

# LED BLINKING

sketch\_feb28a | Energia 1.8.7E21

File Edit Sketch Tools Help



sketch\_feb28a \$

```
#define LED RED_LED
//void setup()
{
  pinMode(LED, OUTPUT);
}
void loop()
{
  digitalWrite(LED, HIGH);
  delay(1000);
  digitalWrite(LED, LOW);
  delay(1000);
}
```

# AND GATE



The screenshot shows the Energia IDE interface. The title bar indicates the file is 'sketch\_feb28b' and the version is 'Energia 1.8.7E21'. The menu bar includes 'File', 'Edit', 'Sketch', 'Tools', and 'Help'. The toolbar contains icons for opening, saving, and running. The main text area displays the following C++ code:

```
sketch_feb28b $
#define LED RED_LED
int launchpadButtonState = 0;
int launchpadButtonState1 = 0;//variable
void setup()
{
  pinMode(LED, OUTPUT); //setting state of LED as OUTPUT
  pinMode(PUSH1, INPUT_PULLUP); //Setting the of onboard Push button to PULLUP
} //PUSH2 and PUSH1 are constants used for onboard buttons default ide.
void loop()
{
  launchpadButtonState = digitalRead(PUSH1);
  launchpadButtonState1 = digitalRead(PUSH2);
  if (launchpadButtonState == 0 && launchpadButtonState1 == 0)
  {
    digitalWrite(LED, HIGH);
  }
  else
  {
    digitalWrite(LED, LOW);
  }
}
```

# XOR GATE

File Edit Sketch Tools Help



sketch\_feb28c

```
#define LED RED_LED
int launchpadButtonState = 0;
int launchpadButtonState1 = 0;//variable
void setup()
{
  pinMode(LED, OUTPUT); //setting state of LED as OUTPUT
  pinMode(PUSH1, INPUT_PULLUP);
  pinMode(PUSH2, INPUT_PULLUP); //Setting the of onboard Push button to PULLUP
} //PUSH2 and PUSH1 are constants used for onboard buttons default ide.
void loop()
{
  launchpadButtonState = digitalRead(PUSH1);
  launchpadButtonState1 = digitalRead(PUSH2);
  if (launchpadButtonState == 0 xor launchpadButtonState1 == 0)
  {
    digitalWrite(LED, HIGH);
  }
  else
  {
    digitalWrite(LED, LOW);
  }
}
```

# XNOR GATE

sketch\_feb28d | Energia 1.8.7E21

File Edit Sketch Tools Help



sketch\_feb28d

```
#define LED RED_LED
int launchpadButtonState = 0;
int launchpadButtonState1 = 0; //variable
void setup()
{
  pinMode(LED, OUTPUT); //setting state of LED as OUTPUT
  pinMode(PUSH1, INPUT_PULLUP);
  pinMode(PUSH2, INPUT_PULLUP); //Setting the of onboard Push button to PULLUP
} //PUSH2 and PUSH1 are constants used for onboard buttons default ide.
void loop()
{
  launchpadButtonState = digitalRead(PUSH1);
  launchpadButtonState1 = digitalRead(PUSH2);
  if (launchpadButtonState == 0 xor! launchpadButtonState1 == 0)
  {
    digitalWrite(LED, HIGH);
  }
  else
  {
    digitalWrite(LED, LOW);
  }
}
```

# OR GATE

File Edit Sketch Tools Help



sketch\_feb28c

```
#define LED RED_LED
int launchpadButtonState = 0;
int launchpadButtonState1 = 0; //variable
void setup()
{
  pinMode(LED, OUTPUT); //setting state of LED as OUTPUT
  pinMode(PUSH1, INPUT_PULLUP);
  pinMode(PUSH2, INPUT_PULLUP); //Setting the of onboard Push button to PULLUP
} //PUSH2 and PUSH1 are constants used for onboard buttons default ide.
void loop()
{
  launchpadButtonState = digitalRead(PUSH1);
  launchpadButtonState1 = digitalRead(PUSH2);
  if (launchpadButtonState == 0 or launchpadButtonState1 == 0)
  {
    digitalWrite(LED, HIGH);
  }
  else
  {
    digitalWrite(LED, LOW);
  }
}
```

