

```
//2.27 with 8 printf statement
#include <stdio.h>
#include <stdlib.h>
main()
{
    printf("*****\n*****\n*****\n*****\n*****\n*****\n*****\n*****");
}
```

E:\C Language Programs\Print 8 steric\bin\Debug\Print 8 steric.exe

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

Process returned 0 (0x0) execution time : 0.051 s
Press any key to continue.

here X main.c X

```
1 // Finding output
2 //A. c
3 #include <stdio.h>
4 main( )
5 {
6     int sub[50], i ;
7     for ( i = 0 ; i <= 48 ; i++ ) ;
8     {
9         sub[i] = i ;
10        printf ( "\n%d", sub[i] ) ;
11    }
12 }
```

E:\C Language Programs\Array EXE\A) a\main.exe

49

Process returned 0 (0x0) execution time : 0.047 s

Press any key to continue.

overflow and underflow.cpp | miles into kilometers.cpp

```
1  /*Write a program that converts 2.5 miles into kilometers and displays the result on screen*/
2  #include<stdio.h>
3  main()
4  {
5      float mil=2.5;
6      printf("Mile=%f\nKilometers=%f",mil,mil*1.609);
7 }
```

The screenshot shows a terminal window titled "E:\C Language Programs\miles into kilometers.exe". The window contains the following text:
Mile=2.500000
Kilometers=4.022500
Process exited after 0.008239 seconds with return value 0
Press any key to continue . . .

```
1 // Write a program that inputs base and height from the user and
2 // calculates area of a triangle by using the formula area=1/2*base*height
3 #include <stdio.h>
4 #include <conio.h>
5 int main()
6 {
7     float base,height;
8     double area;
9     printf("Enter the base of triangle:");
10    scanf("%f", &base);
11    printf("Enter the height of triangle:");
12    scanf("%f", &height);
13    area=0.5*base*height;
14    printf("Area of triangle is %5.2f", area);
15    return 0;
16 }
```

E:\C Language Programs\Formula of triangle\bin\Debug\Formula of triangle.exe

```
Enter the base of triangle:10.5
Enter the height of triangle:5.4
Area of triangle is 28.35
Process returned 0 (0x0) execution time : 5.743 s
Press any key to continue.
```

print steric triangle.cpp

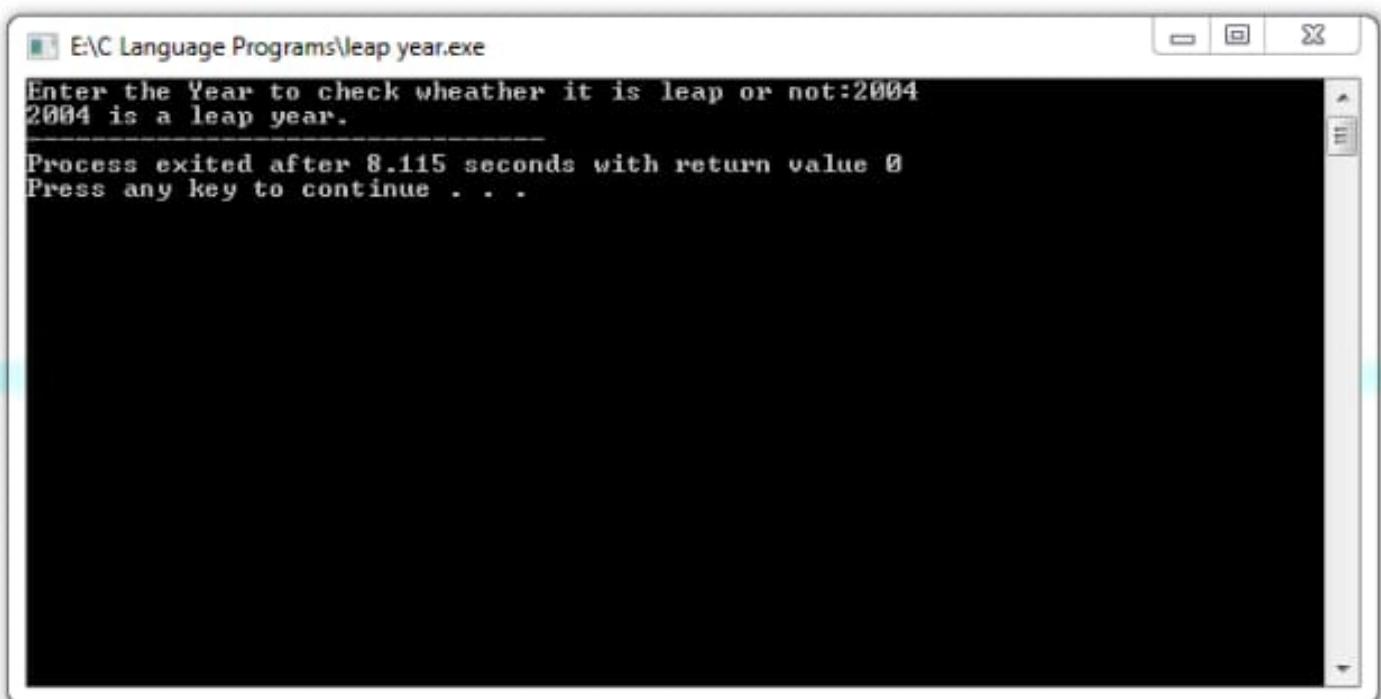
```
1  /* Create a triangle of sterics.*/
2  #include<stdio.h>
3  #include<conio.h>
4  main()
5  {
6      int a,b;
7      for(a=1;a<=7;a++)
8      {
9          for(b=a;b<7;b++)
10         {
11             printf(" ");
12         }
13         for(b=1;b<=a*2-1;b++)
14         printf("*");
15         printf("\n");
16     }
17 }
18 }
```

