

## Topic 3. Managing input and output operator

Answers remain same but style of asking questions are different .

**[Q] How will you Reading a character and Writing a character.**

Ans: We can read and write a character on screen using printf() and scanf() function but this is not applicable in all situations.

In C programming language some function are available which is directly read a character or number of character from keyboard.

### **getchar**

This is a predefined function in C language which is available in stdio.h header file. Using this function we can read a single character from keyboard and store in character variable. When we want to read a number of character form keyboard the store all the data in a character array.

#### **E.g**

```
char ch;  
ch=getch();  
getchar function has no any parameters.
```

### **gets**

This is a predefined function in C language which is available in stdio.h header file. This function is used to read a single string from keyboard.

#### **E.g**

```
gets(string);
```

### **putchar**

putchar function is a same as getchar but is function is used for display a character value of screen or console. This function must be take one parameters.

#### **E.g**

```
char ch='A';  
putchar (ch);  
putchar is equivalent to printf("%c",ch);
```

### **puts**

puts is same as gets function but this is used to display a string on screen or console. This function takes single arguments.

#### **E.g**

```
puts(str);
```

**[Q]Enlist different format specifier with its use.**

**Ans:**

Format specifier	Type of value
%d	Integer
%f	Float
%lf	Double
%c	Single character
%s	String
%u	Unsigned int
%ld	Long int
%lf	Long double

FORMAT SPECIFIER	USE
% c	Read /write a single character
% d	Read / write a decimal integer
% e	Read /write a floating point value
% f	Read /write a floating point value
% g	Read /write a floating point value
% h	Read /write a short integer
% i	Read /write a decimal, hexadecimal or octal integer
% o	Read /write an octal integer
% s	Read /write a string
% u	Read /write an unsigned decimal integer
% x	Read /write a 1, hexadecimal integer

**[Q] Give the syntax of input and output statement of C.**

**Ans: Syntax of input statement:**

```
scanf("control string",arg1,arg2,.....,argn);
```

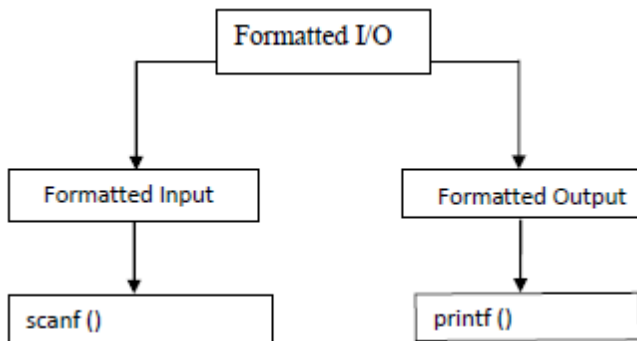
with variables names „&“ sign is required. Control string consists of field specifications consist of % and data specifier.

**Syntax of output statement:**

```
printf( "control string",arg1,arg2,.....argn");
```

**c) Explain formatted input-output.**

Ans: C has standard library functions to accept and display the data



**FORMATTED INPUT**

**Scanf:** It is a function used for accepting a value or a data from the keyboard.

scanf() is a predefined function in "stdio.h" header file. It can be used to read the input value from the keyword.

**Syntax:**

```
Scanf("format string", & variable1, & variable2 .....);
```

```
scanf("format specifiers",&value1,&value2,.....);
```

**Example:**

```
int a;
```

```
scanf ("%", &a); &a □ address of variable
```

```
Int a;
```

```
float b;
```

```
scanf("%d%f",&a,&b);
```

Format specifier is a special character in the C language used to specify the data type of value.

Format String	Meaning	Example	Result
%d	Reads a decimal Integer	Scanf ("%d",&num);	%d accepts the digit number from user and it will get stored in num variable.
%c	Reads a single character	Sanf ("%c, &ch);	%c accepts the character form user and it will get stored in 'ch' variable.
%f	Reads a float value	Sacnf ("%f" &num);	% f accepts the float number from the user and it will get stored in num variable.
%s	Reads a string	Scanf ("%s",str); (& is not required for string)	%s accepts the string from user and it will get stored in 'str' variable.

## FORMATTED OUTPUT

Printf is a predefined function in "stdio.h" header file, by using this function, we can print the data or user defined message on console or monitor.

While working with printf(), it can take any number of arguments but first argument must be within the double cotes (" ") and every argument should separated with comma ( , ) Within the double cotes, whatever we pass, it prints same, if any format specifies are there, then that copy the type of value.

The scientific name of the monitor is called console.

**printf:** It is a function used for displaying a value or a data on the screen.

### Syntax:

```
printf("format string", variable1,variable2,.....);
printf("user defined message");
printf("Format specifiers",value1,value2,..);
```

### Example:

```
int a =5;
printf ("%d",a); □ displays 5 on screen
int a=10;
double d=13.4;
printf("%f%d",d,a);
```

Format String	Meaning	Example	Result
%d	Prints a decimal Integer	int num = 5; Printf ("%d", num);	5
%c	Prints a single character	Char ch = 'r'; Printf ("%c", ch);	r
%f	Prints a float value	Float num = 14.44; Printf ("%f", num)	14.44
%s	Prints a string	Char str[] = "goodmorning"; Printf ("%s", str);	goodmorning

```

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[ ] \TC\SS.C [ ]
#include<stdio.h>
#include<conio.h>
void main()
{
int a;
float b;
clrscr();
printf("Enter value of a and b: ");
scanf("%d%f", &a, &b);

printf("Print value of a: %d and b: %f", a, b);
getch();
}

```

↑
← %f for float value

↑
← %d for integer value

14:11

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## Out of syllabus But IMP : clrscr() and getch() in C

clrscr() and getch() both are predefined function in "conio.h" (console input output header file).

### Clrscr()

It is a predefined function in "conio.h" (console input output header file) used to clear the console screen.

It is a predefined function, by using this function we can clear the data from console (Monitor). Using of clrscr() is always optional but it should be place after variable or function declaration only.

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

```
void main()
{
int a=10, b=20;
int sum=0;
clrscr(); // use clrscr() after variable declaration
sum=a+b;
printf("Sum: %d",s);
getch();
}
```

**Output** :30

Getch()

It is a predefined function in "conio.h" (console input output header file) will tell to the console wait for some time until a key is hit given after running of program.

By using this function we can read a character directly from the keyboard. Generally getch() are placing at end of the program after printing the output on screen.

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

```

int a=10, b=20;
int sum=0;
clrscr();
sum=a+b;
printf("Sum: %d",s);
getch(); // use getch() befor end of main()
}

```

**output**

Sum 30

```

File Edit Search Run Compile Debug Project Options Window Help
\TC\SS.C
#include<stdio.h>
#include<conio.h>
void main()
{
int no;
clrscr();
printf('enter the any number= ');
scanf('%d', &no);
if(no%2==0)
{
printf('Even number');
}
else
{
printf('odd number');
}
getch();
}

```

Use After Declaration

use before end of program

1:25

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**[Q]What is the use of indirection operator (\*)?**

**Ans:** Indirection operator \* is used in “C” language to get the value stored at the address pointed by any pointer variable. It can also be used in pointer declaration just to indicate the type of the variable is a pointer type.

For example :

- 1) int a, \*ptr; //here a is any integer variable and ptr is an integer pointer.
- 2) a=5; // a is assigned value 5.
- 3) ptr=&a; // address of a is stored in ptr
- 4) printf(“%d %d”, a, \*ptr); // will print the output as 5 5 as \*ptr uses indirection operator to get the value stored at address pointed by ptr.

=====AND THAT IS END OF CHAPTER 3=====

