C programming language provides many built-in functions to read any given input and to display data on screen when there is a need to output the result.

**Scanf() and Printf() functions**

The standard input-output header file, named stdio.h contains the definition of the functions printf() and scanf(), which are used to display output on screen and to take input from user respectively.

Ex : below code goes inside main function

// defining a variable

int i;

printf("Please enter a integer value...");

/\*

reading the value entered by the user

\*/

scanf("%d", &i);

/\*

displaying the number as output

\*/

printf( "\n You entered: %d", i);

Output :

/>Please enter a value..

/> 124

/> You entered:124

**Note :**

**printf()** function returns the number of characters printed by it, and scanf() returns the number of characters read by it.

Ex :

int i = printf("roomantech");

printf("\n number of characters printed is %d ",i);

Output : number of characters printed is 10

**Getchar and putchar functions**

The getchar() function reads a character from the terminal and returns it as an integer. This function reads only single character at a time. You can use this method in a [loop](http://www.studytonight.com/c/loops-in-c.php) in case you want to read more than one character. The putchar() function displays the character passed to it on the screen and returns the same character. This function too displays only a single character at a time. In case you want to display more than one characters, use putchar() method in a loop.

Ex :

Void main(){

int c;

printf("Enter a character");

/\*

Take a character as input and

store it in variable c

\*/

c = getchar();

/\*

display the character stored

in variable c

\*/

putchar(c);

}

**Gets and puts functions**

The gets() function reads string from user and puts() function prints the string. Both functions are defined in <stdio.h> header file.

#include<stdio.h>

void main()

{

/\* character array of length 100 \*/

char **str**[100];

printf("Enter a string");

gets( **str** );

puts( **str** );

}

**Difference between scanf() and gets()**

The main difference between these two functions is that scanf() stops reading characters when it encounters a space, but gets() reads space as character too.

If you enter name as **Hello world** using scanf() it will only read and store **Hello** and will leave the part after space. But gets() function will read it completely.

#include<stdio.h>

void main()

{

/\* character array of length 100 \*/

char str[100];

printf("Enter a string");

scanf("%s\n",str);

printf("%s",str);

}

//Input : Hello world

//output : Hello //world not printed

**Note :**

In Turbo C IDE, Getch function is used at the end of program to hold program execution, but the "holding" is simply a side-effect of its primary purpose, which is to wait until the user enters a character.

Output will wait until user press some button. Or else output closes automatically.(In Turbo C IDE)

Note : getch() vs getchar()

getchar() is a standard function that gets a character from the stdin.

getch() is non-standard. It gets a character from the keyboard (which may be different from stdin) and does not echo it**(does not print it).**

**Note : reading a character array or string**

Using **&** symbol will be optional

**Note :**

char name[5];

printf("enter name \n");

**scanf("%s", &name);**

printf("%s\n",name);

printf("enter name again \n");

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

printf("%s\n",name);