**ICS 103 – Computer Programming in C**
**Summer Semester 2008 (073)**
**Lab # 12**
**(Strings)**

**Objective:**
Learn how to use Strings.

**Discussion:**
The community of C programmers has developed the standard string library STRING.H,
which contains the most frequently used string-manipulation functions.

A. **Initializing a String**:
The general syntax for initializing a string is
char stringvar[stringSize] = stringLiteral;
char *stringvar = stringLiteral;

Example:
```
char aString[81] = "Hello World";
char aName[] = "Salman";
char *p = "C Language";
```

B. **The String Libraries**
The following table lists some frequently used string functions:

| No | Function | Prototype | Meaning | Example |
|----|----------|-----------|---------|---------|
| 1 | strcpy | char* strcpy(char* target, char* source) | It copies the characters from string source to string target. It assumes that the target string has enough space to contain the source string. | char name[41]; strcpy(name, "Hello"); |
| 2 | strlen | strlen(char *string) | It returns the number of characters in the parameter string. | i = strlen("Hello"); |
| 3 | strcmp | int strcmp(char* str1, char* str2) | It compares strings str1 and str2. The result is: < 0 when str1 is less than str2. = 0 when str1 is equal to str2. > 0 when str1 is greater than str2. | char a[] = "THIS"; char b[] = "this"; int i; i= strcmp(a, b); |
| 4 | stricmp | int stricmp(char* str1, char* str2) | It compares strings str1 and str2 without making a distinction between upper and lowercase characters. | char a[] = "THIS"; char b[] = "this"; int i; i= strcmp(a, b); |

**Exercise # 1**:

Write a program that reads a word (less than 25 characters) in small letters and then prints it in capital letters. Hints: refer to ASCII codes of characters in appendix A of your textbook.

*Sample Output*:
```
Enter a word > university
The word in capital letters is UNIVERSITY
```

**Exercise # 2**:

Write a program that reads 3 names (less than 15 characters each) and then prints them sorted alphabetically.

*Sample Output*:
```
Enter three names > Hamad Ali Basil
The names sorted alphabetically are:
Ali
Basil
Hamad
```

**Discussion about lab project.**