



Rajarata University of Sri Lanka
Faculty of Applied Sciences
COM 1407 – Computer Programming
Practical – Input / Output Functions

Outline

- Define the C standard functions for managing input output
- Apply taught concepts for writing programs.

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- When we say Input, it means to feed some data into a program. An input can be given in the form of a file or from the command line. C programming provides a set of built-in functions to read the given input and feed it to the program as per requirement.
 - When we say Output, it means to display some data on screen, printer, or in any file. C programming provides a set of built-in functions to output the data on the computer screen as well as to save it in text or binary files.

1 The Standard Files

- C programming treats all the devices as files. So devices such as the display are addressed in the same way as files and the following three files are automatically opened when a program executes to provide access to the keyboard and screen.

Standard File	File Pointer	Device
Standard Input	stdin	Keyboard
Standard Output	stdout	Screen
Standard Error	stderr	Your Screen

2 The getchar() and putchar() Functions

- The **int getchar(void)** function reads the next available character from the screen and returns it as an integer. This function reads only single character at a time.
- The **int putchar(int c)** function puts the passed character on the screen and returns the same character. This function puts only single character at a time.
- Try below example

```
#include <stdio.h>
int main( ) {

    int c;

    printf( "Enter a value :");
    c = getchar( );

    printf( "\nYou entered: ");
    putchar( c );

    return 0;
}
```

3 The gets() and puts() Functions

- The **char *gets(char *s)** function reads a line from stdin into the buffer pointed to by s until either a terminating newline or EOF (End of File).
- The **int puts(const char *s)** function writes the string 's' and 'a' trailing newline to stdout.

```
#include <stdio.h>
int main( ) {

    char str[100];

    printf( "Enter a value :");
    gets( str );

    printf( "\nYou entered: ");
    puts( str );

    return 0;
}
```

4 The scanf() and printf() Functions

- The **int scanf(const char *format, ...)** function reads the input from the standard input stream **stdin** and scans that input according to the format provided.
- The **int printf(const char *format, ...)** function writes the output to the standard output stream **stdout** and produces the output according to the format provided.
- The **format** can be a simple constant string, but you can specify %s, %d, %c, %f, etc., to print or read strings, integer, and character or float respectively.

```
#include <stdio.h>
int main( ) {

    char str[100];
    int i;

    printf( "Enter a value :");
    scanf("%s %d", str, &i);

    printf( "\nYou entered: %s %d ", str, i);

    return 0;
}
```

5 Exercises

- Write a C program that takes hours and minutes as input, and calculates the total number of minutes.
- Write a C program to find the third angle of a triangle if two angles are given.
- Write a C program to find the third angle of a triangle if two angles are given.
- Write a program that converts Centigrade to Fahrenheit.
- Write a C program that calculates the volume of a sphere.
- Write a C program that converts kilometers per hour to miles per hour.