Assignment 10

a. // mystrcpy()

```
char* mystrcpy(char*, char*);
int main()
{
	char str1 [10] = "Hello";
	char str2 [10];

	mystrcpy(str1, str2);
	printf("%s", str2);
}
char* mystrcpy(char* str1, char* str2){
	int i=0;
	while(str1[i]!='\0'){
		str2[i] = str1[i];
		i++;
	}
	str2[i]='\0';
	return str2;
}
```

b. //mystrlen()

```
int main(){
	char str[15] = "Programming";

	int len = mystrlen(str);
	printf("The length of str is: %d", len);
}
mystrlen(char* str){
	int i=0;
	while(str[i]!='\0'){
		i++;
	}
	return i;
}
```

c. // mystrcmp()

```
#include <stdio.h>
#include <string.h>
int *mystrcmp(char*, char*);
int main()
{
	char str1[10] = "Hello";
	char str2[10] = "Hello";

	int* res = mystrcmp(str1, str2);
```

```
        if(res == 0){
                printf("Similar strings");
        }else
        printf("Not similar");
}
int* mystrcmp(char*str1, char*str2){
        int i=0;
        while(str1[i]!='\0' && str2[i]!='\0'){
                if(str1[i]!=str2[i]){
                        return str1[i]-str2[i];
                }i++;
        }
        return str1[i]-str2[i];
}
```

d. //strcat()

```
char* mystrcat(char* ,char*);
int main()
{
        char str1[15] = "Hello";
        char str2[15] = " World";

        char* ptr = mystrcat(str1, str2);
        printf("%s", str1);
//      printf("%s", ptr);
}
char* mystrcat(char* str1, char* str2){

        {
                int i=0;
                while(str1[i]!='\0'){
                        i++;
                }
                int j=0;
                while(str2[j]!='\0'){
                        str1[i] = str2[j];
                        i++;
                        j++;
                }
                str1[i]='\0';
                return str1;
        }
}
```

e. // mystrncpy

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

```
#include <string.h>
char* mystrncpy(char*, char*, int);
int main()
{
        char src[15] = "Hello World";
        char dest[10];
        int n = 4;

   mystrncpy(dest, src, n);
        printf("%s", dest);
}
char* mystrncpy(char* dest, char* src, int n){
        int i=0;
        while(i<n)
        {
                dest[i]=src[i];
                i++;
                }
                dest[i]='\0';

                return dest;

}
```

f. // mystrupper

```
#include <stdio.h>
#include <string.h>
char * mystrupper(char*);
int main()
{
        char str[15] = "Hello World !";

        mystrupper(str);
        printf("%s", str);
}
char *mystrupper(char* str){
        int i=0;
        while(str[i]!='\0'){
                if(str[i]>='a' && str[i]<='z')
                str[i] = str[i] - 32;
                i++;
        }
        return str;
}
```

g. // mystrlower

```
#include <stdio.h>
#include <string.h>
char* mystrlower(char*);
int main(){
	char str[] = "HELLO WORLD !";

	mystrlower(str);
	printf("%s", str);
}
char* mystrlower(char* str){
	int i=0;
	while(str[i]!='\0'){
		if(str[i]>='A' && str[i]<='Z')
		str[i] = str[i] + 32;
		i++;
	}
	return str;
}
```

h. //mystrrev

```
#include <stdio.h>
#include <string.h>
char * mystrrev(char*);
int main()
{
	char str[15] = "Hello World";

	mystrrev(str);
	printf("%s", str);
}
char* mystrrev(char *str){
	int i=0;
	while(str[i]!='\0')
	{
		i++;
	}
	int len = i;

	int j = 0, k = len-1;
	char temp;
	while(j<k){

			temp = str[j];
			str[j] = str[k];
			str[k] = temp;
```

```
                        j++;
                        k--;

        }
        return str;
}
```

i. //strstr()

```
#include <stdio.h>
#include <string.h>
char* mystrstr(char*, char*);
int main() {
   char str1[] = "firstbit";
   char str2[] = "rst";

   char* result = mystrstr(str1, str2);

   if (result != NULL)
      printf("Substring found from index: %d\n", result-str1);
   else
      printf("Substring not found\n");

}
char* mystrstr(char* str1, char* str2)
{
        int i=0;
        while(str1[i]!='\0'){
                if (str1[i] == str2[0]){
                        int j=i;
                        while(str1[j]==str2[j-i] && str2[j-i]!='\0'){
                                j++;
                        }
                        if(str2[j-i]=='\0'){
                                return &str1[i];
                        }
                }i++;
        }
        return NULL;
}
```

j. // mystrcasecmp

```
#include <stdio.h>
#include <string.h>
int mystrcasecmp(char*, char*);
int main(){
```

```
	char str1[15] = "hello world";
	char str2[15] = "HELLO WORLD";

	int res = mystrcasecmp(str1,str2);
	printf("%d", res);
}
int mystrcasecmp(char* str1, char* str2){
	int i=0;
	while(str1[i]!='\0' && str2[i]!='\0'){
		if(str2[i]>='A' && str2[i]<='Z'){
			if(str1[i] !=str2[i]+32)
			return str1[i]-str2[i]+32;
		}else if(str2[i]>='a' && str2[i]<='z'){
			if(str1[i] !=str2[i]-32)
			return str1[i]-str2[i]-32;
		}
		i++;
	}if(str2[i]>='A' && str2[i]<='Z')
	return str1[i]-str2[i]+32;
	else if(str2[i]>='a' && str2[i]<='z')
	return str1[i]-str2[i]+32;
}
```

