**Structure**

/* Each Arduino sketch must contain the following two functions. */

```c
void setup()
{
  // this code runs once at the beginning of the code execution.
}

void loop()
{
  // this code runs repeatedly over and over as long as the board is powered.
}
```

**Comments**

// this is a single line comment
/* this is a multiline comment */

**Setup**

```c
pinMode(pinNum, INPUT/OUTPUT/INPUT_PULLUP);
/* Sets the mode of the digital I/O pin. All pins are general I/O on the board. You must define what the pin will be used for at the beginning of your code in setup() */
```

**Control Structures**

```c
if(condition)
{
  // if condition is true, do something here
}
else
{
  // otherwise, do this
}
```

```c
for(init; condition; increment)
{
  // do this, increment, and repeat while condition is true.
}
```

**Digital I/O**

```c
digitalWrite(pin, val);
/* val = HIGH or LOW write a HIGH or a LOW value to a digital pin. */

buttonVal = digitalRead(pin);
/* Reads the value from a specified digital pin, either HIGH or LOW. */
```

**Analog I/O**

```c
analogWrite(pin, val);
/* Writes an analog voltage (using PWM) to a pin. val = integer value from 0 to 255 */

sensorVal = analogRead(pin);
/* Reads the voltage from the specified analog pin. 0V returns 0; Vcc returns 1023 */
```

**Time**

```c
delay(time_ms);
/* Pauses the program for the amount of time (in milliseconds). */

millis();
/* Returns the number of milliseconds since the board began running the current program. max: 4,294,967,295 */
```

**Serial Communication**

A separate USB to serial adapter like FTDI is needed for Serial communication with the ATtiny. And, the ATtiny must be flashed to run at 8 MHz instead of 1 MHz.

The ATtiny does not support Serial natively. You need to use the `SoftwareSerial` library to enable this function.