```
//  Servo_1
/*  Control a servo motor by sweeping up and down through the
 *  control range.
 *
 *  Servo motors respond to a waveform with pulses repeating with a
 *  period of 20 milliseconds (50 Hz). The speed and direction of the
 *  motor are controlled by varying the width of the pulses between
 *  one and two milliseconds (1,000 to to 2,000 microseconds, µsec).
 *  For continuous rotation servo motors, 1000 µsec pulses cause rotation
 *  at full speed in one direction and 2000 µsec pulses cause rotation at
 *  full speed in the opposite direction. At about 1500 µsec, the rotation
 *  stops.
 *  This code also demonstrates the use of the Serial console for displaying
 *  diagnostic information as the code exectutes.
 */

#include <Servo.h>
#include <Serial.h>

#define motor_pin  9

int  usec  =  1500;// Pulse width, in µsec
int  delta  =  100;// Amount to increment or decrement pulse width

Servo motor;

//  setup()
//  ------------------------------------------------------------------------
void setup()
{
  motor.attach(motor_pin);
  Serial.begin(9600);
  //  Leonardo boards need this loop:
  while (!Serial)
  {
     ;// Do nothing
  }
}

//  loop()
//  ------------------------------------------------------------------------
void loop()
{
  motor.writeMicroseconds(usec);
  usec = usec + delta;

  //  Test if limit of control range has been reached
  if (usec > 2000 || usec < 1000)
  {
    //  Reverse direction
    delta = - delta;
  }
```

```
  //  Debugging information
  Serial.print(usec);
  Serial.print(' ');
  Serial.println(delta);

  delay(200);
}
```

```
// Servo_2
/* Control a servo motor using an analog input, such as a potentiometer
 * to control speed and direction.
 */

#include <Servo.h>
#include <Serial.h>

#define input_pin  3
#define motor_pin  9

int usec = 1500;

Servo motor;

void setup()
{
  motor.attach(motor_pin);
  Serial.begin(9600);
}

void loop()
{
   usec = 1000 +analogRead(input_pin);
  Serial.print(' ');
  Serial.println(usec);
  motor.writeMicroseconds(usec);
  delay(200);
}
```