# HALF ADDER

sketch\_feb28e | Energia 1.8.7E21

File Edit Sketch Tools Help



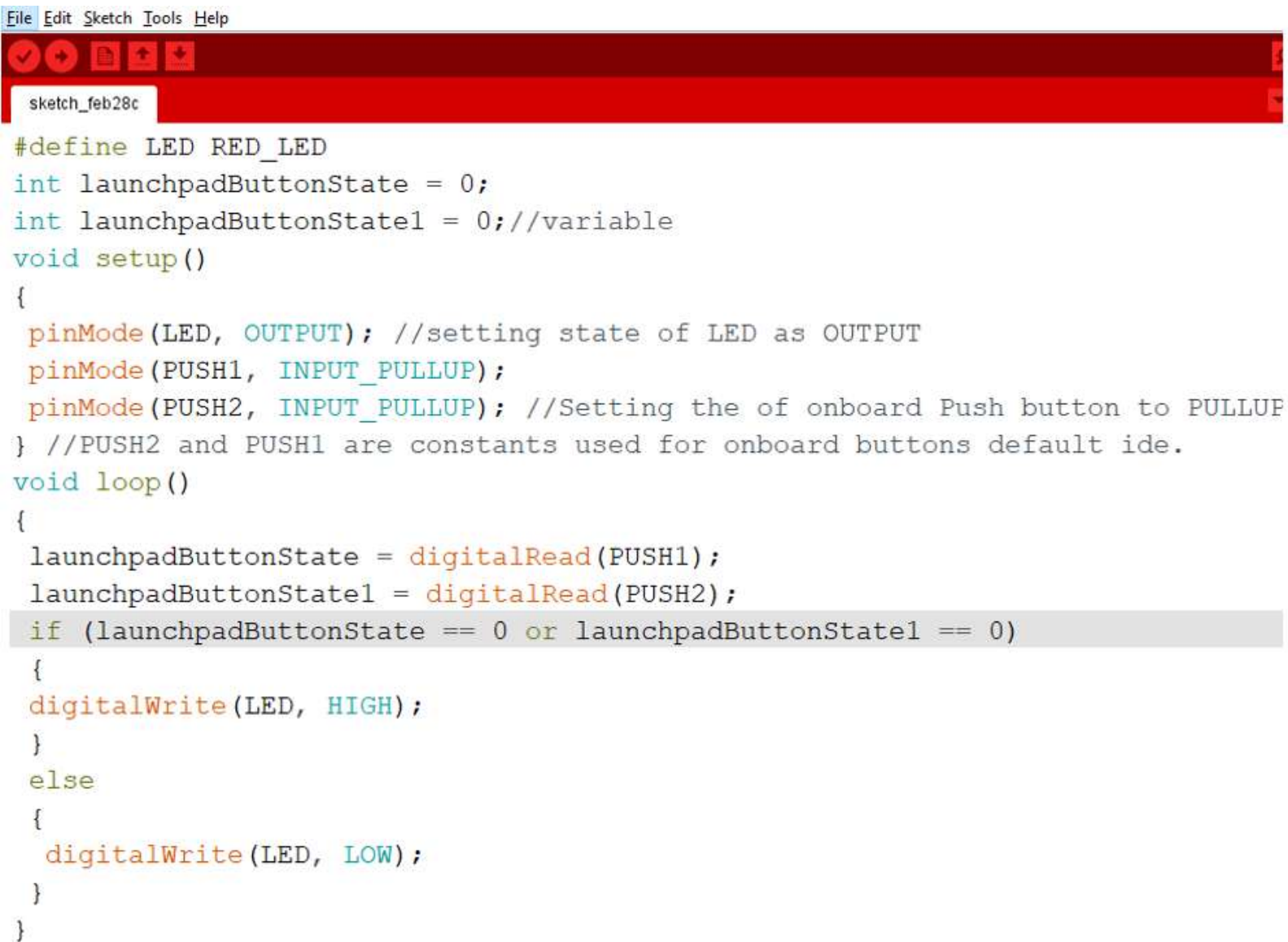
sketch\_feb28e

Arduino IDE

```
void setup()
{
  pinMode(LED2, OUTPUT); //setting state of LED as OUTPUT
  pinMode(LED1, OUTPUT);
  pinMode(PUSH1, INPUT_PULLUP);
  pinMode(PUSH2, INPUT_PULLUP); //Setting the of onboard Push button to PULLUP
} //PUSH2 and PUSH1 are constants used for onboard buttons default ide.
void loop()
{
  launchpadButtonState = digitalRead(PUSH1);
  launchpadButtonStatel = digitalRead(PUSH2);
  if (launchpadButtonState == 0 && launchpadButtonStatel == 0)
  {
    digitalWrite(LED2, HIGH);
    digitalWrite(LED1, LOW);
  }
  else if (launchpadButtonState == 1 && launchpadButtonStatel == 1)
  {
    digitalWrite(LED2, LOW);
    digitalWrite(LED1, LOW);
  }
  else
  {
    digitalWrite(LED2, LOW);
    digitalWrite(LED1, HIGH);
  }
}
```



## Exercise Question 3



The screenshot shows the Arduino IDE interface with a red title bar. The menu bar includes File, Edit, Sketch, Tools, and Help. Below the menu bar is a toolbar with icons for opening, saving, and running. The active window is titled 'sketch\_feb28c'. The code in the editor is as follows:

```
#define LED RED_LED
int launchpadButtonState = 0;
int launchpadButtonState1 = 0; //variable
void setup()
{
  pinMode(LED, OUTPUT); //setting state of LED as OUTPUT
  pinMode(PUSH1, INPUT_PULLUP);
  pinMode(PUSH2, INPUT_PULLUP); //Setting the of onboard Push button to PULLUP
} //PUSH2 and PUSH1 are constants used for onboard buttons default ide.
void loop()
{
  launchpadButtonState = digitalRead(PUSH1);
  launchpadButtonState1 = digitalRead(PUSH2);
