UNIT 3

Input and Output LAB

A. FORMATTED INPUT OUTPUT:

a. scanf()-Formatted Input:

1. WAP to show the usage of whitespace character in scanf() function.

```
#include<stdio.h>
int main(){
        int n;
        char c;
        printf("Enter a number:");
        scanf("%d",&n);
        printf("\nEnter a character:");
        scanf(" %c",&c);     //Note a space before %c
        printf("\nNumber=%d \t Character=%c",n,c);
        return 0;
}
```

Note:

The %c conversion specifier **won't automatically skip any leading whitespace**, so if there's a stray **newline in the input stream** (from a previous entry, for example) the **scanf call will consume it immediately**.

The **blank** in the format **string tells scanf to skip leading whitespace**, and **the first non-whitespace character will be read** with the %c conversion specifier.

2. WAP to show the use of ordinary character in control string of scanf() function.

```c
#include<stdio.h>

int main(){

    int day,month,year;

    printf("Enter your date of birth in sequence day, month and year separated by / character:");

    scanf("%d/%d/%d",&day,&month,&year);

    printf("Your date of birth is: %d day  %d month  %d year.",day,month,year);

    return 0;

}
```

3. WAP to read marks of a student in a subject. The input marks should be less than 100 (i.e. only two digits).

```c
#include<stdio.h>

int main(){

    int marks;

    printf("Enter your marks in C:");

    scanf("%2d",&marks);

    printf("Your entered marks=%d",marks);

    return 0;

}
```

4. WAP to skip input field by specifying character * in scanf() function.

```
#include<stdio.h>

int main(){

        int a,b,c;

        printf("Enter three numbers:");

        scanf("%d%*d%d",&a,&b,&c);   // Note: * indicates that the field is to be read but ignored

        printf("a=%d \t b=%d \t c=%d",a,b,c);

        return 0;

}
```

5. WAP to input string from user and display it on screen.

```
#include<stdio.h>

int main(){

        char name[20];

        printf("Enter your name:");

        scanf("%s",name);

        printf("Your name is: %s",name);

        return 0;

}
```

6. WAP to take input string from user. Your program should allow to input uppercase letter only.

```
#include<stdio.h>

int main(){

        char name[20];

        printf("Enter your name in uppercase:");

        scanf("%[A-Z]",name);
```

printf("Your name is: %s",name);

return 0;

}

7. WAP to read a string with multiple words (i.e. with space) using scanf() function and display on the screen.

#include<stdio.h>

int main(){

    char name[20];

    printf("Enter your full name:");

    scanf("%[^\n]",name);

    printf("Your name is: %s",name);

    return 0;

}

b. printf()-Formatted Output:

8. What is the output of the following program? [Integer output].

#include<stdio.h>

int main(){

    int n=1234;

    float m=12.31456;

    printf(" n=%d",n);

    printf("\n n=%6d",n);

    printf("\n n=%2d",n);

    printf("\n n=%-6d",n);

    printf("\n n=%06d",n);

    printf("\n n=%.2f",m);

```
        return 0;

}
```

9. What is the output of the following program? [character output]

```
#include<stdio.h>

int main(){

        char ch='A';

        printf("ch=%2c",ch);

        printf("\nch=%5c",ch);

        printf("\nch=%-5c",ch);

        return 0;

}
```

10. What is the output of the following program? [String output].

```
#include<stdio.h>

int main(){

        char str[10]="MY NEPAL";

        printf("%s",str);

        printf("\n%10s",str);

        printf("\n%-10s",str);

        printf("\n%.4s",str);

        printf("\n%4s",str);

        printf("\n%10.6s",str);

        printf("\n%-10.6s",str);

        return 0;

}
```

11. WAP to display an integer, a float and a string value using single printf() function.

```
#include<stdio.h>

int main(){

        int a=10;

        float b=2.5;

        char name[4]="Ram";

        printf("integer=%d \t float=%f \t string=%s",a,b,name);

        return 0;

}
```

B. UNFORMATTED INPUT OUTPUT

12. WAP to read a character from keyboard using getchar() function and display on the screen using putchar() function.

```
#include<stdio.h>

int main(){

        char gender;

        printf("Enter your gender:");

        gender=getchar();

        printf("Your gender is:");

        putchar(gender);

        return 0;

}
```

'OR' without using getchar() and putchar() functions

```
#include<stdio.h>

int main(){
```

```
        char gender;

        printf("Enter your gender:");

        scanf("%c",&gender);

        printf("Your gender is:%c",gender);

        return 0;

}
```

13. WAP to read two characters from keyboard: one using getch() & another using getche() function and displays the characters using putch() function.

```
#include<stdio.h>

#include<conio.h>

int main(){

        char a,b;

        printf("Enter 1st character:");

        a=getch();

        printf("\nEnter 2nd character:");

        b=getche();

        printf("\n1st character: ");

        putch(a);

        printf("\n2nd character: ");

        putch(b);

        return 0;

}
```

14. WAP to read a string with multiple words (i.e string with space) using gets() function and display on the screen using puts() function.

```c
#include<stdio.h>

#include<conio.h>

int main(){

        char name[20];

        printf("Enter your name:");

        gets(name);

        printf("Your name is:");

        puts(name);

        return 0;

}
```