

Adam Hanna-HW 5 Code

.text

.set noreorder

.globl main

.ent main

#include <xc.h>

main:

sw zero, TRISA

sw zero, ANSELA

not t0, zero

sw t0, TRISB

sw zero, ANSELB

sw zero, TRISC

sw zero, ANSELC

li t0, _PORTA_RA0_MASK

li t1, _PORTC_RC9_MASK

li t5, _PORTB_RB7_MASK

li t6, _PORTB_RB13_MASK

li t7, 4

la t8, periods

pollS1:

lw t2, PORTB

andi t3, t2, _PORTB_RB7_MASK

bne t3, zero, copyS1

nop

beq t3, t5, pollS2

nop

jal delay

nop

lw t2, PORTB

andi t3, t2, _PORTB_RB7_MASK

bne t3, zero, copyS1

nop

sw t0, LATAINV

copyS1:

add t5, t3, zero

pollS2:

andi t4, t2, _PORTB_RB13_MASK

bne t4, zero, copyS2

nop

beq t4, t6, pollS1

nop

jal delay

nop

lw t2, PORTB

```
andi  t4, t2, _PORTB_RB13_MASK
bne   t4, zero, copyS2
nop
```

```
sw    t1, LATCINV
```

copyS2:

```
add   t6, t4, zero
```

```
j     pollS1
nop
```

updatePeriod:

```
bne   t5, zero, decreasePeriod
bne   t4, zero, increasePeriod
j     spin
nop
```

decreasePeriod:

```
subi  t7, t7, 1
bgtz  t7, spin
li    t7, 0
j     spin
nop
```

increasePeriod:

```
addi  t7, t7, 1
bltz  t7, spin
li    t7, 4
```

```
j spin  
nop
```

spin:

```
lw t9, 0(t8)  
jal delay  
move t9, t7  
j spin  
nop
```

periods:

```
.word 75000  
.word 50000  
.word 100000  
.word 125000
```

.ent delay

delay:

```
add t1, t9, zero
```

loop:

```
addi t1, t1, -1  
bne t1, zero, loop  
nop  
jr ra  
nop
```

.end delay

.end main