E:\C Language Programs\print steric triangle.exe

```
*
 ***
 ****
 *****
 *****
```

```
Process exited after 0.01019 seconds with return value 0
Press any key to continue . . .
```

```
/* Write a program that takes year as input (type int )
and then determines whether the year is leap or not.*/
#include<stdio.h>
#include<conio.h>
main()
{
    int year;
    printf("Enter the Year to check whether it is leap or not:");
    scanf("%d",&year);
    if (year % 4 == 0) {
        if (year % 100 == 0) {
            if (year % 400 == 0)
                printf("%d is a leap year.",year);
            else
                printf("%d is not a leap year.",year);
        }
        else
            printf("%d is a leap year.",year);
    }
    else
        printf("%d is not a leap year.",year);
}
```



```
--  
1 #include <stdio.h>  
2 #include <stdlib.h>  
3  
4 main()  
5 {  
6     int a=10,b=5,c=1;  
7     if( (a>b) && (b>a) )      // && gives true if both conditions are true. and give false if any one is false.  
8     {  
9         printf("%d is greater",b);  
10    }  
11    else  
12    {  
13        printf("%d is greater",a);  
14    }  
15}  
16
```

```
E:\C Language Programs\Logical Operators\bin\Debug\Logical Operators.exe"  
10 is greater  
Process returned 0 (0x0) execution time : 0.493 s  
Press any key to continue.
```

```
1 // Finding output
2 //A. a
3 #include <stdio.h>
4 main()
5 {
6     int num[26], temp;
7     num[0]=100;
8     num[25]=200;
9     temp=num[25];
10    num[25]=num[0];
11    num[0]=temp;
12    printf ("\n%d %d", num[0], num[25]);
13 }
14
```

E:\C Language Programs\Array EXE\A) a\main.exe"

200 100

Process returned 0 (0x0) execution time : 0.348 s

Press any key to continue.

```
1  /*C program to find power of a number using function recursion*/
2
3  #include <stdio.h>
4
5  int power(int n1, int n2);
6
7  int main() {
8      int base, a, result;
9      printf("Enter base number: ");
10     scanf("%d", &base);
11     printf("Enter power number(positive integer): ");
12     scanf("%d", &a);
13     result = power(base, a);
14     printf("%d^%d = %d", base, a, result);
15     return 0;
16 }
17
18 int power(int base, int a) {
19     if (a != 0)
20         return (base * power(base, a - 1));
21     else
22         return 1;
```

E:\C Language Programs\find the power of a number.exe

```
Enter base number: 3
Enter power number(positive integer): 3
3^3 = 27
```

```
Process exited after 15.22 seconds with return value 0
Press any key to continue . . .
```

```
1  /*Write a program that accepts an integer value from the user and passes that to a function by reference.
2   if the number is positive, the fuction finds the square of the value. the updated value is display by main function.*/
3  #include<stdio.h>
4  #include<conio.h>
5  int sqr(int &);
6  main()
7  {
8      int val;
9      printf("Enter the number:");
10     scanf("%d",&val);
11     printf("Square of number is %d", sqr(val));
12 }
13 int sqr (int &va )
14 {
15     int a;
16     if(va>=0)
17     {
18         a=va*va;
19         return a;
20     }
21     else
22         return va;
23 }
```

```
E:\C Language Programs\finds the square of the value.exe
Enter the number:5
Square of number is 25
Process exited after 1.073 seconds with return value 0
Press any key to continue . . .
```

```
1 // Finding output
2 //A. b
3 #include <stdio.h>
4 main( )
5 {
6     int array[26], i ;
7     for ( i = 0 ; i <= 25 ; i++ )
8     {
9         array[i] = 'A' + i ;
10        printf ( "\n%d %c", array[i], array[i] ) ;
11    }
12 }
13
```

