



C Programming

Tutorial for Beginners

LECTURE -

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Input / Output

- The process of giving instructions and command to computer is called “**Input**”.
- The process of getting results from computer is called “**Output**”.

Input Functions

- `scanf()`
- `gets()`
- `getch()`
- `getche()`

Output Functions

- `printf()`
- `puts()`



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printf() Function

This function is used to display output on computer screen. It is used to display **text**, **constants**, or **values of variables** on screen in specified format.

Syntax

```
printf("Format String", argument-list);
```



printf() Function

```
printf("Format String", argument-list);
```

Format String consists of text, format specifiers or escape sequences.

Argument List consists of constants, variables or expressions

```
printf("Addition of %d and %d is = %d \n", a, b, add);
```



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C Program Example

Writing C Program to calculate and print area of a square with given width and height.

In this Tutorial, we are using **Dev C++ 5.7.1** for coding





Format Specifiers

- **Format Specifier** is used to specify the format according to which values will be read and displayed. It determines **data type**, **field-width** and **format**.
- Three types of format specifiers: Integers, Character, String

Format Specifiers	Type
%d	Used for Integer Values (int)
%f	Used for Real values (float, double)
%C	Used for Single Character (char)
%s	Used for String (char [20])



Field-width Specifiers

The number of columns used to display a value on screen is called “**field-width**”. A **field-width specifier** describes the number of columns that should be used to print a value of screen.

```
printf("Addition = %5d", add);  
printf("Addition = %-5d", add);  
printf("Addition = %5.2f", add);  
printf("Addition = %-10.3d", add);
```



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Escape Sequence

- **Escape Sequences** are special characters used in format string to modify the format of output. These character are not displayed on screen.
- The characters always begin with backslash “\”.

Escape Sequences	Type
\n	Used to insert new line in output
\b	Used to insert backspace in output
\f	Used to insert blank paper (paper feed) in printed output
\r	Used to move cursor at the beginning of the current line.
\t	Used to insert a TAB in output.
\'	Used to print single quotes in output.
\"	Used to print double quotes in output.
\\	Used to print single backslash (\) in output.



C Program Example

Writing C Program to print following output using single printf statement.

```
*
* *
* * *
* * * *
* * * * *
1 2 3 4 5
6 7 8 9 10
```