
Engineering Technology (ENGR 101)

String

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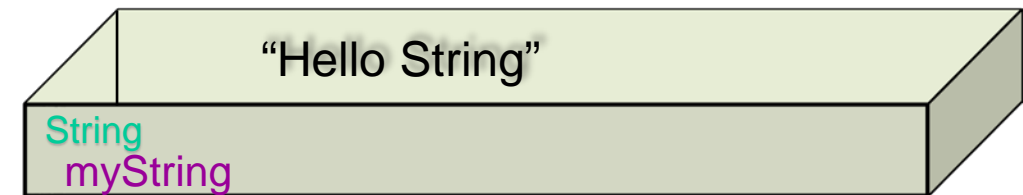
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The Arduino String (Text)

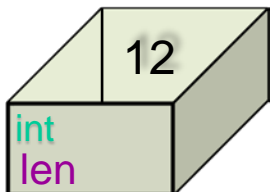
- A Text **String** can be created just like a variable and assigned a text or string.

```
String myString = "Hello String";
```



- The **String** is a special data type which contains “functions”.
 - Functions operate on the string data contained in the **String variable**.
 - More information: <https://www.arduino.cc/reference/en/language/variables/data-types/stringobject/>

```
int len = myString.length(); \\Returns the length of the String
```



Example: Text Strings in Arduino

```
void setup() {  
  Serial.begin(9600);  
  String myString = "Hello, world";  
  Serial.println(myString);  
  
  //The n'th character of the String  
  Serial.println(myString.charAt(8));  
  
  //Appends the parameter to the String  
  myString.concat("lings");  
  Serial.println(myString);  
  
  //Get an upper-case version of a String.  
  myString.toUpperCase();  
  Serial.println(myString);  
}  
void loop() {  
}
```



COM4

Send

Hello, world

w

Hello, worldlings

HELLO, WORL DLINGS

Programs that make decisions

- Programs that perform the same action every time are boring!
- You can vary the action in a program by getting input from the user:

```
String myString = Serial.readString();  
:  
Serial.println(myString);
```

Reading Serial Input

```
void setup() {  
    Serial.begin(9600);  
}  
void loop() {  
    String myString = "";  
    while( myString.equals("")){  
        myString = Serial.readString();  
    }  
    Serial.println(myString);  
}
```

- **Serial.readString()** reads incoming serial characters.



Reading Serial Input

```
void setup() {  
    Serial.begin(9600);  
}  
void loop() {  
    String myString = "";  
  
    while( myString.equals("")){  
        myString = Serial.readString();  
    }  
  
    if( myString.equals("Yes")){  
        Serial.println ("You said yes!");  
    }  
    else{  
        Serial.print("You said ");  
        Serial.println(myString);  
    }  
}
```



COM4

Yes

Send

You said yes!

Reading Serial Input

```
void setup() {
  Serial.begin(9600);
}
void loop() {
  String myString = "";

  while( myString.equals("")){
    myString = Serial.readString();
  }

  if( myString.equals("Yes")){
    Serial.println ("You said yes!");
  }
  else{
    Serial.print("You said ");
    Serial.println(myString);
  }
}
```



COM4

Hi

Send

You said Hi!

Random Number



```
void setup() {  
  Serial.begin(9600);  
  
  randomSeed(analogRead(A0));  
  
  for(int i = 0; i < 5; i++){  
    Serial.print(random(1, 101));  
    Serial.print(" ");  
  }  
  
  Serial.print("\n");  
}  
void loop() {  
}
```

- **random (min, max)** generates a pseudo-random number between min and max-1
 - Pseudo-random numbers are numbers produced by mathematical algorithms
- **randomSeed(seed)** initializes the pseudo-random number generator, causing it to start at an arbitrary point in its random sequence.
 - Seed number used to initialize a pseudo random number generator
- **analogRead()** returns an integer between 0 (for 0V) and 1023 (for 5V)