

# Assienment 1 c progaming ( LAB BOOK )

1) Write a C Program to demonstrate the working of arithmetic operators (Associativity and precedence of arithmetic operators is expected)

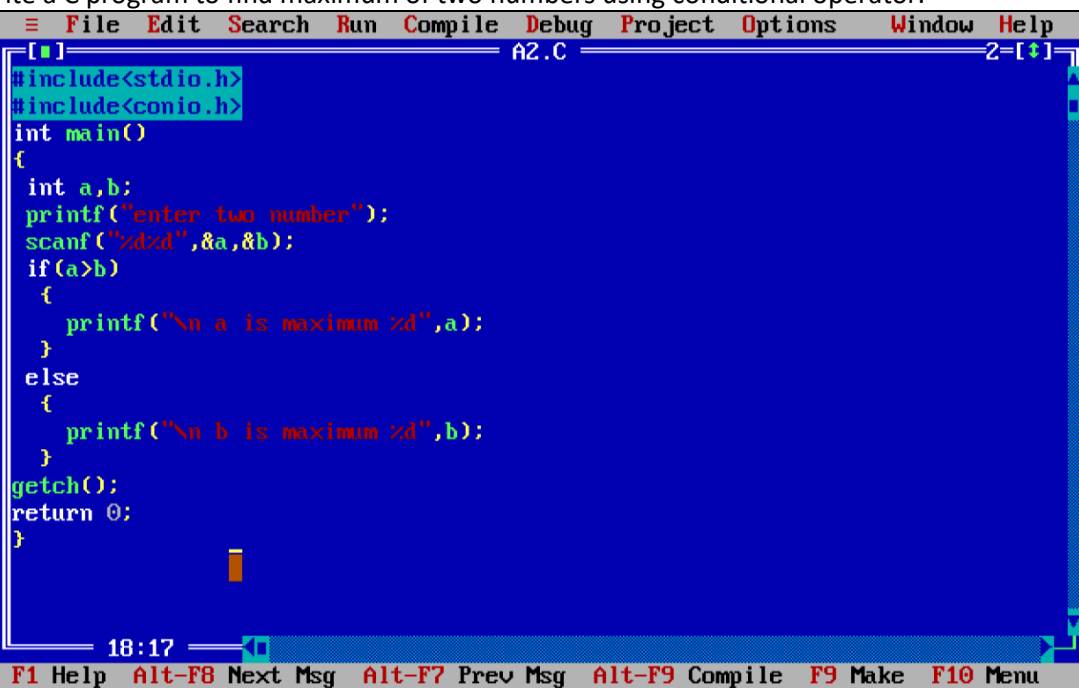
```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b,c,ch;
    clrscr();
    printf("enter two number");
    scanf("%d%d",&a,&b);
    printf("\n 1: addition\n 2: subtraction\n 3: multiplication\n 4: division");
    printf("\n enter your choice");
    scanf("%d",&ch);
    switch(ch)
    {
        case 1: c=a+b;
                printf("\n addition=%d",c);
                break;
        case 2: c=a-b;
                printf("\n subtrction=%d",c);
                break;
        case 3: c=a*b;
                printf("\n multiplication=%d",c);
                break;
        case 4: c=a/b;
                printf("\n devision=%d",c);
                break;
    }
    getch();
    return 0;
}
```

enter two number 500 500

1: addition  
2: subtraction  
3: multiplication  
4: division  
enter your choice 1

addition=1000\_

2) Write a C program to find maximum of two numbers using conditional operator.



