Reach2

CODE

```
int numSegments = 10;
float[] x = new float[numSegments];
float[] y = new float[numSegments];
float[] angle = new float[numSegments];
float segLength = 26;
float targetX, targetY;

void setup() {
  size(640, 360);
  strokeWeight(20.0);
  stroke(255, 100);
  x[x.length-1] = width/2;     // Set base x-coordinate
  y[x.length-1] = height;  // Set base y-coordinate
}

void draw() {
  background(126);

  reachSegment(0, mouseX, mouseY);
  for(int i=1; i<numSegments; i++) {
    reachSegment(i, targetX, targetY);
  }
  for(int i=x.length-1; i>=1; i--) {
    positionSegment(i, i-1);
  }
  for(int i=0; i<x.length; i++) {
    segment(x[i], y[i], angle[i], (i+1)*2);
  }
}

void positionSegment(int a, int b) {
  x[b] = x[a] + cos(angle[a]) * segLength;
  y[b] = y[a] + sin(angle[a]) * segLength;
}

void reachSegment(int i, float xin, float yin) {
  float dx = xin - x[i];
  float dy = yin - y[i];
  angle[i] = atan2(dy, dx);
  targetX = xin - cos(angle[i]) * segLength;
  targetY = yin - sin(angle[i]) * segLength;
}

void segment(float x, float y, float a, float sw) {
  strokeWeight(sw);
  pushMatrix();
  translate(x, y);
  rotate(a);
  line(0, 0, segLength, 0);
  popMatrix();
}
```

```
/**
 * Reach 2
 * based on code from Keith Peters.
 *
 * The arm follows the position of the
mouse by
 * calculating the angles with atan2().
 */
```