Unit 2 Input/output & Control Statements.

- Lesson 1 → formatted & Unformatted I/O

Q- What are formatted I/O?

Ans These are used to take various inputs from the user and display multiple output to the user. These types of I/O functions can help to display the output to the user in different formats using the format specifiers. These I/O supports all data types like int, float, char, and many more.

Console Input/output function

formatted Input/output function		
Type	Input	Output
Char	Scanf()	Printf()
int	Scanf()	Printf()
float	Scanf()	Printf()
String	Scanf()	Printf()

Unformatted Input/output function		
Type	Input	Output
Char	getch() getche() getchar()	Putch() Putchar()
int	-	-
float	-	-
String	gete()	Pute()

Q- Why they are called formatted I/O?

Ans. Because we can use format specifiers in these functions and hence, we can format these functions according to our needs.

S.No	format Specifier	Type	Description.
1	%d	int/signed int	Used for I/O signed integer value.
2.	%c	char	Used for I/O character values
3.	%f	float	Used for I/O decimal floating point value
4.	%s	String	Used for I/O string/ group of characters.
5.	%Ld	Long int	Used for I/O long signed integer value

- Printf()

Is used in a C program to display any value Like float integer, character, string, etc on the console screen. It is a pre-defined function that is already declared in the stdio.h(headerfile).

Printf("format Specifier", var1, var2, ..., varn);

Syntax of printf()

```
#include <stdio.h>
// Drive code
int main()
{
// Declaring an int type variable
   int a;
// Assigning a value in a variable.
   a = 20;
// Printing the value of a variable.
   Printf("%d",&a);
   return 0;
}
```

- Scanf()

In Scanf() function we use & (address of operator) which is used to store the variable value on the memory location to of that variable.

Scanf("formad Specifier", &var1, &var2, ..., &varn);

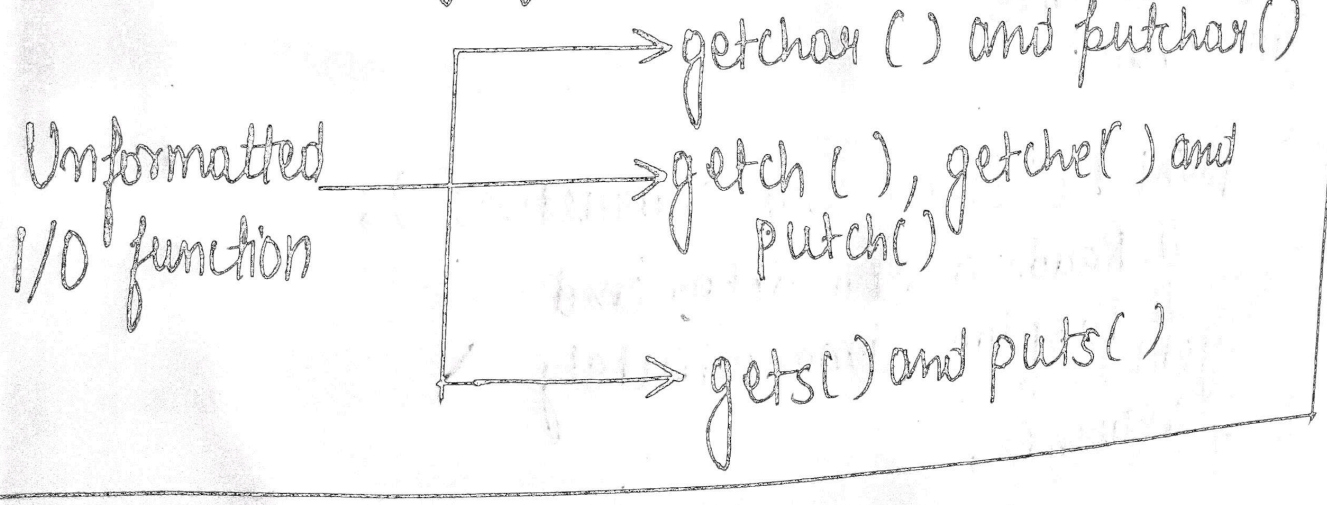
Syntax of Scanf()

```
#include <Stdio.h>
int main()
{ int num1;
Printf("Enter a integer number:");
 Scanf("%d", &num1);
 Printf("You have entered %d", num1);
 return 0;
}
```

Q- What are unformatted Input/Output function?

Unformatted I/O function are used in only for character data type or character array / String and cannot be used for any other datatype. These functions are used to read single input from the user at the console and it allows to display the value at the console.

Unformatted Input / Output functions with Example C language



Q. Why they are called as unformatted I/O?

Ans→ These functions are called unformatted I/O functions because we cannot use format specifiers in these functions and hence, cannot format these functions according to our needs.

Examples: getch() getche() getchar()
putchar() gets() puts() putch()

getch() and getch()

```
getch();
   or
variable-name = getch();
```

Syntax

```
getch();
   or
variable_name = getche();
```

```
// C Program to implement
// the getche() function.
#include <conio.h>
#include <stdio.h>
// Driver code
int main()
{
    Printf("Enter any Character: ");
    // Reads a character and
    // Displays immediately
    getche();
    return 0;
}
```

getchar():

Variable_name=getchar();

Syntax

Putchar():

Putchar(variable_name);

```
#Include <conio.h>
# include <Stdio.h>
// Driver code
int main()
{ char ch;
  Printf ("Enter any character:");
  // Reads a character.
     ch = getchar();
  // Displays that character
    Putchar (ch);
  return 0;
}
```

```
gets()
Puts(Identifier_name);
```

Char str [Length of string in number]; // Declare a char type variable of any length.

```
gets(str);
```