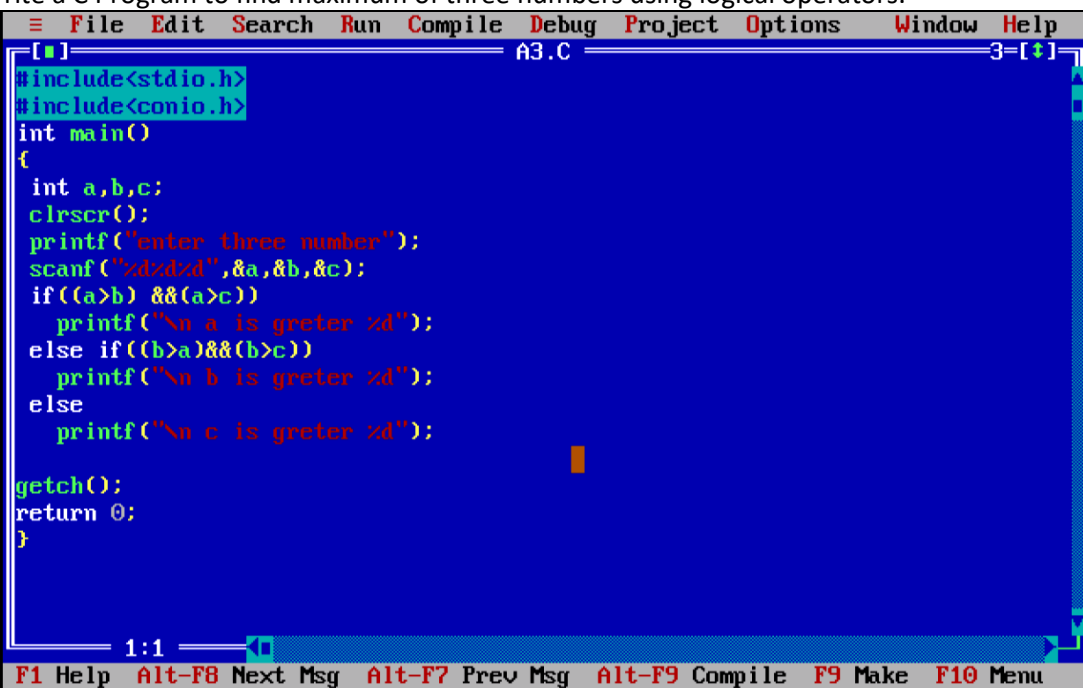
The screenshot shows the Turbo C++ IDE with the following code in the editor:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b;
    printf("enter two number");
    scanf("%d%d",&a,&b);
    if(a>b)
    {
        printf("\n a is maximum %d",a);
    }
    else
    {
        printf("\n b is maximum %d",b);
    }
    getch();
    return 0;
}
```

The IDE interface includes a menu bar (File, Edit, Search, Run, Compile, Debug, Project, Options, Window, Help), a toolbar, and a status bar at the bottom with function key shortcuts (F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, F10 Menu). The file name is A2.C and the cursor is at line 18, column 17.

```
enter two number 23 45  
  
b is maximum 45
```

3 . Write a C Program to find maximum of three numbers using logical operators.



The screenshot shows a Turbo C++ IDE window titled "A3.C". The code is as follows:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b,c;
    clrscr();
    printf("enter three number");
    scanf("%d%d%d",&a,&b,&c);
    if((a>b) &&(a>c))
        printf("\n a is greter %d");
    else if((b>a)&&(b>c))
        printf("\n b is greter %d");
    else
        printf("\n c is greter %d");

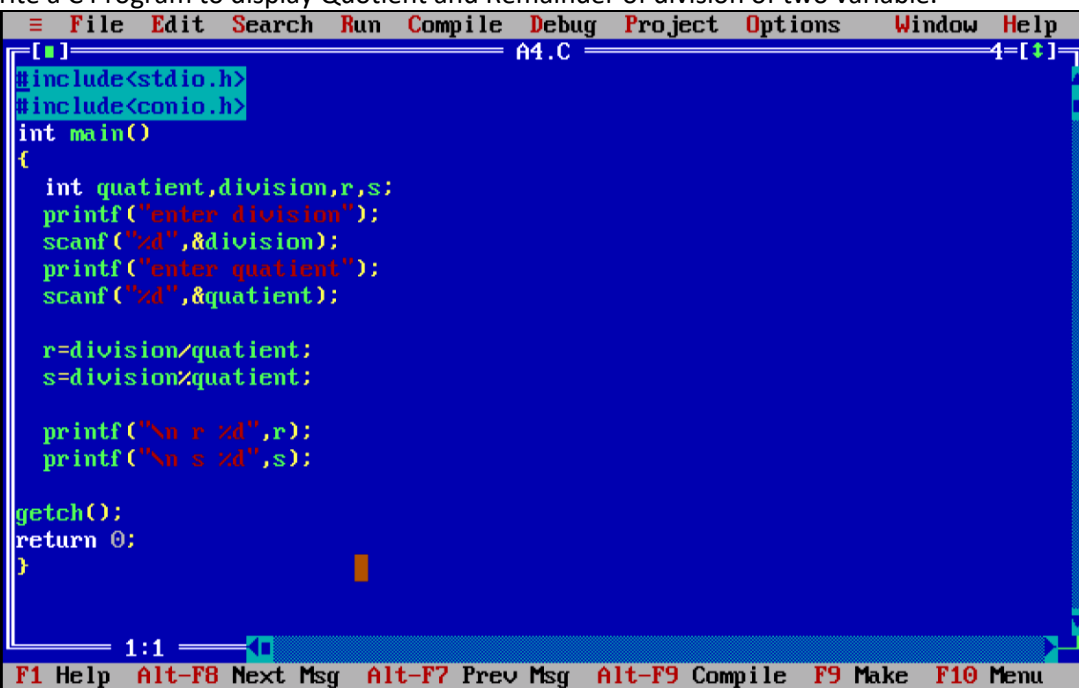
    getch();
    return 0;
}
```

The IDE interface includes a menu bar with File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. A status bar at the bottom shows function key shortcuts: F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, and F10 Menu. The cursor is positioned at the end of the last line of code.

```
enter three number 23 45 67

c is greter 67_
```

4) Write a C Program to display Quotient and Remainder of division of two variable.



