**LAB NOTE**

**Subject: Hardware/Software Interfacing**

**Lab 1: Hello World**

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# Objectives

* Verify that the printf statements are producing output.
* Experiment with using the Debugger.
* Write a Hello <name> code.

# Problems and Solutions

## Problems

* How to print only a portion of a string.

## Solutions

To print only a portion of string we can use “%.\*s” where “.\*” is to a specific how much character in a string to print

For example:

myStr = “apple”

printf(“%.\*s”,1,myStr);

* This snippet code will print out “a”.

myStr = “apple”

printf(“%.\*s”,3,myStr);

* This snippet code will print out “app”.

# Software Design

## List of function

**void** **printPattern**(**char** \*str)

{

**char** myStr[20];

// Get the length of the input string

**int** length = **strlen**(str);

// Loop through each character in the string

**for** (**int** i = 0; i < length; i++)

{

// Loop through all characters

**for** (**char** j = ' '; j < 'z'; j++)

{

// Loop all character until reach the same character

**if** (j <= str[i])

{

// Print the first letter

**if** (i == 0)

{

**printf**("%c\r\n", j);

}

// Print the pattern

**else**

{

**printf**("%.\*s%c\r\n", i, myStr, j);

}

HAL\_Delay(10);

}

**else**

{

// Store the character to myStr

myStr[i] = j - 1;

**break**;

}

}

}

}

## While loop

**while** (1)

{

/\* USER CODE END WHILE \*/

**scanf**("%s",userName);

**strcat**(userOutput,userName); // combine string to make "Hello <name>"

printPattern(userOutput);

**printf**("~~~~~~~~~~~~~~~~~~\r\n");

// Reset for next loop

**strcpy**(userOutput,"Hello ");

/\* USER CODE BEGIN 3 \*/

}

# Result

A black screen with white text

Description automatically generated

Figure 4‑1: Lab1's result

**REFERENCES**