E:\C Language Programs\Array EXE\A) a\main.exe"

```
65 A
66 B
67 C
68 D
69 E
70 F
71 G
72 H
73 I
74 J
75 K
76 L
77 M
78 N
79 O
80 P
81 Q
82 R
83 S
84 T
85 U
86 V
87 W
88 X
89 Y
90 Z
```

Process returned 0 (0x0) execution time : 0.052 s
Press any key to continue.

```
n.c X
1 //Calculate the 7 days tempurature
2 /*Calculate the 7 days rempurature*/
3 #include <stdio.h>
4 #include <stdlib.h>
5
6 int main()
7 {
8     float abc[7], sum=0, avg;
9     for(int i=0;i<=6;i++)
10    {
11        printf("Enter the value of %d day tempurature=", i+1);
12        scanf("%f", &abc[i]);
13    }
14    for(int i=0;i<7;i++)
15    {
16        printf("The value of %d day tempurature =%0.2f\n", i+1, abc[i]);
17        sum=sum+abc[i];
18    }
19    avg=sum/7;
20    printf("Average Temprature = %0.2f", avg);
21 }
22
```

Select "E:\C Language Programs\Array test\bin\Debug\Array test.exe"

```
Enter the value of 1 day tempurature=20.2
Enter the value of 2 day tempurature=21
Enter the value of 3 day tempurature=8
Enter the value of 4 day tempurature=23
Enter the value of 5 day tempurature=0.4
Enter the value of 6 day tempurature=25.4
Enter the value of 7 day tempurature=25
The value of 1 day tempurature =20.20
The value of 2 day tempurature =21.00
The value of 3 day tempurature =8.00
The value of 4 day tempurature =23.00
The value of 5 day tempurature =0.40
The value of 6 day tempurature =25.40
The value of 7 day tempurature =25.00
Average Temprature = 17.57
Process returned 0 (0x0)   execution time : 24.374 s
Press any key to continue.
```

others

Code::Blocks X Search results X Cccc X
dowsPowerShell\vl.0;C:\Windows\System32\Open
gram Files\Microsoft SQL Server\130\Tools\Bi
uting: "C:\Program Files\CodeBlocks/cb_consol

```
1  /*write a program from user to calculate area and
2   circumference of circle using formula area=pi*r*r , circumference= 2*pi*R*/
3   #include <stdio.h>
4   #include <stdlib.h>
5
6   int main()
7  {
8       float R,area,circumference;
9       printf("Radius of circle=");
10      scanf("%f",&R);
11      area= 3.14159*R*R;
12      circumference= 2*3.14159*R;
13      printf("Area =%2.2f\nCircumference= %2.2f",area,circumference);
14      return 0;
15  }
```

```
  "E:\C Language Programs\calculate rea and circumference of circle\bin\Debug\calculate rea and circumference o
Radius of circle=5
Area =78.54
Circumference= 31.42
Process returned 0 (0x0)  execution time : 2.937 s
Press any key to continue.
```

```
1 // Write a program that inputs base and height from the user and
2 // calculates area of a triangle by using the formula area=1/2*base*height
3 #include <stdio.h>
4 #include <conio.h>
5 int main()
6 {
7     float base,height;
8     printf("Enter the base of triangle:");
9     scanf("%f", &base);
10    printf("Enter the height of triangle:");
11    scanf("%f", &height);
12    printf("Area of triangle is %5.2f", 0.5*base*height);
13    return 0;
14 }
15
```

E:\C Language Programs\Formula of triangle\bin\Debug\Formula of triangle.exe"

```
Enter the base of triangle:10.5
Enter the height of triangle:13.5
Area of triangle is 70.88
Process returned 0 (0x0) execution time : 14.512 s
Press any key to continue.
```

main.c X

```
1 //Armstrong Number
2 #include<stdio.h>
3 int main()
4 {
5     int n, r, sum=0, temp;
6     printf("enter the number=");
7     scanf("%d", &n);
8     temp=n;
9     while(n>0)
10    {
11        r=n%10;
12        sum=sum+(r*r*r);
13        n=n/10;
14    }
15    if(temp==sum)
16        printf("armstrong number ");
17    else
18        printf("not armstrong number");
19    return 0;
20 }
21
```

```
E:\C Language Programs\Armstrong Number\bin\Debug\Armstrong Number.exe"
enter the number=123
not armstrong number
Process returned 0 (0x0) execution time : 3.042 s
Press any key to continue.
```

