.text

main:

        lw $t0, displayAddress
        lw $t1, backgroundColour
        lw $t2, birdColour
        lw $t3, pipeColour
        lw $a0, size
        li $a1, 0



# draw the background
```

```
background:
        add $a2, $t0, $a1
        sw $t1, 0($a2)
        addi $a1, $a1, 4
        bge $a1, $a0, draw        # branch to bird
        j background              # keep drawing background

draw: # draw the starting level of the game
        li $t9, 0
        #hard oode draw bird
        addi $t7, $t0 1952
        sw $t2 0($t7)
        sw $t2 4($t7)
        sw $t2 8($t7)
        sw $t2 12($t7)
        sw $t2 -128($t7)
        sw $t2 128($t7)
        sw $t2 136($t7)
        sw $t2 -120($t7)



        addi $t4, $t0, 1536
        addi $t5, $t0, 2688

        li $t6,68                 # start pos
        addi $a0 ,$t0, 0 # Initialize beginning
        addi $a1, $t4, 0         # Initialize end

        jal drawPipe

        addi $a0, $t5, 0 # Initialize beginning
        addi $a1, $t0, 3969      # Initialize end
        jal drawPipe              #jump and link(making function
call)

        j game

drawPipe:

        startOutloop:
        bge $a0, $a1, endOutloop
                                 #Inner loop
        add $a2, $a0, $t6        # Initialize beginning
        addi $a3, $a2,20          # Initialize end
        startInloop:
        bge $a2, $a3, endInloop
        sw $t3,($a2)
        addi $a2, $a2, 4          # Increment counter
        b startInloop
        endInloop:               #Inner loop
        addi $a0, $a0, 128        # Increment counter
        b startOutloop
        endOutloop:
        jr $ra

drawMap:
        startOutloop1:
        bge $a0, $a1, endOutloop1
                                 #Inner loop
        add $a2, $a0, 0     # Initialize beginning
        addi $a3, $a2,200      # Initialize end
        startInloop1:
        bge $a2, $a3, endInloop1
        sw $t1,($a2)
        addi $a2, $a2, 4    # Increment counter
        b startInloop1
        endInloop1:              #Inner loop
        addi $a0, $a0, 128    # Increment counter
        b startOutloop1
        endOutloop1:

        jr $ra


ereasePipe:
        EstartOutloop:
        bge $a0, $a1, EendOutloop
                                 #Inner loop
        add $a2,$a0, $t6       # Initialize beginning
        addi $a3, $a2, 20        # Initialize end
        EstartInloop:
        bge $a2, $a3, EendInloop
        sw $t1,($a2)
        addi $a2, $a2, 4         # Increment counter
        b EstartInloop
        EendInloop:              #Inner loop
        addi $a0, $a0, 128       # Increment counter
        b EstartOutloop
        EendOutloop:
        jr $ra
game:
        #sleep
        li $v0, 32
        li $a0, 800
        syscall


        li $a1, 0xffff0000
        lw $a2, ($a1)
        beqz $a2, drop           # drop the bird if no input
        li $a1, 0xffff0004
        lw $a2, ($a1)
        beq $a2, 102, jump       # jump the bird if input f


drop:
#erease bird
        sw $t1 0($t7)
        sw $t1 4($t7)
        sw $t1 8($t7)
        sw $t1 12($t7)
        sw $t1 –128($t7)
        sw $t1 128($t7)
        sw $t1 136($t7)
        sw $t1 –120($t7)

        #erease pipe
        addi $a0, $t0, 0
        move $a1, $t4
        jal ereasePipe

        move $a0, $t5
        addi $a1, $t0, 3969
        jal ereasePipe
```

```
#DRAWMAP



jal loadColor

addi $a0, $t0, 0 # Initialize beginning

addi $a1, $t0, 3969

jal drawMap


#draw bird

sw $t2 128($t7)

sw $t2 132($t7)

sw $t2 136($t7)

sw $t2 140($t7)

sw $t2 0($t7)

sw $t2 256($t7)

sw $t2 264($t7)

sw $t2 8($t7)

addi $t7,$t7,128

# redraw pipe


addi $t6, $t6, -4


move $a0, $t0

move $a1, $t4

jal drawPipe
```

```
        move $a0, $t5
        addi $a1, $t0, 3969
        jal drawPipe

        bge $t7,$t5, Reinitialize
        ble $t6, 0, new
        j game

loadColor:
        beq $t9,0, loadPurple
        beq $t9,1, loadDark
        beq $t9,2, loadBlue
        load:
        move $t1, $a1
        jr $ra
loadPurple:
        lw $a1, purple
        li $t9,1
        j load
loadDark:
        lw $a1, darkBlue
        li $t9,2
        j load
loadBlue:
        lw $a1, backgroundColour
        li $t9,0
        j load
jump:
#erease bird
        sw $t1 0($t7)
        sw $t1 4($t7)
        sw $t1 8($t7)
        sw $t1 12($t7)
        sw $t1 -128($t7)
        sw $t1 128($t7)
        sw $t1 136($t7)
        sw $t1 -120($t7)

