



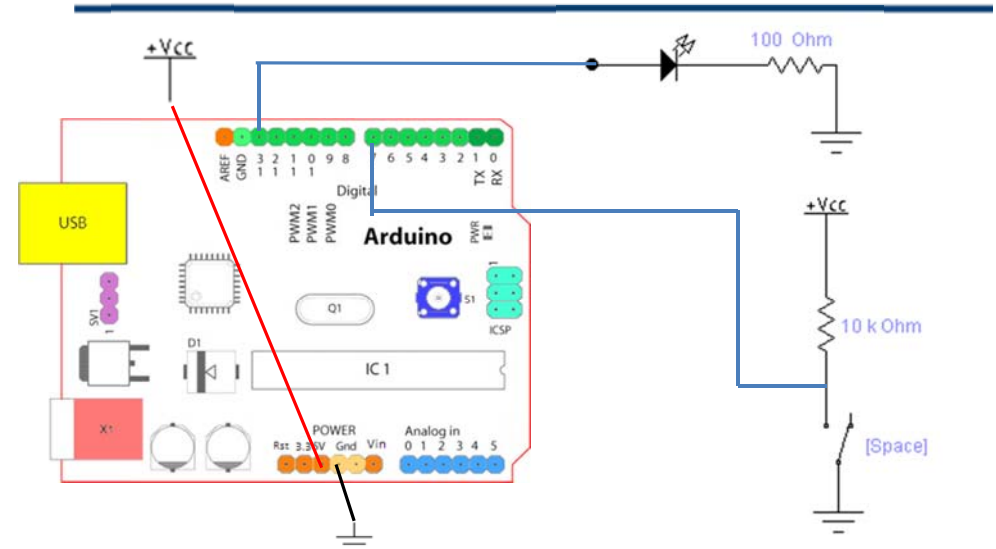
CS
IT

Lecture (02)

Dr. Ahmed ElShafee

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PressControlledStatusToggle



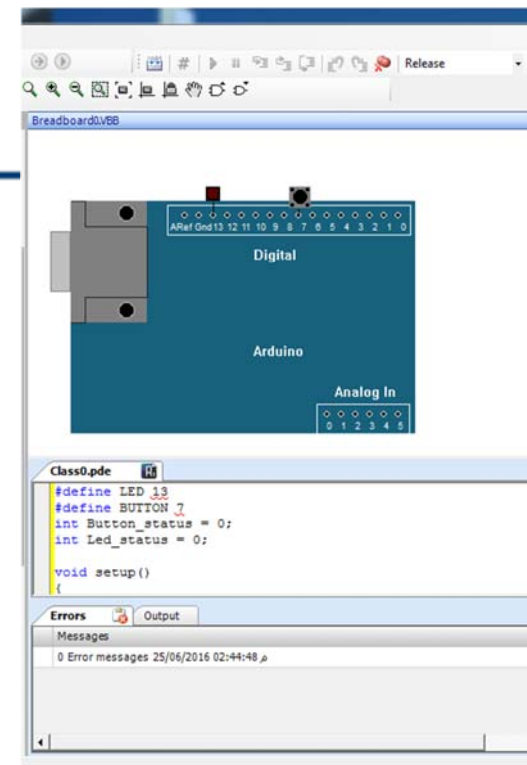
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```
#define LED 13
#define BUTTON 7
int Button_status=0;
int Led_status=0;