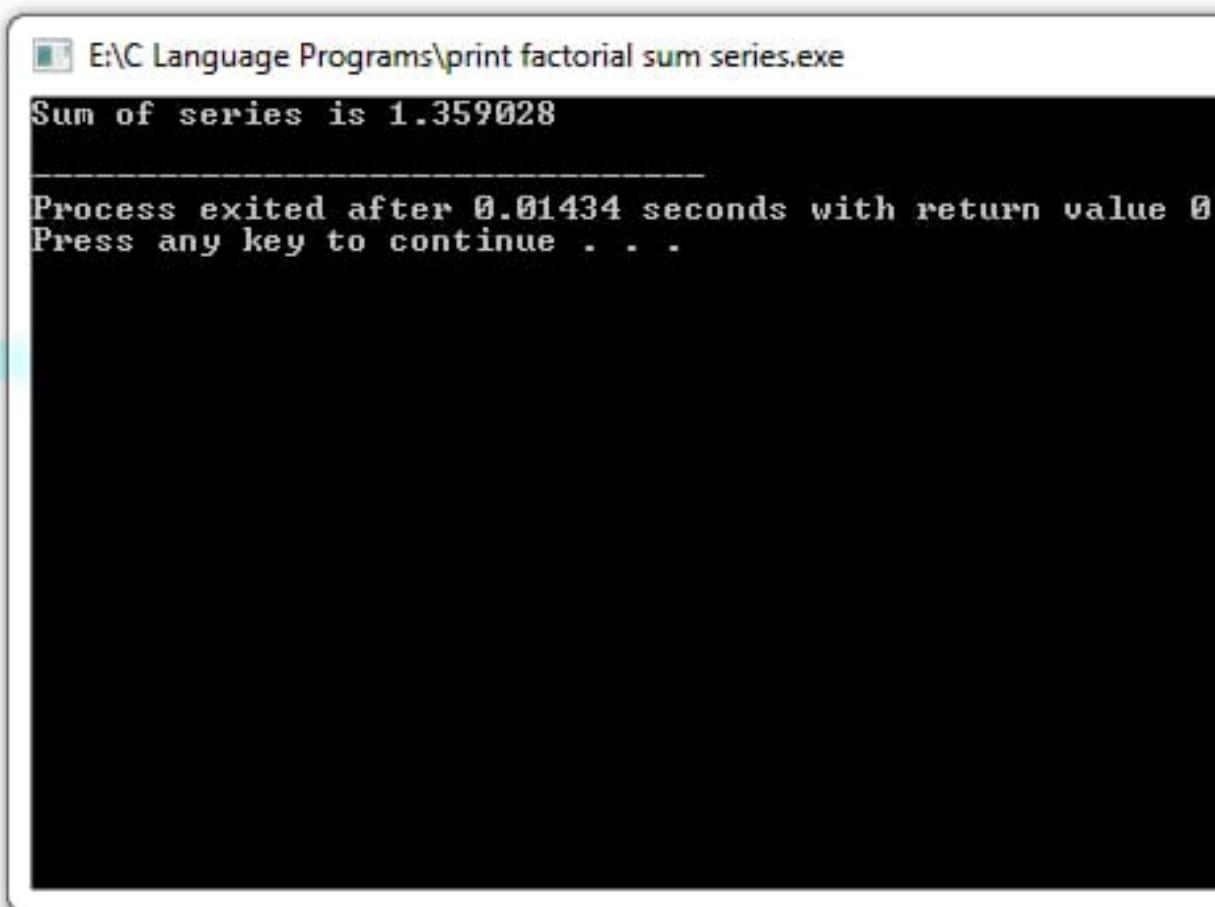
```
X
1 #include <stdio.h>
2 #include <ctype.h>
3
4 int main()
5 {
6     /* int isdigit(int c); Returns a true value if c is a digit and 0 (false) otherwise. */
7
8     printf("%s\n%s%s\n%s%s\n\n", "According to isdigit: ",
9            isdigit('8') ? "8 is a " : "# is nor a ", "digit", //8 is a digit so it display 8 is a
0            isdigit('#') ? "# is a " : "# is nor a ", "digit"); //# is not a digit so it display # is not a
1                                         // in both isdigit lines digit is compulsory to display
2
3 }
```

E:\C Language Programs\String as a pointer\bin\Debug\String as a pointer.exe

```
According to isdigit:
8 is a digit
# is nor a digit

Process returned 0 (0x0) execution time : 0.049 s
Press any key to continue.
```

```
1 /* print the sum of factorial series of ppr 2015 Long q2.*/
2 #include<stdio.h>
3 #include<conio.h>
4 main()
{
5
6     int num = 1, count;
7     float sum = 0.0, fact;
8
9     while(num <= 7)
10    {
11        fact = 1;
12        for(count = 1; count <= num; count++)
13        {
14            fact = fact * count;
15        }
16
17        sum = sum + (num / fact);
18
19        num++;
20    }
21
22    printf("Sum of series is %f\n", sum);
23 }
```



```
c x
1 #include <stdio.h>
2 #include <ctype.h>
3
4 int main()
5 {
6     /* int isdigit(int c); Returns a true value if c is a digit and 0 (false) otherwise. */
7
8     printf("%s\n%s%s\n%s%s\n\n", "According to isdigit: ",
9            isdigit('8') ? "8 is a " : "# is nor a ", "digit", //8 is a digit so it display 8 is a
10           isdigit('#') ? "# is a " : "# is nor a ", "digit"); //## is not a digit so it display # is not a
11                                         // in both isdigit lines digit is compulsory to display
12     if (isdigit('8'))
13         printf("\n8 is a digit.");
14     else
15         printf("\n8 is nor a digit.");
16 }
17
```