        #erease pipe
        addi $a0, $t0, 0
        move $a1, $t4
        jal ereasePipe

        move $a0, $t5
        addi $a1, $t0, 3969
        jal ereasePipe

        jal loadColor
        addi $a0, $t0, 0
        addi $a1, $t0, 3969

        jal drawMap


        #draw

        sw $t2 -128($t7)

        sw $t2 -124($t7)

        sw $t2 -120($t7)

        sw $t2 -116($t7)

        sw $t2 -256($t7)

        sw $t2 0($t7)

        sw $t2 8($t7)

        sw $t2 -248($t7)

        addi $t7,$t7,-128


        # redraw pipe

        addi $t6, $t6, -4


        move $a0, $t0

        move $a1, $t4

        jal drawPipe


        move $a0, $t5

        addi $a1, $t0, 3969

        jal drawPipe
```

```
        ble $t7,$t4, Reinitialize
        ble $t6, 0, new
        j game

new:
        # erease
        addi $a0, $t0, 0
        move $a1, $t4
        jal ereasePipe


        move $a0, $t5
        addi $a1, $t0, 3969
        jal ereasePipe



        li $t6, 68  # change position of pipe


        addi $a0 ,$t0, 0
        addi $a1, $t4, 0


        jal drawPipe


        addi $a0, $t5, 0
        addi $a1, $t0, 3969
        jal drawPipe
        j Reinitialize

Reinitialize:
        add $a1, $zero, $zero
        addi $t5, $zero, 4094
End_background:
        add $t6, $t0, $a1
        sw $t1, 0($t6)
        addi $a1, $a1, 4
        bge $a1, $t5, Bye_text
        j End_background

Bye_text:
        sw $t2, 1444($t0)
        sw $t2, 1572($t0)
        sw $t2, 1700($t0)
        sw $t2, 1828($t0)
        sw $t2, 1832($t0)
        sw $t2, 1836($t0)
        sw $t2, 1840($t0)
        sw $t2, 1956($t0)
        sw $t2, 2084($t0)
        sw $t2, 2212($t0)
        sw $t2, 2340($t0)
        sw $t2, 2344($t0)
        sw $t2, 2348($t0)
        sw $t2, 2352($t0)
        sw $t2, 2224($t0)
        sw $t2, 2096($t0)
        sw $t2, 1968($t0)
        sw $t2, 1852($t0)
        sw $t2, 1864($t0)
        sw $t2, 1980($t0)
        sw $t2, 2108($t0)
        sw $t2, 2236($t0)
        sw $t2, 2240($t0)
        sw $t2, 2244($t0)
        sw $t2, 1992($t0)
        sw $t2, 2120($t0)
        sw $t2, 2248($t0)
        sw $t2, 2376($t0)
        sw $t2, 2504($t0)
        sw $t2, 2500($t0)
        sw $t2, 2496($t0)
        sw $t2, 2492($t0)

        sw $t2, 1876($t0)
        sw $t2, 2004($t0)
        sw $t2, 2132($t0)
        sw $t2, 2260($t0)
        sw $t2, 2388($t0)
        sw $t2, 1880($t0)
        sw $t2, 1884($t0)
        sw $t2, 1888($t0)
        sw $t2, 2136($t0)
        sw $t2, 2140($t0)
        sw $t2, 2144($t0)
        sw $t2, 2392($t0)
        sw $t2, 2396($t0)
        sw $t2, 2400($t0)

        sw $t2, 1768($t0)
        sw $t2, 1772($t0)
        sw $t2, 1896($t0)
        sw $t2, 1900($t0)
        sw $t2, 2024($t0)
        sw $t2, 2028($t0)
        sw $t2, 2152($t0)
        sw $t2, 2156($t0)
        sw $t2, 2280($t0)
        sw $t2, 2284($t0)

        sw $t2, 2536($t0)
        sw $t2, 2540($t0)
        sw $t2, 2664($t0)
```

```
        sw $t2, 2668($t0)
done:
        li $v0, 10 # terminate the program gracefully
        syscall
```