void setup()
{
  pinMode(LED, OUTPUT);
  pinMode(BUTTON,INPUT);
}
```

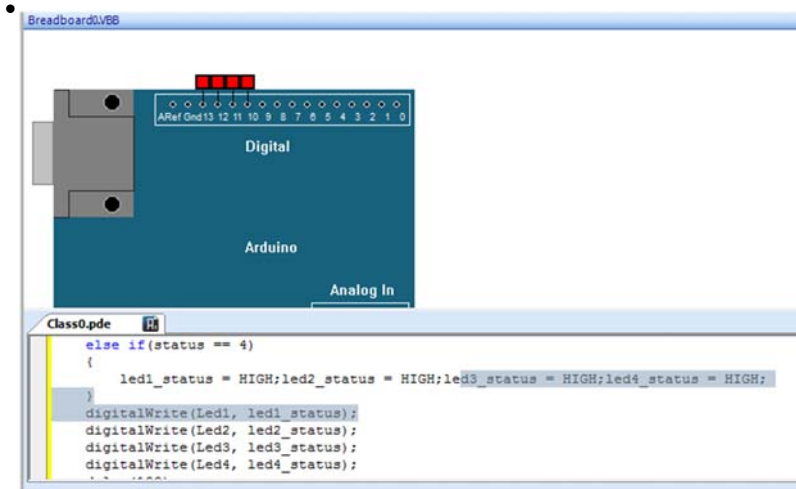
```
void loop()
{
  Button_status=digitalRead(BUTTON);
  if(Button_status==HIGH)
  {
    if(Led_status==LOW)
      Led_status=HIGH;
    else
      Led_status=LOW;
    digitalWrite(LED,Led_status);
    delay(1000);
  }
}
```

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4 Leds In Action 1



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```

#define Led4 13
#define Led3 12
#define Led2 11
#define Led1 10
int led4_status=0;
int led3_status=0;
int led2_status=0;
int led1_status=0;
int status=0;
void setup()
{
  pinMode(Led1, OUTPUT);
  pinMode(Led2, OUTPUT);
  pinMode(Led3, OUTPUT);
  pinMode(Led4, OUTPUT);
}

void loop()
{
  if(status==0)
  {
    led1_status=LOW;led2_status=LOW;led3_status=LOW;led4_status=LOW;
  }
  else if(status==1)
  {
    led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;
  }
  else if(status==2)
  {
    led1_status=HIGH;led2_status=HIGH;led3_status=LOW;led4_status=LOW;
  }
  else if(status==3)
  {
    led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=LOW;
  }
  else if(status==4)
  {
    led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;
  }
}

```

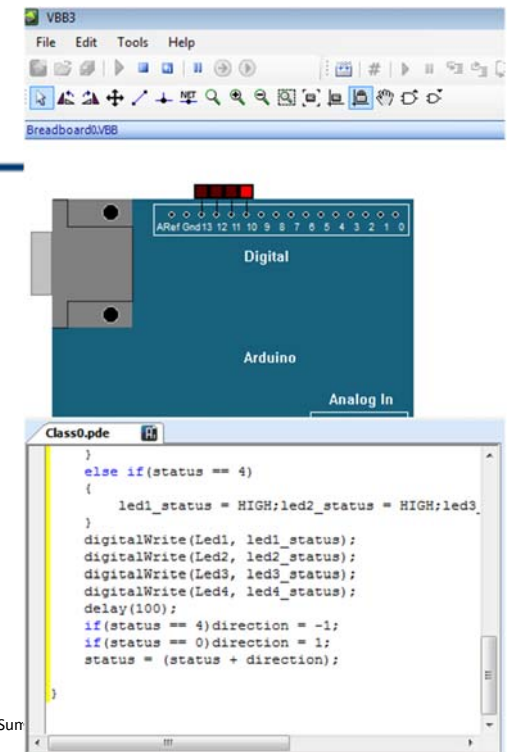
```

digitalWrite(Led1,led1_status);
digitalWrite(Led2,led2_status);
digitalWrite(Led3,led3_status);
digitalWrite(Led4,led4_status);
delay(100);
status=(status+1)%5;
}

```

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4 Leds In Action 2



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```

#define Led4 13
#define Led3 12
#define Led2 11
#define Led1 10
int led4_status=0;
int led3_status=0;
int led2_status=0;
int led1_status=0;
int status=0;
int direction=1;
void setup()
{
  pinMode(Led1, OUTPUT);
  pinMode(Led2, OUTPUT);
  pinMode(Led3, OUTPUT);
  pinMode(Led4, OUTPUT);
}

