STRINGS OBJECTS

- An object is a construct that contains both data and functions.
- A String object can be created just like a variable and assigned a value or string.
  The String object contains functions (which are called "methods" in object oriented programming (OOP)) which operate on the string data contained in the String object.

  The following sketch and explanation will make it clear what an object is and how the String object is used.

EXAMPLE

```
void setup() {
    String my_str = "This is my string.";
    Serial.begin(9600);

    // (1) print the string
    Serial.println(my_str);

    // (2) change the string to upper-case
    my_str.toUpperCase();
    Serial.println(my_str);

    // (3) overwrite the string
    my_str = "My new string.";
    Serial.println(my_str);

    // (4) replace a word in the string
    my_str.replace("string", "Arduino sketch");
    Serial.println(my_str);

    // (5) get the length of the string
    Serial.print("String length is: ");
    Serial.println(my_str.length());
}

void loop() {

}
```

RESULT
This is my string.
THIS IS MY STRING.
My new string.
My new Arduino sketch.
String length is: 12

A string object is created and assigned a value (or string) at the top of the sketch.

String my_str = "This is my string." ;

This creates a String object with the name my_str and gives it a value of "This is my string."
This can be compared to creating a variable and assigning a value to it such as an integer −

int my_var = 102;

The sketch works in the following way:
- Printing the String
- Convert the String to Upper-case
  — Object my_str was created.
  — my_str.toUpperCase();
- Overwrite a String
  — my_str = " My new string." ;
- Replacing a word in the String
  — replace() function
- Getting the Length of the String
  — length() function

When to Use a String Object

- A String Object is much easier to use than a String array.
- The main disadvantage of using the String object is that uses a lot of memory and can quickly use up the Arduinos RAM memory.
- Character array strings are more difficult to use and you may need to write your own functions to operate on these type of strings. The advantage is that you have control on the size of the string arrays that you make.
- You need to make sure that you do not write beyond the end of the array bounds with string arrays.
- The string object can try to write to memory that does not exist when it runs out of memory.