The screenshot shows the Turbo C++ IDE with a C program for calculating the quotient and remainder of two numbers. The program is named 'A4.C' and is displayed in a window with a blue background. The code is as follows:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int quotient,division,r,s;
    printf("enter division");
    scanf("%d",&division);
    printf("enter quotient");
    scanf("%d",&quotient);

    r=division/quotient;
    s=division%quotient;

    printf("\n r %d",r);
    printf("\n s %d",s);

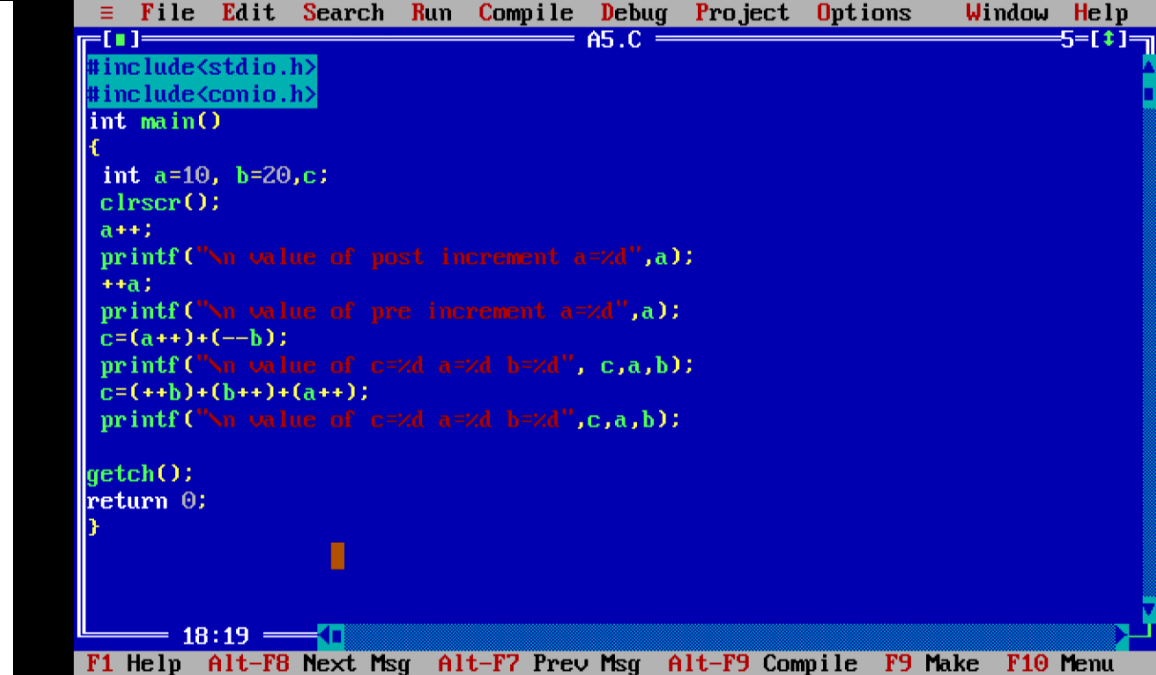
    getch();
    return 0;
}
```

The IDE interface includes a menu bar at the top with options: File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. At the bottom, there is a status bar with function key shortcuts: F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, and F10 Menu. The cursor is positioned at the end of the last line of code.

```
enter division 45
enter quotient 23

r 1
s 22
```

5) Write a C Program which illustrate increment and decrement operators (Use of Pre and Post increment is expected)



```
File Edit Search Run Compile Debug Project Options Window Help
A5.C
#include<stdio.h>
#include<conio.h>
int main()
{
    int a=10, b=20, c;
    clrscr();
    a++;
    printf("\n value of post increment a=%d", a);
    ++a;
    printf("\n value of pre increment a=%d", a);
    c=(a++)+(--b);
    printf("\n value of c=%d a=%d b=%d", c, a, b);
    c=(++b)+(b++)+(a++);
    printf("\n value of c=%d a=%d b=%d", c, a, b);