void loop()
{
  if(status==0)
  {
    led1_status=LOW;led2_status=LOW;led3_
status=LOW;led4_status=LOW;
  }
  else if(status==1)
  {
    led1_status=HIGH;led2_status=LOW;led3_
status=LOW;led4_status=LOW;
  }
  else if(status==2)
  {
    led1_status=HIGH;led2_status=HIGH;led3_
status=LOW;led4_status=LOW;
  }
  else if(status==3)
  {
    led1_status=HIGH;led2_status=HIGH;led3_
status=HIGH;led4_status=LOW;
  }
  else if(status==4)
  {
    led1_status=HIGH;led2_status=HIGH;led3_
status=HIGH;led4_status=HIGH;
  }
}

```

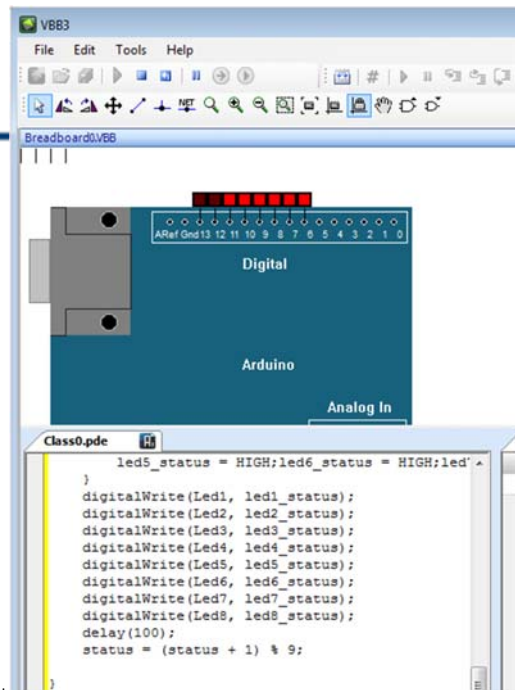
```

}
digitalWrite(Led1,led1_status);
digitalWrite(Led2,led2_status);
digitalWrite(Led3,led3_status);
digitalWrite(Led4,led4_status);
delay(100);
if(status==4)direction=-1;
if(status==0)direction=1;
status=(status+direction);
}

```

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8 Leds In Action 1



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```

#define Led8 13
#define Led7 12
#define Led6 11
#define Led5 10
#define Led4 9
#define Led3 8
#define Led2 7
#define Led1 6
int led8_status=0;
int led7_status=0;
int led6_status=0;
int led5_status=0;
int led4_status=0;
int led3_status=0;
int led2_status=0;
int led1_status=0;
int status=0;
void setup()
{
  pinMode(Led1, OUTPUT);
  pinMode(Led2, OUTPUT);
  pinMode(Led3, OUTPUT);
  pinMode(Led4, OUTPUT);
  pinMode(Led5, OUTPUT);
  pinMode(Led6, OUTPUT);
  pinMode(Led7, OUTPUT);
  pinMode(Led8, OUTPUT);
}
void loop()
{
  if(status==0)
  {
    led1_status=LOW;led2_status=LOW;led3_
status=LOW;led4_status=LOW;

    led5_status=LOW;led6_status=LOW;led7_
status=LOW;led8_status=LOW;
  }
  else if(status==1)
  {
    led1_status=HIGH;led2_status=LOW;led3_
status=LOW;led4_status=LOW;

    led5_status=LOW;led6_status=LOW;led7_
status=LOW;led8_status=LOW;
  }
  else if(status==2)
  {

```

```

led1_status=HIGH;led2_status=HIGH;led3_status=LOW;led4_status=LOW;

led5_status=LOW;led6_status=LOW;led7_status=LOW;led8_status=LOW;
}
else if(status==3)
{

led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=LOW;

led5_status=LOW;led6_status=LOW;led7_status=LOW;led8_status=LOW;
}
else if(status==4)
{

led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;

led5_status=LOW;led6_status=LOW;led7_status=LOW;led8_status=LOW;
}

```

```

else if(status==5)
{

led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;

led5_status=HIGH;led6_status=LOW;led7_status=LOW;led8_status=LOW;
}
else if(status==6)
{

led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;

led5_status=HIGH;led6_status=HIGH;led7_status=LOW;led8_status=LOW;
}
else if(status==7)
{

led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;

