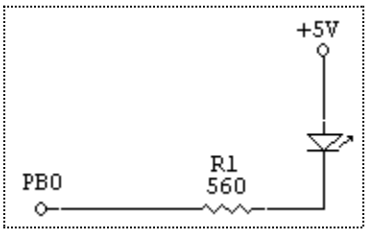
ET 386L
Lab 5 Output Operations, Port B, Timing Loop

1. Assemble the following circuit:



2. Create, assemble, make appropriate comments and save the following program:

```
        ORG    $0100  ;
REP     LDAA   #$00   ;
        STAA   $1004  ;
        LDX    #$02     ;
HIGH    DEX             ;
        BNE    HIGH     ;

        LDAA   #$FF   ;
        STAA   $1004  ;
        LDX    #$02   ;
LOW     DEX           ;
        BNE    LOW    ;
        JMP    REP    ;
        END
```

3. Use the trace method to execute the program very slowly.

4. When does the program exit the High or Low loop?

5. What is the purpose of the index register?

6. What is V_{PB0} when the LED is on?

7. What is V_{PBO} when the LED is off?

8. When the LED is on, what is the current through R1?
   Is this current within specifications?

7. New commands:

LDX:	load index register x
DEX:	decrement index register x
BNE:	branch if not equal to zero
JMP:	jump