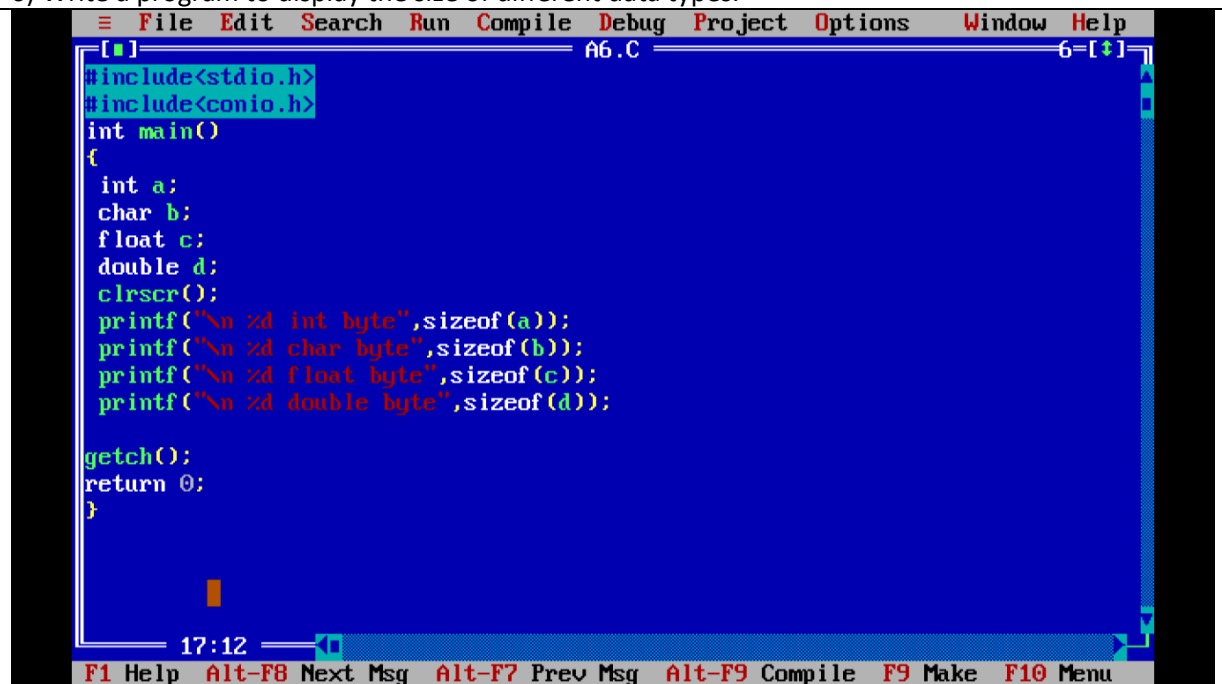
    getch();
    return 0;
}
```

18:19

F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu

```
value of post increment a=11
value of pre increment a=12
value of c=31 a=13 b=19
value of c=53 a=14 b=21_
```

6) Write a program to display the size of different data types.



The screenshot shows the Turbo C++ IDE with a program to display the size of different data types. The program is named A6.C and is located in the 6th directory. The code is as follows:

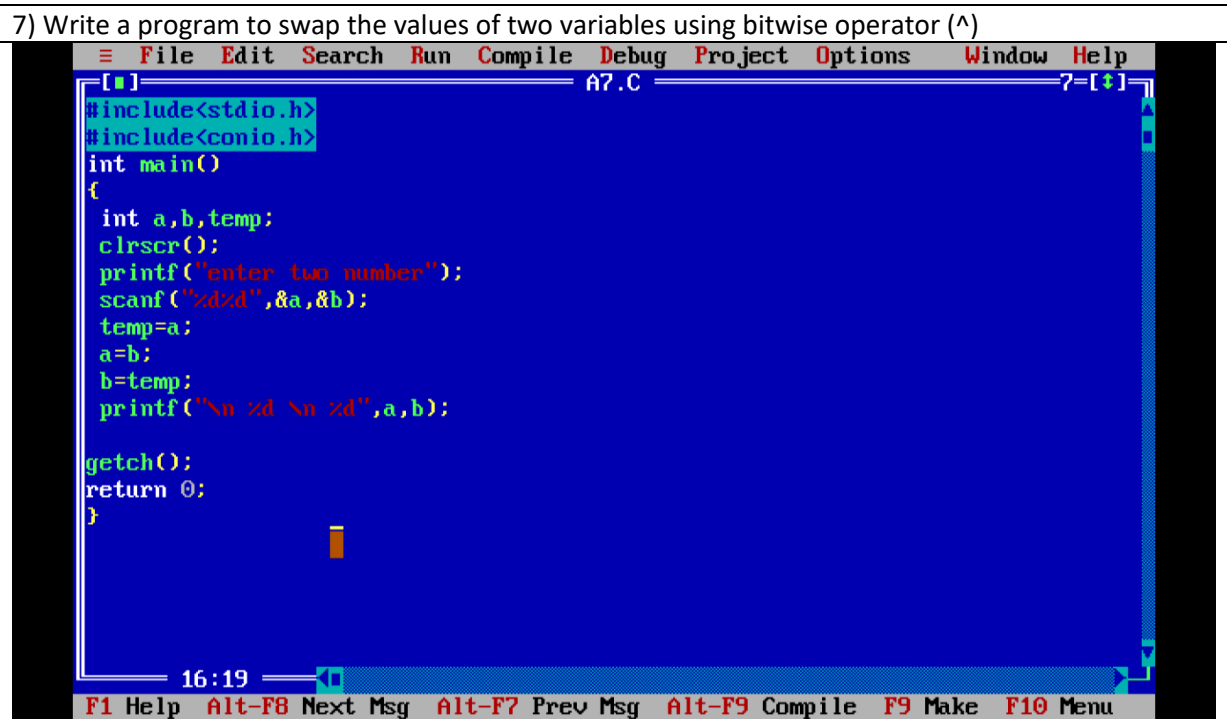
```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a;
    char b;
    float c;
    double d;
    clrscr();
    printf("\n %d int byte",sizeof(a));
    printf("\n %d char byte",sizeof(b));
    printf("\n %d float byte",sizeof(c));
    printf("\n %d double byte",sizeof(d));

    getch();
    return 0;
}
```

The IDE interface includes a menu bar with File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. The status bar at the bottom shows the time 17:12 and various function key shortcuts: F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, and F10 Menu.

