實驗二 LED 跑馬燈製作

實驗目的：Arduino外接到麵包板接8顆 LED，實作跑馬燈展示，呈現結果。

實驗步驟：重複1-6步驟。每一步驟之間暫停間隔2秒鐘，每行LED間隔0.5秒。

完成後，將程式碼貼至每一項目中，解釋程式設計之原理。

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| --- | --- |
| onst byte NUM =8;  const byte led[]={11,10,9,8,7,6,5,4};  const int delaytime=500;  const int delaytime1=2000;  int ii;  void setup() {  for(ii=0;ii<NUM;ii++)  {  pinMode(led[ii],OUTPUT);  digitalWrite(led[ii],HIGH);  }  }  void loop() {  for(ii=0;ii<NUM;ii++)//1  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  ] | const byte NUM =8;  const byte led[]={11,10,9,8,7,6,5,4};  const int delaytime=500;  const int delaytime1=2000;  int ii;  void setup() {  for(ii=0;ii<NUM;ii++)  {  pinMode(led[ii],OUTPUT);  digitalWrite(led[ii],HIGH);  }  }  void loop() {  /\*for(ii=0;ii<NUM;ii++)//1  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);\*/  for(ii=7;ii>=0;ii--)//2  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  } |
| const byte NUM =8;  const byte led[]={11,10,9,8,7,6,5,4};  const int delaytime=500;  const int delaytime1=2000;  int ii;  void setup() {  for(ii=0;ii<NUM;ii++)  {  pinMode(led[ii],OUTPUT);  digitalWrite(led[ii],HIGH);  }  }  void loop() {  /\*for(ii=0;ii<NUM;ii++)//1  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=7;ii>=0;ii--)//2  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);\*/  for(ii=0;ii<NUM;ii++)//3  {  digitalWrite(led[ii],LOW);  delay(delaytime);  }  for(ii=0;ii<NUM;ii++)  {  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  } | const byte NUM =8;  const byte led[]={11,10,9,8,7,6,5,4};  const int delaytime=500;  const int delaytime1=2000;  int ii;  void setup() {  for(ii=0;ii<NUM;ii++)  {  pinMode(led[ii],OUTPUT);  digitalWrite(led[ii],HIGH);  }  }  void loop() {  /\*for(ii=0;ii<NUM;ii++)//1  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=7;ii>=0;ii--)//2  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=0;ii<NUM;ii++)//3  {  digitalWrite(led[ii],LOW);  delay(delaytime);  }  for(ii=0;ii<NUM;ii++)  {  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);\*/  for(ii=7;ii>=0;ii--)//4  {  digitalWrite(led[ii],LOW);  delay(delaytime);  }  for(ii=0;ii<NUM;ii++)  {  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  } |
| const byte NUM =8;  const byte led[]={11,10,9,8,7,6,5,4};  const int delaytime=500;  const int delaytime1=2000;  int ii;  void setup() {  for(ii=0;ii<NUM;ii++)  {  pinMode(led[ii],OUTPUT);  digitalWrite(led[ii],HIGH);  }  }  void loop() {  /\* for(ii=0;ii<NUM;ii++)//1  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=7;ii>=0;ii--)//2  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=0;ii<NUM;ii++)//3  {  digitalWrite(led[ii],LOW);  delay(delaytime);  }  for(ii=0;ii<NUM;ii++)  {  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=7;ii>=0;ii--)//4  {  digitalWrite(led[ii],LOW);  delay(delaytime);  }  for(ii=0;ii<NUM;ii++)  {  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);\*/  for(ii=0;ii<NUM/2;ii++)//5  {  digitalWrite(led[ii],LOW);  digitalWrite(led[NUM-ii-1],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  digitalWrite(led[NUM-ii-1],HIGH);  }  digitalWrite(led[3],HIGH);  digitalWrite(led[4],HIGH);  delay(delaytime);  for(ii=3;ii>=0;ii--)  {  digitalWrite(led[ii],LOW);  digitalWrite(led[NUM-ii-1],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  digitalWrite(led[NUM-ii-1],HIGH);  }  digitalWrite(led[0],HIGH);  digitalWrite(led[7],HIGH);  delay(delaytime1); | const byte NUM =8;  const byte led[]={11,10,9,8,7,6,5,4};  const int delaytime=500;  const int delaytime1=2000;  int ii;  void setup() {  for(ii=0;ii<NUM;ii++)  {  pinMode(led[ii],OUTPUT);  digitalWrite(led[ii],HIGH);  }  }  void loop() {  /\*for(ii=0;ii<NUM;ii++)//1  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=7;ii>=0;ii--)//2  {  digitalWrite(led[ii],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=0;ii<NUM;ii++)//3  {  digitalWrite(led[ii],LOW);  delay(delaytime);  }  for(ii=0;ii<NUM;ii++)  {  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=7;ii>=0;ii--)//4  {  digitalWrite(led[ii],LOW);  delay(delaytime);  }  for(ii=0;ii<NUM;ii++)  {  digitalWrite(led[ii],HIGH);  }  delay(delaytime1);  for(ii=0;ii<NUM/2;ii++)//5  {  digitalWrite(led[ii],LOW);  digitalWrite(led[NUM-ii-1],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  digitalWrite(led[NUM-ii-1],HIGH);  }  digitalWrite(led[3],HIGH);  digitalWrite(led[4],HIGH);  delay(delaytime);  for(ii=3;ii>=0;ii--)  {  digitalWrite(led[ii],LOW);  digitalWrite(led[NUM-ii-1],LOW);  delay(delaytime);  digitalWrite(led[ii],HIGH);  digitalWrite(led[NUM-ii-1],HIGH);  }  digitalWrite(led[0],HIGH);  digitalWrite(led[7],HIGH);  delay(delaytime1);\*/  for(ii=0;ii<NUM/2;ii++)//6  {  digitalWrite(led[ii],LOW);  digitalWrite(led[NUM-ii-1],LOW);  delay(delaytime);  }  for(ii=0;ii<NUM;ii++)  {  digitalWrite(led[ii],HIGH);  }  delay(delaytime);  for(ii=3;ii>=0;ii--)  {  digitalWrite(led[ii],LOW);  digitalWrite(led[NUM-ii-1],LOW);  delay(delaytime);  }  delay(delaytime1);      } |