E:\C Language Programs\ctype.h\isdigit\bin\Debug\isdigit.exe

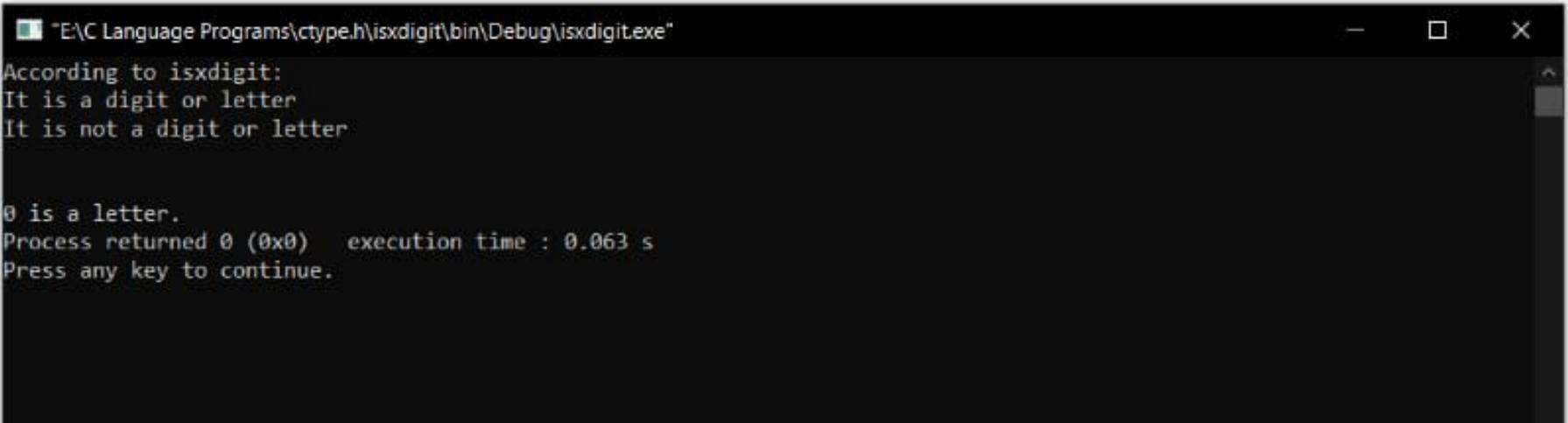
```
According to isdigit:
8 is a digit
# is nor a digit

8 is a digit.
Process returned 0 (0x0) execution time : 0.050 s
Press any key to continue.
```

```
: x
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 main()
5 {
6     /*int islower(int c); Returns a true value if c is a lowercase letter and 0 (false) otherwise.*/
7     printf("%s\n%s%s\n%s%s\n\n", "According to isxdigit: ",
8            islower('A') ? "It is a " : "It is not a ", "lower case letter", //A is a upper case
9            islower('c') ? "It is a " : "It is not a ", "lower case letter"); //c is not a uppercase letter so it display # is not a
10           // in both lines digit or letter is compulsory to display
11     if (islower('f'))
12         printf("\nf is a letter. ");
13     else
14         printf("\n f is not a letter.");
15 }
16
E:\C Language Programs\ctype.h\is lower\bin\Debug\is lower.exe
According to isxdigit:
It is not a lower case letter
It is a lower case letter

f is a letter.
Process returned 0 (0x0) execution time : 0.052 s
Press any key to continue.
```

```
1 #include <stdio.h>
2 #include <ctype.h>
3
4 int main()
5 {
6     /* int isxdigit(int c); Returns a true value if c is a hexadecimal digit character and 0 (false) otherwise. */
7     /* Hexadecimal values : 0-9,A-F.*/
8
9     printf("%s\n%s%s\n%s%s\n\n", "According to isxdigit: ",
10           isxdigit('A') ? "It is a " : "It is not a ", "digit or letter", //A is a hexadecimal digit
11           isxdigit('#') ? "It is a " : "It is not a ", "digit or letter"); //# is not a hexadecimal digit so it display # is not a
12                                         // in both lines digit or letter is compulsory to display
13     if (isxdigit('0'))
14         printf("\n0 is a letter. ");
15     else
16         printf("\n 0 is not a letter.");
17 }
18
```