```

```

led5_status=HIGH;led6_status=HIGH;led7_status=HIGH;led8_status=LOW;
}
else if(status==8)
{

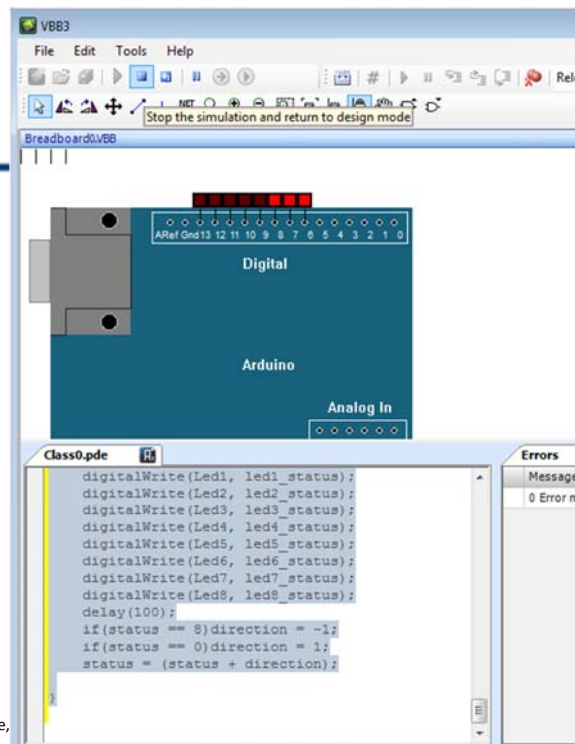
led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;

led5_status=HIGH;led6_status=HIGH;led7_status=HIGH;led8_status=HIGH;
}
digitalWrite(Led1,led1_status);
digitalWrite(Led2,led2_status);
digitalWrite(Led3,led3_status);
digitalWrite(Led4,led4_status);
digitalWrite(Led5,led5_status);
digitalWrite(Led6,led6_status);
digitalWrite(Led7,led7_status);
digitalWrite(Led8,led8_status);
delay(100);
status=(status+1)%9;
}

```

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8 Leds In Action 2



```

#define Led8 13
#define Led7 12
#define Led6 11
#define Led5 10
#define Led4 9
#define Led3 8
#define Led2 7
#define Led1 6
int led8_status=0;
int led7_status=0;
int led6_status=0;
int led5_status=0;
int led4_status=0;
int led3_status=0;
int led2_status=0;
int led1_status=0;
int status=0; int direction = 1;
void setup()
{
pinMode(Led1, OUTPUT);
pinMode(Led2, OUTPUT);
pinMode(Led3, OUTPUT);
pinMode(Led4, OUTPUT);
pinMode(Led5, OUTPUT);
pinMode(Led6, OUTPUT);

```

```

pinMode(Led7, OUTPUT);
pinMode(Led8, OUTPUT);
}
void loop()
{
if(status==0)
{

led1_status=LOW;led2_status=LOW;led3_status=LOW;led4_status=LOW;

led5_status=LOW;led6_status=LOW;led7_status=LOW;led8_status=LOW;
}
else if(status==1)
{

led1_status=HIGH;led2_status=LOW;led3_status=LOW;led4_status=LOW;

led5_status=LOW;led6_status=LOW;led7_status=LOW;led8_status=LOW;
}
else if(status==2)
{

```

```
led1_status=HIGH;led2_status=HIGH;led3_status=LOW;led4_status=LOW;
```

```
led5_status=LOW;led6_status=LOW;led7_status=LOW;led8_status=LOW;
```

```
}  
else if(status==3)  
{
```

```
led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=LOW;
```

```
led5_status=LOW;led6_status=LOW;led7_status=LOW;led8_status=LOW;
```

```
}  
else if(status==4)  
{
```

```
led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;
```

```
led5_status=LOW;led6_status=LOW;led7_status=LOW;led8_status=LOW;
```

```
}
```

```
else if(status==5)  
{
```

```
led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;
```

```
led5_status=HIGH;led6_status=LOW;led7_status=LOW;led8_status=LOW;
```

```
}  
else if(status==6)  
{
```

```
led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;
```

```
led5_status=HIGH;led6_status=HIGH;led7_status=LOW;led8_status=LOW;
```

```
}  
else if(status==7)  
{
```

```
led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;
```

```
}
```

```
led5_status=HIGH;led6_status=HIGH;led7_status=HIGH;led8_status=LOW;
```

```
}
```

```
else if(status==8)  
{
```

```
led1_status=HIGH;led2_status=HIGH;led3_status=HIGH;led4_status=HIGH;
```

```
led5_status=HIGH;led6_status=HIGH;led7_status=HIGH;led8_status=HIGH;
```

```
}
```

```
digitalWrite(Led1,led1_status);
```

```
digitalWrite(Led2,led2_status);
```

```
digitalWrite(Led3,led3_status);
```

```
digitalWrite(Led4,led4_status);
```

```
digitalWrite(Led5,led5_status);
```

```
digitalWrite(Led6,led6_status);
```

```
digitalWrite(Led7,led7_status);
```

```
digitalWrite(Led8,led8_status);
```

```
if(status == 8)direction = -1;
```

```
if(status == 0)direction = 1;
```

```
status = (status + direction);
```

```
}
```

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Thanks,
See you next Week, isA