keypad code

```
int K = 8;  // K pin of  4*4 button pad is connected to the 4th digital pin of
Arduino mega.
int L = 9;  // L pin of  4*4 button pad is connected to the 5th digital pin of
Arduino mega.
int M = 10;  // M pin of  4*4 button pad is connected to the 6th digital pin of
Arduino mega.
int N = 11;  // N pin of  4*4 button pad is connected to the 7th digital pin of
Arduino mega.

int O = 4;  // O pin of  4*4 button pad is connected to the 8th digital pin of
Arduino mega.
int P = 5;  // P pin of  4*4 button pad is connected to the 9th digital pin of
Arduino mega.
int Q = 6; // Q pin of  4*4 button pad is connected to the 10th digital pin of
Arduino mega.
int R = 7; // R pin of  4*4 button pad is connected to the 11th digital pin of
Arduino mega.

int D0 = 0; // D0 pin of 4511 is connected to the 0th digital pin of arduino
int D1 = 1; // D1 pin of 4511 is connected to the 1st digital pin of arduino
int D2 = 2; // D2 pin of 4511 is connected to the 2nd digital pin of arduino
int D3 = 3; // D3 pin of 4511 is connected to the 3rd digital pin of arduino

int LE = 12; // LE pin of 4511 is connected to the 12th digital pin of arduino

int O_value;
int P_value;
int Q_value;
int R_value;

int read_value;


// the setup routine runs once when you press reset:
void setup2() {

  pinMode(K, OUTPUT);     // Declare K pin as OUTPUT
  pinMode(L, OUTPUT);     // Declare L pin as OUTPUT
  pinMode(M, OUTPUT);     // Declare M pin as OUTPUT
  pinMode(N, OUTPUT);     // Declare N pin as OUTPUT

  pinMode(O, INPUT);      // Declare O pin as INPUT
  pinMode(P, INPUT);      // Declare P pin as INPUT
  pinMode(Q, INPUT);      // Declare Q pin as INPUT
  pinMode(R, INPUT);      // Declare R pin as INPUT


  pinMode(LE, OUTPUT);     // Declare LE pin as OUTPUT
```

```
  pinMode(D0, OUTPUT);    // Declare D0 pin as OUTPUT
  pinMode(D1, OUTPUT);    // Declare D1 pin as OUTPUT
  pinMode(D2, OUTPUT);    // Declare D2 pin as OUTPUT
  pinMode(D3, OUTPUT);    // Declare D3 pin as OUTPUT


// INITIALLY SEND LOW TO OUTPUT PINS (K, L, M and N)

 digitalWrite(K, LOW);
 digitalWrite(L, LOW);
 digitalWrite(M, LOW);
 digitalWrite(N, LOW);

}



void seven_segment_display(int number)
{
/*  if(number==1)
  {*/
     digitalWrite(LE, LOW);
     digitalWrite(D0, HIGH);
     digitalWrite(D1, LOW);
     digitalWrite(D2, LOW);
     digitalWrite(D3, LOW);
//  }
  return;
}



// the loop routine runs over and over again forever:
void loop2() {

  label:

  // INITIALLY SEND LOW TO OUTPUT PINS (K, L, M and N) IN THE WHILE LOOP

  digitalWrite(K, LOW);
  digitalWrite(L, LOW);
  digitalWrite(M, LOW);
  digitalWrite(N, LOW);

  O_value=digitalRead(O);  // READ VALUE FROM O
  P_value=digitalRead(P);  // READ VALUE FROM P
  Q_value=digitalRead(Q);  // READ VALUE FROM Q
  R_value=digitalRead(R);  // READ VALUE FROM R
```

```
  if(O_value==0)   // IF ANY SWITCH IN SWITCHES 1, 4, 7 and '*' IS PRESSED O_value
WILL BECOME 0
  {

    //  SEND LOW TO K AND HIGH TO L, M AND N
    digitalWrite(K, LOW);
    digitalWrite(L, HIGH);
    digitalWrite(M, HIGH);
    digitalWrite(N, HIGH);

    // IF VALUE READ FROM O IS 0, SWITCH PRESSED WILL BE 1
    read_value=digitalRead(O);
    if(read_value==0)
    {
      // Display 1 in seven segment display, D3 D2 D1 D0 (0 0 0 1)
      digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
      digitalWrite(D0, HIGH);
      digitalWrite(D1, LOW);
      digitalWrite(D2, LOW);
      digitalWrite(D3, LOW);
      digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
      delay(500);
      goto label;
    }

    //  SEND LOW TO L AND HIGH TO K, M AND N
    digitalWrite(K, HIGH);
    digitalWrite(L, LOW);
    digitalWrite(M, HIGH);
