16.317: Microprocessor Systems Design I

Spring 2013

Lecture 30: Key Questions
April 19, 2013

1. Explain the basic operation of stepper motors.

2. Explain how a microcontroller can be used to control a bipolar stepper motor.

3. Explain the key parts of the Lab 4 code shown below (initialization not shown).

```
Loop:                                   ;  Return Here for Next Value
  movlw   HIGH ((250000 / 5) + 256)
  movwf   Dlay
  movlw   LOW ((250000 / 5) + 256)
  addlw   -1                            ;  250 ms Delay
  btfsc   STATUS, Z
  decfsz  Dlay, f
  goto    $ - 3

  movf    i, w
  call    SwitchRead
  movwf   PORTC

  incf    i, f              ;  i = (i + 1) % 8;
  bcf     i, 3
  goto    Loop

SwitchRead:
  addwf   PCL, f              ;  Staying in First 256 Instructions
 dt     b'011100', b'010100', b'000100', b'100100'
 dt     b'100000', b'101000', b'111000', b'011000'
  end
```