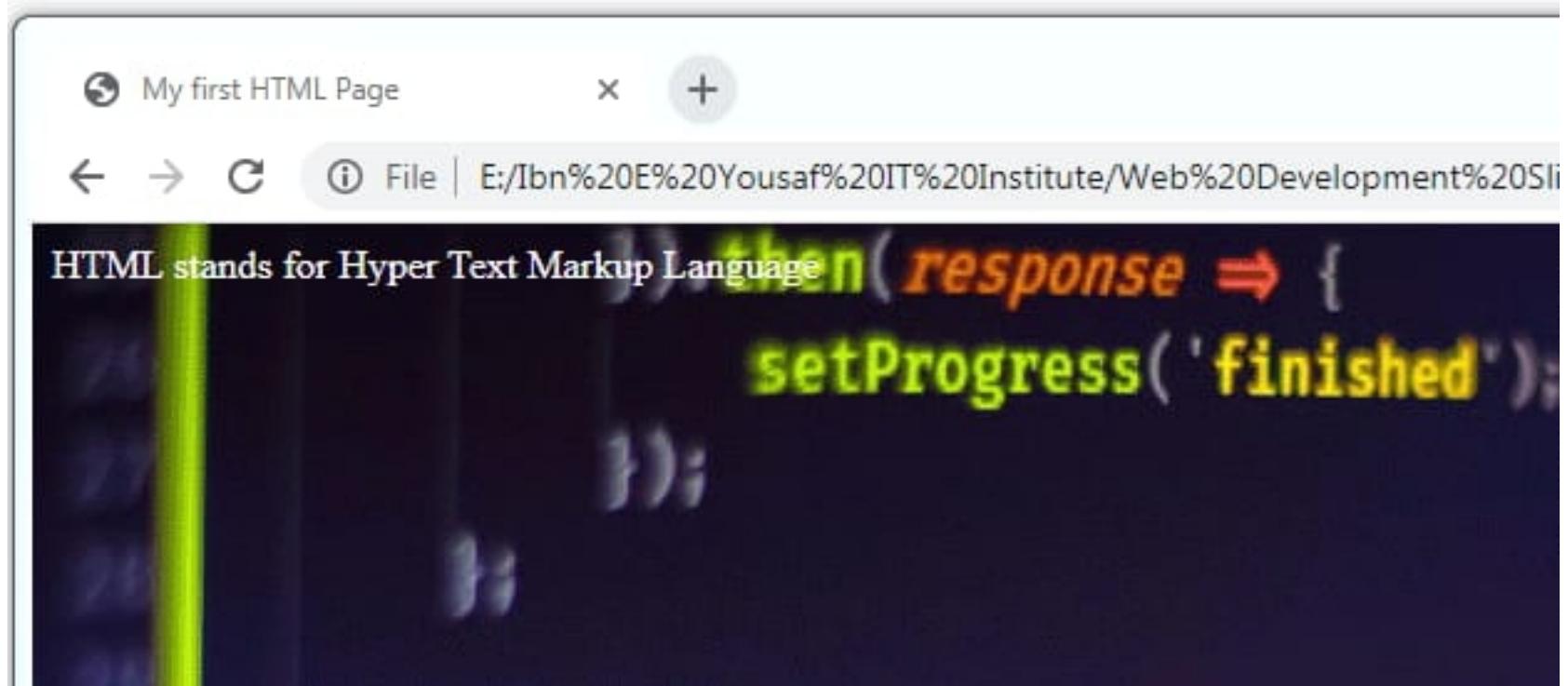


The terminal window displays the following output:

```
E:\C Language Programs\ctype.h\isxdigit\bin\Debug\isxdigit.exe
According to isxdigit:
It is a digit or letter
It is not a digit or letter

0 is a letter.
Process returned 0 (0x0)  execution time : 0.063 s
Press any key to continue.
```

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <title>My first HTML Page</title>
5  </head>
6  <body background="photo-1593720219276-0b1eacd0aef4 copy.gif" text="white" >
7  HTML stands for Hyper Text Markup Language
8  </body>
9  </html>
```



```

1  /*write a program that calculates four-function(+,-,*,/) calculator.
2   it ask the user to input two numbers and an operator from the prompt.*/
3  #include<stdio.h>
4  #include<conio.h>
5  int add(int,int);
6  int sub(int,int);
7  int mul(int,int);
8  int div(int,int);
9  main()
10 {
11     int a,b;
12     printf("Enter the first and second number: ");
13     scanf("%d %d",&a,&b);
14     printf("Sum = %d",add(a,b));
15     printf("\nSub = %d",sub(a,b));
16     printf("\nMul = %d",mul(a,b));
17     printf("\nDiv = %d",div(a,b));
18
19 }
20 int add (int s, int x)
21 {
22     int c=s+x;
23     return c;
24 }
25 int sub (int s, int x)
26 {
27     int c=s-x;
28     return c;
29 }
30 int mul (int s, int x)
31 {
32     int c=s*x;
33     return c;
34 }
35 int div (int s, int x)
36 {
37     int c=s/x;
38     return c;
39 }

```

E:\C Language Programs\function using.exe

```

Enter the first and second number: 25
5
Sum = 30
Sub = 20
Mul = 125
Div = 5

```

Process exited after 5.683 seconds with return value 0
Press any key to continue . . .