    digitalWrite(N, HIGH);

    // IF VALUE READ FROM O IS 0, SWITCH PRESSED WILL BE 4
    read_value=digitalRead(O);
    if(read_value==0)
    {
      // Display 4 in seven segment display, D3 D2 D1 D0 (0 1 0 0)
      digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
      digitalWrite(D0, LOW);
      digitalWrite(D1, LOW);
      digitalWrite(D2, HIGH);
      digitalWrite(D3, LOW);
      digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
      delay(500);
      goto label;
    }

    //  SEND LOW TO M AND HIGH TO K, L AND N
```

```
    digitalWrite(K, HIGH);
    digitalWrite(L, HIGH);
    digitalWrite(M, LOW);
    digitalWrite(N, HIGH);

    // IF VALUE READ FROM O IS 0, SWITCH PRESSED WILL BE 7
    read_value=digitalRead(O);
    if(read_value==0)
    {
      // Display 7 in seven segment display, D3 D2 D1 D0 (0 1 1 1)
      digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
      digitalWrite(D0, HIGH);
      digitalWrite(D1, HIGH);
      digitalWrite(D2, HIGH);
      digitalWrite(D3, LOW);
      digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
      delay(500);
      goto label;
    }

    //  SEND LOW TO N AND HIGH TO K, L AND M
    digitalWrite(K, HIGH);
    digitalWrite(L, HIGH);
    digitalWrite(M, HIGH);
    digitalWrite(N, LOW);

    // IF VALUE READ FROM O IS 0, SWITCH PRESSED WILL BE '*'
    read_value=digitalRead(O);
    if(read_value==0)
    {
      goto label;
    }

  }


  else if(P_value==0)  // IF ANY SWITCH IN SWITCHES 2, 5, 8 and 0 IS PRESSED P_value
WILL BECOME 0
  {

    //  SEND LOW TO K AND HIGH TO L, M AND N
    digitalWrite(K, LOW);
    digitalWrite(L, HIGH);
    digitalWrite(M, HIGH);
    digitalWrite(N, HIGH);

    // IF VALUE READ FROM P IS 0, SWITCH PRESSED WILL BE 2
    read_value=digitalRead(P);
```

```
if(read_value==0)
{
  // Display 2 in seven segment display, D3 D2 D1 D0 (0 0 1 0)
  digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
  digitalWrite(D0, LOW);
  digitalWrite(D1, HIGH);
  digitalWrite(D2, LOW);
  digitalWrite(D3, LOW);
  digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
  delay(500);
  goto label;
}


//  SEND LOW TO L AND HIGH TO K, M AND N
digitalWrite(K, HIGH);
digitalWrite(L, LOW);
digitalWrite(M, HIGH);
digitalWrite(N, HIGH);


// IF VALUE READ FROM P IS 0, SWITCH PRESSED WILL BE 5
read_value=digitalRead(P);
if(read_value==0)
{
  // Display 5 in seven segment display, D3 D2 D1 D0 (0 1 0 1)
  digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
  digitalWrite(D0, HIGH);
  digitalWrite(D1, LOW);
  digitalWrite(D2, HIGH);
  digitalWrite(D3, LOW);
  digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
  delay(500);
  goto label;
}

//  SEND LOW TO M AND HIGH TO K, L AND N
digitalWrite(K, HIGH);
digitalWrite(L, HIGH);
digitalWrite(M, LOW);
digitalWrite(N, HIGH);

// IF VALUE READ FROM P IS 0, SWITCH PRESSED WILL BE 8
read_value=digitalRead(P);
if(read_value==0)
{
  // Display 8 in seven segment display, D3 D2 D1 D0 (1 0 0 0)
  digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
```

```
      digitalWrite(D0, LOW);
      digitalWrite(D1, LOW);
      digitalWrite(D2, LOW);
      digitalWrite(D3, HIGH);
      digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
      delay(500);
      goto label;
    }

    //  SEND LOW TO N AND HIGH TO K, L AND M
    digitalWrite(K, HIGH);
    digitalWrite(L, HIGH);
    digitalWrite(M, HIGH);
    digitalWrite(N, LOW);


    // IF VALUE READ FROM P IS 0, SWITCH PRESSED WILL BE 0
    read_value=digitalRead(P);
    if(read_value==0)
    {
      // Display 0 in seven segment display, D3 D2 D1 D0 (0 0 0 0)
      digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
