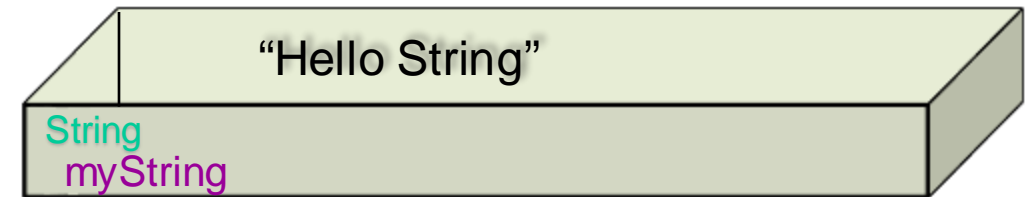

Engineering Technology (ENGR 101)

String

The Arduino String (Text)

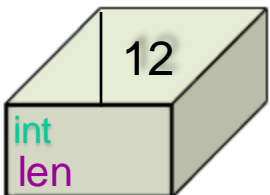
- A Text **String** can be created just like a variable and assigned a text or string.

```
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

```
String myString = "Hello, world";

void setup() {
  Serial.begin(9600);
  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

```
String myString;

void setup() {
  Serial.begin(9600);
}

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

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



COM4

Send

Hello, world

Reading Serial Input

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

Send

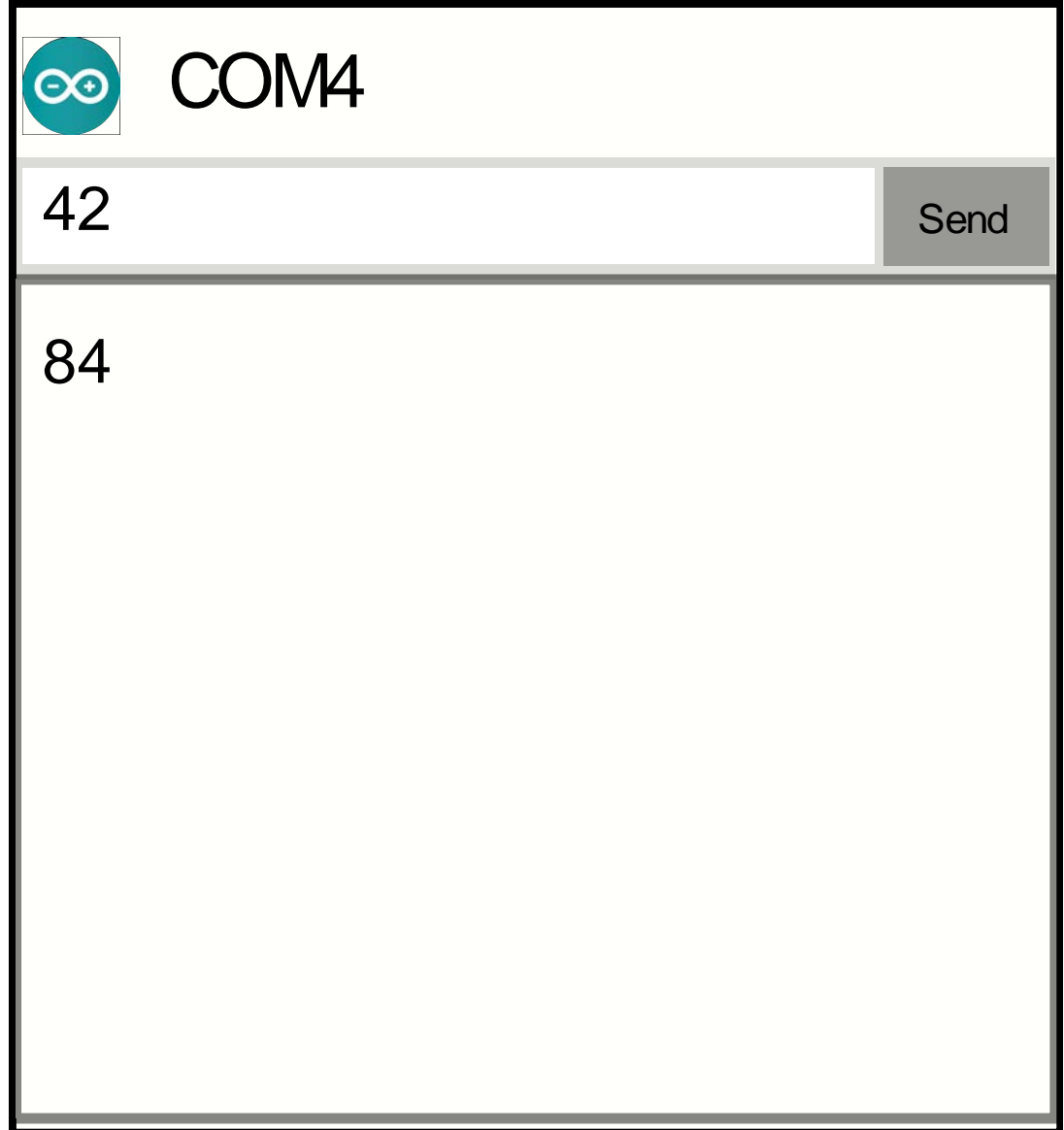
You said yes!

Reading Serial Input

```
String myString;
long num;
void setup() {
    Serial.begin(9600);
}
void loop() {
    myString = "";
    num = 0;
    while( myString.equals("")){
        myString = Serial.readString();
    }

    num = myString.toInt();
    Serial.println(num * 2);
}
```

- **toInt ()** converts a valid String to an integer.



The screenshot shows the Arduino IDE serial monitor interface. At the top, there is a teal circular icon with a white infinity symbol and a plus sign, followed by the text "COM4". Below this, there is a text input field containing the number "42" and a grey "Send" button to its right. The main area of the serial monitor is a large white box with a black border, containing the number "84" in a black monospace font, which is the result of the code's calculation (42 * 2).