```
: X
1 #include <stdio.h>
2 #include <ctype.h>
3
4 int main()
5 {
6     /* int isalpha(int c); Returns a true value if c is a letter and 0 (false) otherwise. */
7
8     printf("%s\n%s%s\n%s%s\n\n", "According to isblank: ",
9            isalpha('z') ? "z is a " : "z is not a ", "digit", //z is a letter so it display z is a digit
10           isalpha('#') ? "#" is a " : "#" is not a ", "digit"); //# is not a letter so it display # is not a
11                                         // in both isalhpaa lines digit is compulsory to display
12     if (isalpha('z'))
13         printf("\n z is a letter. ");
14     else
15         printf("\n z is not a letter.");
16 }
17
```

E:\C Language Programs\ctype.h\isblank\bin\Debug\isblank.exe

```
According to isblank:
z is a digit
# is not a digit

z is a letter.
Process returned 0 (0x0) execution time : 0.020 s
Press any key to continue.
```

```
main.c X
1 #include <stdio.h>
2 #include <ctype.h>
3
4 int main()
5 {
6     /* int isalnum(int c); Returns a true value if c is a digit or a letter and 0 (false) otherwise. */
7
8     printf("%s\n%s%s\n%s%s\n\n", "According to isalnum: ",
9            isalnum('z') ? "z is a " : "z is nor a ", "digit or letter", //z is a letter so it display 0 is a digit or letter
10           isalnum('#') ? "# is a " : "# is nor a ", "digit or letter"); //# is not a letter or digit so it display # is not a
11                                         // in both lines digit or letter is compulsory to display
12     if (isalnum('z'))
13         printf("\n z is a letter. ");
14     else
15         printf("\n z is not a letter.");
16 }
17
```

```
E:\C Language Programs\ctype.h\isblank\bin\Debug\isblank.exe
According to isalnum:
z is a digit or letter
# is nor a digit or letter

z is a letter.
Process returned 0 (0x0) execution time : 0.011 s
Press any key to continue.
```

```
print static triangle.cpp sort the array in ascending order.cpp
1  /*Write a program that takes 8 elements array from user.
2   sort the array in ascending order.*/
3   #include <stdio.h>
4   #include <stdlib.h>
5   int main()
6   {
7       int arr[8],s,i,u;
8       for(i=0;i<8;i++)
9       {
10          printf("Enter the %d element of array: ",i);
11          scanf("%d",&arr[i]);
12      }
13      printf("Elements in array after sorting:");
14      for(i=0;i<8;i++)
15         printf("%d\t",arr[i]);
16      for (i = 0; i < 8; ++i)
17      {
18          for (u = i + 1; u < 8; ++u)
19          {
20              if (arr[i] > arr[u])
21              {
22                  s = arr[i];
23                  arr[i] = arr[u];
24                  arr[u] = s;
25              }
26          }
27      }
28      printf("\nElements in array after sorting:");
29      for(i=0;i<8;i++)
30         printf("%d\t",arr[i]);
31     }
32 }
```

E:\C Language Programs\sort the array in ascending order.exe

```
Enter the 0 element of array: 5
Enter the 1 element of array: 7
Enter the 2 element of array: 8
Enter the 3 element of array: 9
Enter the 4 element of array: 4
Enter the 5 element of array: 24
Enter the 6 element of array: 6
Enter the 7 element of array: 5
Elements in array after sorting;5      7      8      9      4      24
6      5
Elements in array after sorting;4      5      5      6      7      8
9      24
Process exited after 7.369 seconds with return value 0
Press any key to continue . . .
```

```
1 #include<stdio.h>
2 #include<conio.h>
3 main()
4 {
5     int a=2401,i;
6     while(a>=1)
7     {
8         printf("%d \t",a);
9         a=a/7;
10    }
11 }
```

```
C:\Users\Abdul Mueed\Desktop\print a sequence.exe
2401      343      49      7      1
Process exited after 0.007546 seconds with return value 0
Press any key to continue . . .
```

```
1  /* Any character is entered through the keyboard, write a
2   program to determine whether the character entered is a
3   capital letter, a small case letter, a digit or a special symbol.
4   The following table shows the range of ASCII values for
5   various characters. */
6  #include <stdio.h>
7  #include <stdlib.h>
8
9  int main()
10 {
11     char a;
12     int ab;
13     printf("Enter the character:");
14     scanf("%c", &a);
15     ab= a;
16     printf("%c is %d\n", a, ab);
17     if((a<=90)&&(a>=65))
18     {
19         printf("%c is a capital letter");
20     }
21     else if ((a>=97)&&(a<=122))
22     {
23         printf("%c is small case letter");
24     }
25     else if ((a>=0)&&(a<=9))
26     {
27         printf("%c is a digit", a);
28     }
29     else if(((a>=0)&&(a<=47))||((a>=58)&&(a<=64))||((a>=91)&&(a<=96))||((a>=123)&&(a<=127)))
30     {
31         printf("%c is symbol", a);
32     }
33 }
34 
```

E:\C Language Programs\Chapter 2\ch 2 F.b\bin\Debug\ch 2 F.b

Enter the character:\$
\$ is 36
\$ is symbol
Process returned 0 (0x0) execution time : 6.154 s
Press any key to continue.