```
2 int byte
1 char byte
4 float byte
8 double byte
```

7) Write a program to swap the values of two variables using bitwise operator (^)



The screenshot shows the Turbo C++ IDE with a program named A7.C. The program uses the XOR bitwise operator (^) to swap the values of two integers, a and b, without using a temporary variable. The code is as follows:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b,temp;
    clrscr();
    printf("enter two number");
    scanf("%d%d",&a,&b);
    temp=a;
    a=b;
    b=temp;
    printf("\n %d \n %d",a,b);

    getch();
    return 0;
}
```

The IDE interface includes a menu bar (File, Edit, Search, Run, Compile, Debug, Project, Options, Window, Help) and a status bar at the bottom with function key shortcuts (F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, F10 Menu). The cursor is positioned at line 16, column 19.

enter two number 55 22

22

55

8) Write a C program which illustrate the use of Bitwise And, Bitwise Or and Bitwise XOR Operator).

```
File Edit Search Run Compile Debug Project Options Window Help
A8.C
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b,res;
    clrscr();
    printf("\n enter 2 number");
    scanf("%d%d",&a,&b);
    res=a&b;
    printf("\n a&b=%d",res);
    res=a|b;
    printf("\n a|b=%d",res);
    res=a^b;
    printf("\n a^b=%d",res);
    res=a<<3;
    printf("\n left shift of a a<<3=%d",res);
    res=~a;
    printf("\n ones compliment of a=%d",res);

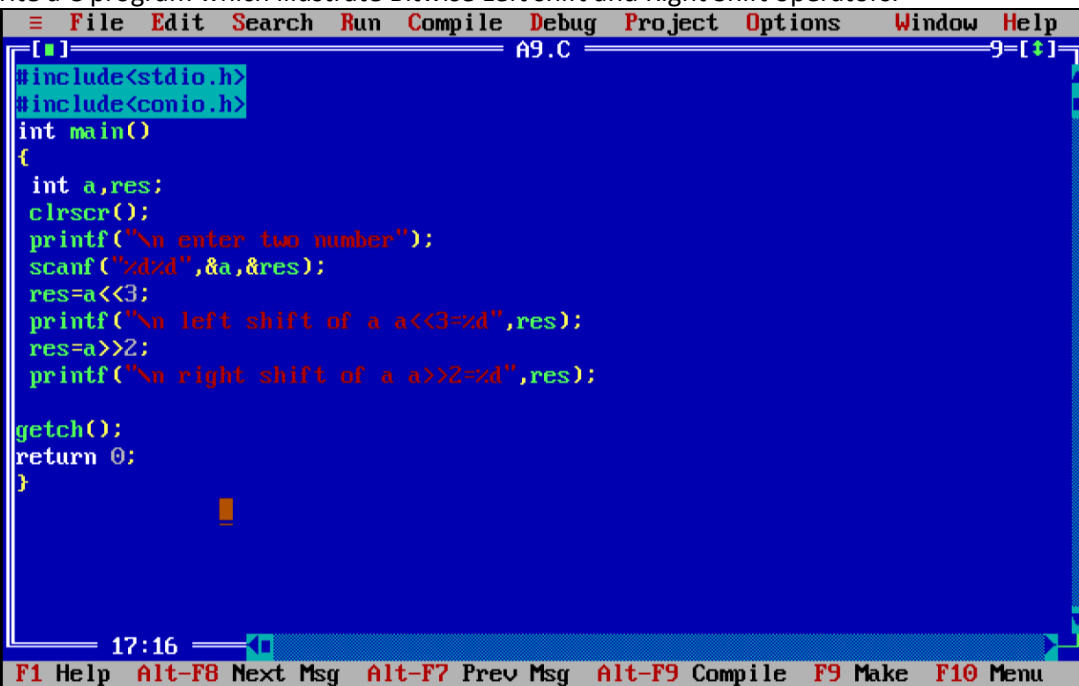
    getch();
    return 0;
}
1:1
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu
```



```
enter 2 number 55 11

a&b=3
a|b=63
a^b=60
left shift of a a<<3=440
ones compliment of a=-56_
```

9) Write a C program which illustrate Bitwise Left shift and Right Shift operators.



