Lesson 10 Lab

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Task 1: To define a functions which takes three char* (a, b, c) and then concatenate a and b to become a new string, put the string into c, you can assume both a and b have valid string and c is large enough. The prototype is as:

void my_concat(const char *a, const char *b, char* c);

```
void my_concat(const char *a, const char *b, char* c)
{
    int lengthOfA = 0;
    int lengthOfB = 0;
    for (; a[lengthOfA]; lengthOfA++);
    for (; b[lengthOfB]; lengthOfB++);

    for (int x = 0; x < lengthOfA; x++)
        c[x] = a[x];

    for (int x = 0; x < lengthOfB; x++)
        c[lengthOfA + x] = b[x];

    c[lengthOfA + lengthOfB] = '\0';
}
```

Task 2: To define a program to compare each pair of the strings and print the bigger one for each pair, using function **strcmp**

(1)"Az" and "aZ"
(2)"ABCDEF" and "a"
(3)"sushi-roll" and "unagi"

```
#include <stdio.h>
#include <string.h>

int main()
{
    printf("Az vs. aZ: %s\n", strcmp("Az", "aZ") > 0 ? "Az"
: "aZ");
```

```
    printf("ABCDEF vs. a: %s\n", strcmp("ABCDEF", "a") > 0
? "ABCDEF" : "a");
    printf("sushi-roll vs. unagi: %s\n", strcmp("sushi-
roll", "unagi") > 0 ? "sushi-roll" : "unagi");
    return 0;
}
```

Task 3: To define a program to find the second 'a' in string "apple-pineapple", using function **strchr**, print "yes" if you found the second, print "no" otherwise.

[Challenge] Try to see whether you can print the index of the second 'a', if found

```
#include <stdio.h>
#include <string.h>

int main() {
    const char *str = "apple-pineapple";
    const char *first = strchr(str, 'a');

    if (first) {
        const char *second = strchr(first + 1, 'a');
        if (second) {
            int index = second - str;
            printf("yes\n");
            printf("Index of second 'a': %d", index);
        } else {
            printf("no\n");
        }
    } else {
        printf("no\n");
    }

    return 0;
}
```

Task 4: To define a program which defines two integer arrays, and then copy array1 values into array2, using function memcpy
Note: give your array1 some initial values, for example:
int array1 [] = {1,2,3,4,5,6,7,8,9,0};

int array2[10];

[Hint: We can assume array1 and array2 have same length.]

```
#include <stdio.h>
#include <string.h>

int main() {
    int array1[] = {1,2,3,4,5,6,7,8,9,0};
    int array2[10];

    memcpy(array2, array1, sizeof(array1));

    for (int x = 0; x < 10; x++) {
        printf("%d", array2[x]);
    }

    return 0;
}
```

Task 5: To define a function which takes in two strings, and then prints the longer one, using strlen to understand which one to print

```
#include <stdio.h>
#include <string.h>

void printBigger(const char *one, const char *two)
{
    if (strlen(one) > strlen(two))
    {
        printf("%s", one);
        return;
    }
    printf("%s", two);
}
```