  if (launchpadButtonState == 0 or launchpadButtonState1 == 0)
  {
    digitalWrite(LED, HIGH);
  }
  else
  {
    digitalWrite(LED, LOW);
  }
}
```

## Exercise Question 4



The screenshot shows the Arduino IDE interface with a red title bar. The menu bar includes File, Edit, Sketch, Tools, and Help. Below the menu bar is a toolbar with icons for saving, opening, and other functions. The sketch file is named 'sketch\_feb28c'. The code is as follows:

```
#define LED RED_LED
int launchpadButtonState = 0;
int launchpadButtonState1 = 0; //variable
void setup()
{
  pinMode(LED, OUTPUT); //setting state of LED as OUTPUT
  pinMode(PUSH1, INPUT_PULLUP);
  pinMode(PUSH2, INPUT_PULLUP); //Setting the of onboard Push button to PULLUP
} //PUSH2 and PUSH1 are constants used for onboard buttons default ide.
void loop()
{
  launchpadButtonState = digitalRead(PUSH1);
  launchpadButtonState1 = digitalRead(PUSH2);
  if (launchpadButtonState == 0 or launchpadButtonState1 == 0)
  {
    digitalWrite(LED, HIGH);
  }
  else
  {
    digitalWrite(LED, LOW);
  }
}
```





sketch\_feb28b \$

```
#define LED RED_LED
int launchpadButtonState = 0;
int launchpadButtonState1 = 0;//variable
void setup()
{
  pinMode(LED, OUTPUT); //setting state of LED as OUTPUT
  pinMode(PUSH1, INPUT_PULLUP); //Setting the of onboard Push button to PULLUP
} //PUSH2 and PUSH1 are constants used for onboard buttons default ide.
void loop()
{
  launchpadButtonState = digitalRead(PUSH1);
  launchpadButtonState1 = digitalRead(PUSH2);
  if (launchpadButtonState == 0 && launchpadButtonState1 == 0)
  {
    digitalWrite(LED, HIGH);
  }
  else
  {
    digitalWrite(LED, LOW);
  }
}
```