k. //mystrchr

```
#include <stdio.h>
#include <string.h>
char * mystrchr(char*, char*);
int main()
{
	char str1[10] = "Programming";
	char str2[1] = "a";

	char* res = mystrchr(str1, str2);
	if(res!=NULL){
		printf("Character found at index :%d ", res-str1);
	}else
	printf("Character not found");
}
char *mystrchr(char *str1, char *str2){
	int i =0;
	while(str1[i]!='\0'){
		if(str1[i] == str2[0]){
			return &str1[i];     //str+1 can also be written for address
		}
		i++;
```

```
        }
        return NULL;
}
```

l. //mystrrchr

```
#include <stdio.h>
#include <string.h>
char * mystrrchr(char*, char*);
int main()
{
        char str1[15] = "Programming";
        char str2[1] = "i";

        char * res = mystrrchr(str1, str2);
        if(res != NULL){
                printf("Character found at index %d from last", res-str1);
        }else
        printf("Character not found");
}
char *mystrrchr(char* str1, char *str2){
        int i = 0;
        while(str1[i]!='\0'){
                i++;
        }
        int len = i;
        int j = len-1;
        while(str1[j]>0){
                if(str1[j] == str2[0]){
                        return &str1[j];
                }
                j--;
        }
        return NULL;
}
```

m. //mystrncmp

```
#include <stdio.h>
#include <string.h>
int mystrncmp(char*, char*, int);
int main()
{
        char str1[15] = "Comparison";
        char str2[4] = "Com";
        int n = 3;

        int res = mystrncmp(str1, str2, n);
```

```
        if(res == 0)
        printf("Str1 has %d characters similar to str2", n);
         else if (res < 0)
       printf("str1 is smaller than str2 in the first %d characters\n", n);
   else
      printf("str1 is greater than str2 in the first %d characters\n", n);

}
int mystrncmp(char* str1, char*str2, int n){
        int i = 0;
        while(str1[i]<n && str2[0]<n && str1[i]!=0 && str2[0]!=0){
                if(str1[0]!=str2[0] ){
                        return str1[i]-str2[i];
                }
                i++;
        }

        if(i==n || (str1[i]=='\0' && str2[i]=='\0'))
        return 0;

        return str1[i] - str2[i];
}
```

n.

```
#include <stdio.h>

char* mystrnstr( char *str1,  char *str2, int len);

int main() {
   char str1[] = "Hello, this is a test";
   char str2[] = "test";
   int len = 20;

   char *result = mystrnstr(str1, str2, len);
   if (result!=NULL) {
      printf("Found: %s\n", result);
   } else {
      printf("Not found\n");
   }

}

char *mystrnstr( char *str1, char *str2, int len) {
   if (!*str2) return (char *)str1; // If str2 is empty, return str1

   int i, j;
```

```
    for (i = 0; str1[i] && i < len; i++) {
        j = 0;
        while (str1[i + j] && str2[j] && str1[i + j] == str2[j] && (i + j) < len) {
            j++;
        }
        if (!str2[j]) { // If we reached the end of str2, match is found
            return (char *)(str1 + i);
        }
    }
    return NULL; // No match found
}
```

o. //mystrncat()

```
#include <stdio.h>
char* mystrncat(char*, char*, int);
char *mystrncat(char *dest, char *src, int n)
{
    char *ptr = dest;

    while (*ptr) {
        ptr++;
    }

    while (*src && n > 0) {
        *ptr = *src;
        ptr++;
        src++;
        n--;
    }

    *ptr = '\0';

    return dest;
}

int main() {
    char str1[20] = "Hello, ";
    char str2[] = "World!";

    mystrncat(str1, str2, 3);

    printf("Result: %s\n", str1);

    return 0;
}
```

```
    p.  //mystrncasecmp()
#include <stdio.h>
int mystrncasecmp( char*,  char* , int );
int mystrncasecmp( char *s1,  char *s2, int n)
{
   int i = 0;

   while (i < n && s1[i] && s2[i]) {
      char c1 = s1[i];
      char c2 = s2[i];

      if (c1 >= 'A' && c1 <= 'Z') {
         c1 = c1 + ('a' - 'A');
      }
      if (c2 >= 'A' && c2 <= 'Z') {
         c2 = c2 + ('a' - 'A');
      }

      if (c1 != c2) {
         return c1 - c2;
      }
      i++;
   }
   if (i < n) {
      return s1[i] - s2[i];
   }

   return 0;
}
int main() {
   char str1[] = "HelloWorld";
   char str2[] = "HELLOworld";

   int result = mystrncasecmp(str1, str2, 5);

   if (result == 0)
      printf("Strings are equal (case-insensitive).\n");
   else if (result < 0)
      printf("str1 is smaller than str2.\n");
   else
      printf("str1 is greater than str2.\n");

   return 0;
}
```