The screenshot shows a Turbo C++ IDE window titled "A9.C". The code inside the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,res;
    clrscr();
    printf("\n enter two number");
    scanf("%d%d",&a,&res);
    res=a<<3;
    printf("\n left shift of a a<<3=%d",res);
    res=a>>2;
    printf("\n right shift of a a>>2=%d",res);

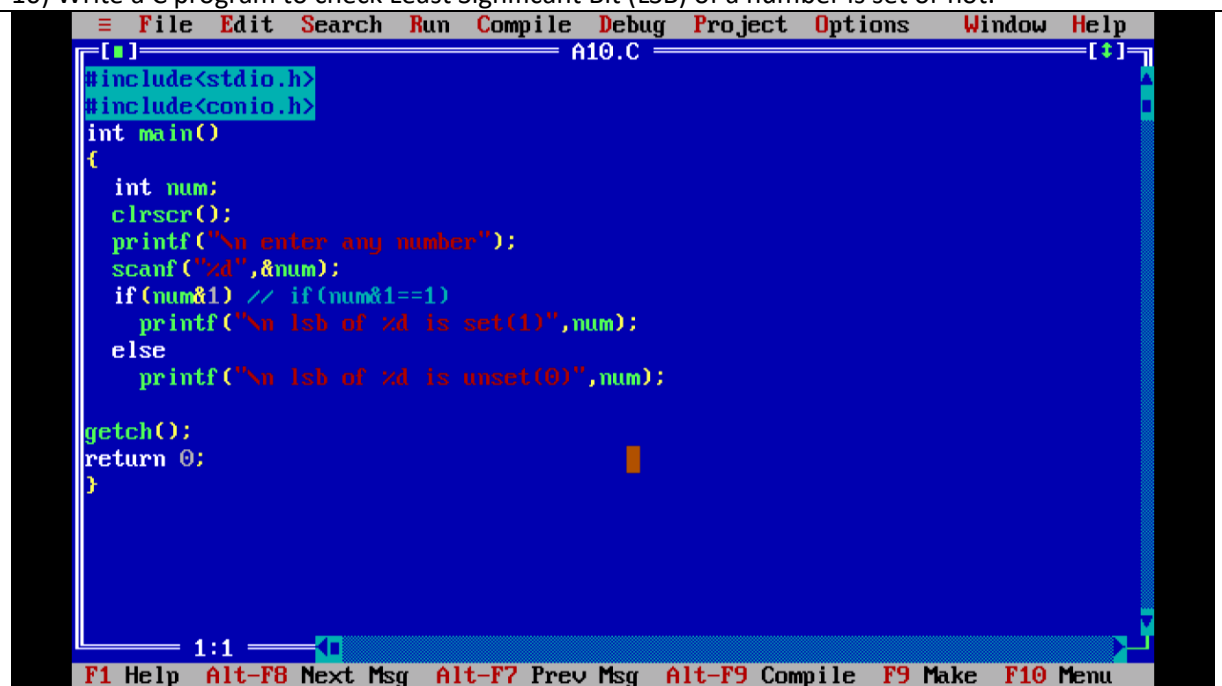
    getch();
    return 0;
}
```

The IDE interface includes a menu bar with File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. A status bar at the bottom shows function key shortcuts: F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, and F10 Menu. The cursor is positioned at line 17, column 16.

```
enter two number 10 20

left shift of a a<<3=80
right shift of a a>>2=2
```

10) Write a C program to check Least Significant Bit (LSB) of a number is set or not.



The screenshot shows the Turbo C++ IDE with the following C program code in the editor window titled 'A10.C':

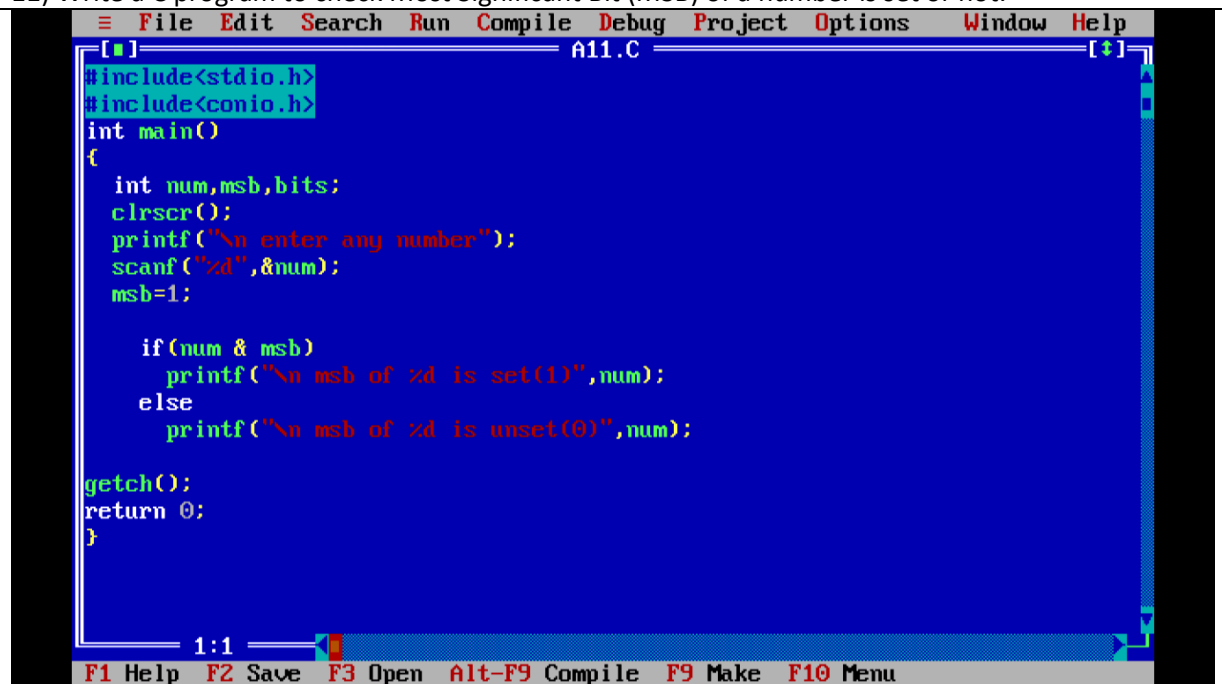
```
#include<stdio.h>
#include<conio.h>
int main()
{
    int num;
    clrscr();
    printf("\n enter any number");
    scanf("%d",&num);
    if (num&1) // if (num&1==1)
        printf("\n lsb of %d is set(1)",num);
    else
        printf("\n lsb of %d is unset(0)",num);