      digitalWrite(D0, LOW);
      digitalWrite(D1, LOW);
      digitalWrite(D2, LOW);
      digitalWrite(D3, LOW);
      digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
      delay(500);
      goto label;
    }

  }


  else if(Q_value==0) // IF ANY SWITCH IN SWITCHES 3, 6, 9 and '#' IS PRESSED
Q_value WILL BECOME 0
  {

    //  SEND LOW TO K AND HIGH TO L, M AND N
    digitalWrite(K, LOW);
    digitalWrite(L, HIGH);
    digitalWrite(M, HIGH);
    digitalWrite(N, HIGH);

    // IF VALUE READ FROM Q IS 0, SWITCH PRESSED WILL BE 3
    read_value=digitalRead(Q);
    if(read_value==0)
    {
```

```
  // Display 3 in seven segment display, D3 D2 D1 D0 (0 0 1 1)
  digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
  digitalWrite(D0, HIGH);
  digitalWrite(D1, HIGH);
  digitalWrite(D2, LOW);
  digitalWrite(D3, LOW);
  digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
  delay(500);
  goto label;
}

//  SEND LOW TO L AND HIGH TO K, M AND N
digitalWrite(K, HIGH);
digitalWrite(L, LOW);
digitalWrite(M, HIGH);
digitalWrite(N, HIGH);

// IF VALUE READ FROM Q IS 0, SWITCH PRESSED WILL BE 6
read_value=digitalRead(Q);
if(read_value==0)
{
  // Display 6 in seven segment display, D3 D2 D1 D0 (0 1 1 0)
  digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
  digitalWrite(D0, LOW);
  digitalWrite(D1, HIGH);
  digitalWrite(D2, HIGH);
  digitalWrite(D3, LOW);
  digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
  delay(500);
  goto label;
}

//  SEND LOW TO M AND HIGH TO K, L AND N
digitalWrite(K, HIGH);
digitalWrite(L, HIGH);
digitalWrite(M, LOW);
digitalWrite(N, HIGH);

// IF VALUE READ FROM Q IS 0, SWITCH PRESSED WILL BE 9
read_value=digitalRead(Q);
if(read_value==0)
{
  // Display 9 in seven segment display, D3 D2 D1 D0 (1 0 0 1)
  digitalWrite(LE, LOW); // Displayed number will change if LE is LOW
  digitalWrite(D0, HIGH);
  digitalWrite(D1, LOW);
  digitalWrite(D2, LOW);
  digitalWrite(D3, HIGH);
```

```
      digitalWrite(LE, HIGH); // Displayed number will not change if LE is HIGH
      delay(500);
      goto label;
    }

    //  SEND LOW TO N AND HIGH TO K, L AND M
    digitalWrite(K, HIGH);
    digitalWrite(L, HIGH);
    digitalWrite(M, HIGH);
    digitalWrite(N, LOW);

    // IF VALUE READ FROM Q IS 0, SWITCH PRESSED WILL BE #
    read_value=digitalRead(Q);
    if(read_value==0)
    {
      goto label;
    }

  }



  else if(R_value==0)  // IF ANY SWITCH IN SWITCHES A, B, C and D IS PRESSED R_value
WILL BECOME 0
  {
    //  SEND LOW TO K AND HIGH TO L, M AND N
    digitalWrite(K, LOW);
    digitalWrite(L, HIGH);
    digitalWrite(M, HIGH);
    digitalWrite(N, HIGH);

    // IF VALUE READ FROM R IS 0, SWITCH PRESSED WILL BE 'A'
    read_value=digitalRead(R);
    if(read_value==0)
    {
       goto label;
    }

    //  SEND LOW TO L AND HIGH TO K, M AND N
    digitalWrite(K, HIGH);
    digitalWrite(L, LOW);
    digitalWrite(M, HIGH);
    digitalWrite(N, HIGH);

    // IF VALUE READ FROM R IS 0, SWITCH PRESSED WILL BE 'B'
    read_value=digitalRead(R);
    if(read_value==0)
    {
```

```
      goto label;
    }

    //  SEND LOW TO M AND HIGH TO K, L AND N
    digitalWrite(K, HIGH);
    digitalWrite(L, HIGH);
    digitalWrite(M, LOW);
    digitalWrite(N, HIGH);

    // IF VALUE READ FROM R IS 0, SWITCH PRESSED WILL BE 'C'
    read_value=digitalRead(R);
    if(read_value==0)
    {
      goto label;
    }

    //  SEND LOW TO N AND HIGH TO K, L AND M
    digitalWrite(K, HIGH);
    digitalWrite(L, HIGH);
    digitalWrite(M, HIGH);
    digitalWrite(N, LOW);

    // IF VALUE READ FROM R IS 0, SWITCH PRESSED WILL BE 'D'
    read_value=digitalRead(R);
    if(read_value==0)
    {
      goto label;
    }
  }
}
```