    getch();
    return 0;
}
```

The IDE interface includes a menu bar with File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. The status bar at the bottom shows function key shortcuts: F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, and F10 Menu. The editor window has a blue background and a white border. The file name 'A10.C' is displayed in the title bar. The line numbers 1:1 are shown in the bottom left corner of the editor window.

```
enter any number 54  
lsb of 54 is unset(0)
```

11) Write a C program to check Most Significant Bit (MSB) of a number is set or not.



The screenshot shows a Turbo C++ IDE window titled "A11.C". The code is as follows:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int num,msb,bits;
    clrscr();
    printf("\n enter any number");
    scanf("%d",&num);
    msb=1;

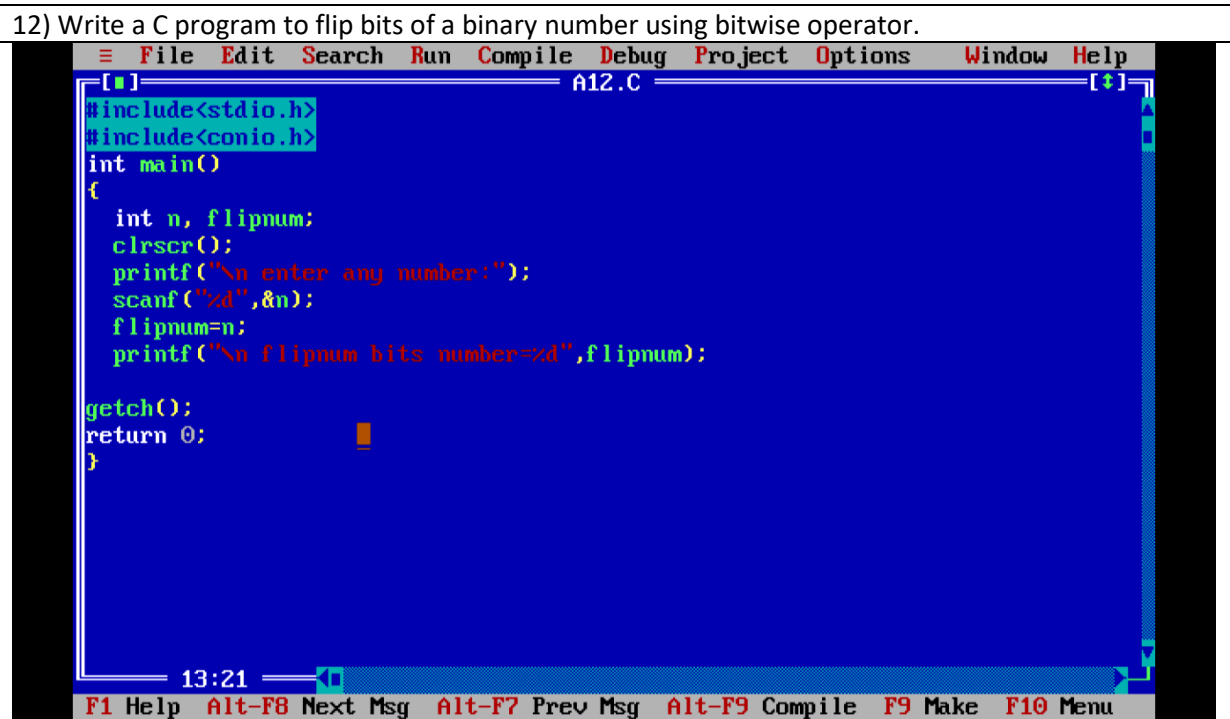
    if(num & msb)
        printf("\n msb of %d is set(1)",num);
    else
        printf("\n msb of %d is unset(0)",num);

    getch();
    return 0;
}
```

The IDE interface includes a menu bar with File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. A status bar at the bottom shows function key shortcuts: F1 Help, F2 Save, F3 Open, Alt-F9 Compile, F9 Make, and F10 Menu. The cursor is positioned at the end of the code.

```
enter any number 45  
msb of 45 is set(1)
```

12) Write a C program to flip bits of a binary number using bitwise operator.



The screenshot shows a Turbo C++ IDE window titled "A12.C". The code is as follows:

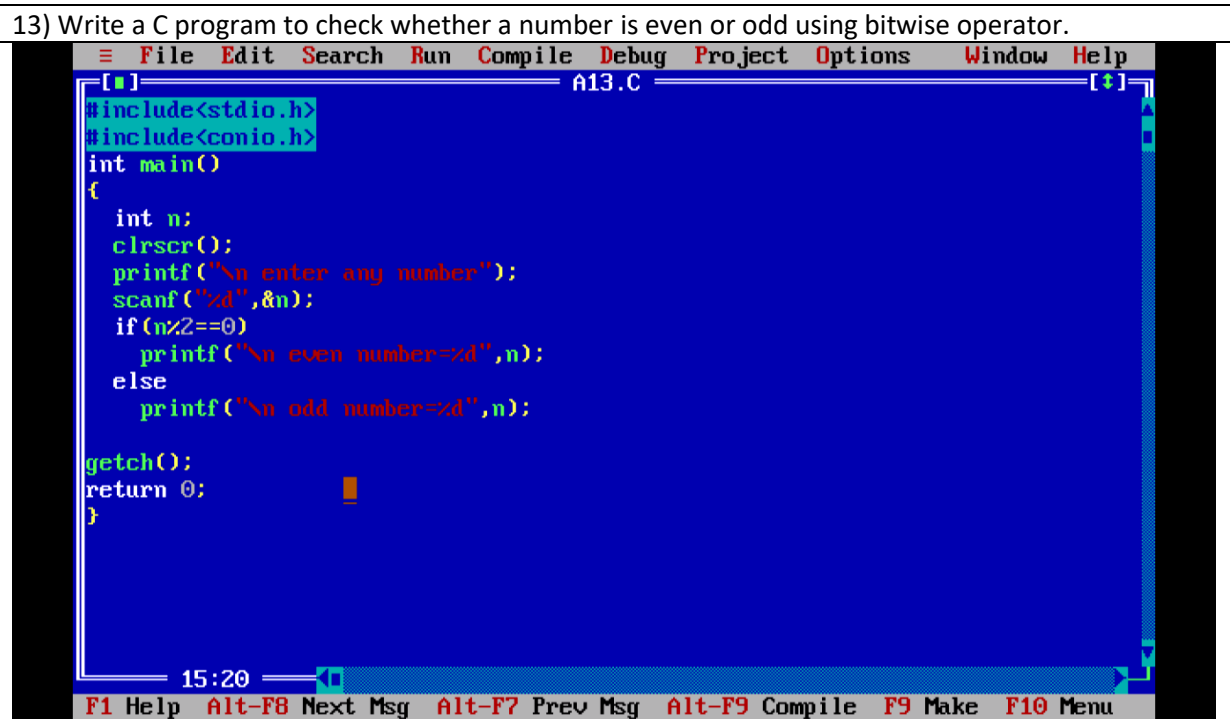
```
#include<stdio.h>
#include<conio.h>
int main()
{
    int n, flipnum;
    clrscr();
    printf("\n enter any number:");
    scanf("%d",&n);
    flipnum=n;
    printf("\n flipnum bits number=%d",flipnum);

    getch();
    return 0;
}
```

The IDE interface includes a menu bar with File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. A status bar at the bottom shows function key shortcuts: F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, and F10 Menu. The system clock in the bottom left corner displays 13:21.

```
enter any number: 78  
flipnum bits number=78_
```

13) Write a C program to check whether a number is even or odd using bitwise operator.



The screenshot shows the Turbo C++ IDE with the following code in a13.C:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int n;
    clrscr();
    printf("\n enter any number");
    scanf("%d",&n);
    if (n%2==0)
        printf("\n even number=%d",n);
    else
        printf("\n odd number=%d",n);

    getch();
    return 0;
}
```

The IDE interface includes a menu bar (File, Edit, Search, Run, Compile, Debug, Project, Options, Window, Help), a status bar (15:20), and a function key bar (F1 Help, Alt-F8 Next Msg, Alt-F7 Prev Msg, Alt-F9 Compile, F9 Make, F10 Menu).

```
enter any number 15
```

```
odd number=15_
```