```
x
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 main()
5 {
6     int a=10,b=5,c=1;
7     if( (a>b) && (a>b) )      // && gives true if both conditions are true. and give false if any one is false.
8     {
9         printf("%d is greater",b);
10    }
11    else
12    {
13        printf("%d is greater",a);
14    }
15 }
16
```

E:\C Language Programs\Logical Operators\bin\Debug\Logical Operators.exe

5 is greater
Process returned 0 (0x0) execution time : 0.354 s
Press any key to continue.

```
*main.c X
1  #include <stdio.h>
2  #include <ctype.h>
3
4  int main()
5  {
6      /*int tolower(int c); If c is an uppercase letter, tolower returns c as a lowercase letter. Otherwise,
7      tolower returns the argument unchanged.*/
8
9
10     printf("%s\n%s%c\n%s%c", "Effect of tolower",
11           "C is converted to lowercase letter ", tolower('C'),
12           "f is converted to lowercase letter ", tolower('F'));
13
14     printf("\nC is converted to lower case letter: %c", tolower('C'));
15     printf("\ne is converted to lower case letter: %c", tolower('e'));// e is not converted bcz its is already in lowercase
16
17 }

```

E:\C Language Programs\ctype.h\tolower\bin\Debug\tolower.exe

```
Effect of tolower
C is converted to lowercase letter c
f is converted to lowercase letter f
C is converted to lower case letter: c
e is converted to lower case letter: e
Process returned 0 (0x0) execution time : 0.064 s
Press any key to continue.
```

```
1 #include <stdio.h>
2 #include <ctype.h>
3
4 int main()
5 {
6     /* int isblank(int c); Returns a true value if c is a blank and 0 (false) otherwise. */
7
8     printf("%s\n%s%s\n%s%s\n\n", "According to isdigit:",
9            isblank(' ') ? "8 is a " : "8 is nor a ", "digit",
10           isblank('#') ? "# is a " : "# is nor a ", "digit");
11                                         //8 is a digit so it display 8 is a
12                                         //# is not a digit so it display # is not a
13                                         //in both isdigit lines digit is compulsory to display
14
15     if (isblank(' '))
16         printf("\nthere is a blank.");
17     else
18         printf("\nthere is nor a blank.");
19 }
```

E:\C Language Programs\ctype.h\isblank\bin\Debug\isblank.exe

```
According to isdigit:
8 is a digit
# is nor a digit

there is a blank.
Process returned 0 (0x0) execution time : 0.056 s
Press any key to continue.
```

```
1  /*Write a program that compute the area of a circle.  
2   store the value of pi in a constant using define directive*/  
3  #include<stdio.h>  
4  #define pi 3.1417  
5  main()  
6  {  
7      float r=2.3;  
8      printf("Area of circle=%.2f",pi*r*r);  
9 }
```

E:\C Language Programs\Area of circle.exe

Area of circle=16.62

Process exited after 0.007074 seconds with return value 0
Press any key to continue . . .

[A1] - Code::Blocks 20.03

View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks
Help

main():int

main.c x

```
1 #include <stdio.h>
2
3
4 int main()
5 {
6     char c;
7     printf("Enter the $ to exit");
8     while(c!='$')
9     {
10         c=getch();
11         printf("\n Entered character is :");
12         putchar(c);
13     }
14 }
15
```

E:\C Language Programs\A1\bin\Debug\A1.exe

Enter the \$ to exit
Entered character is :F
Entered character is :f
Entered character is :J
Entered character is :o
Entered character is :e
Entered character is :\$
Process returned 0 (0x0) execution time : 10.357 s
Press any key to continue.

```
c); Returns a true value if c is a digit and 0 (false) otherwise. */  
ss\n\n", "According to isdigit: ",  
? "8 is a ": "8 is nor a ", "digit", //8 is a digit so it display 8 is  
? "# is a " : "# is nor a ", "digit"); //# is not a digit so it display  
// in both isdigit lines digit .
```



```
a digit.");
```

```
nor a digit.");
```

```
ams\ctype.h\isdigit\bin\Debug\isdigit.exe"
```

```
t:
```



```
(0x0) execution time : 0.050 s  
ntinue.
```

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

```
#include <ctype.h>
```



Aa



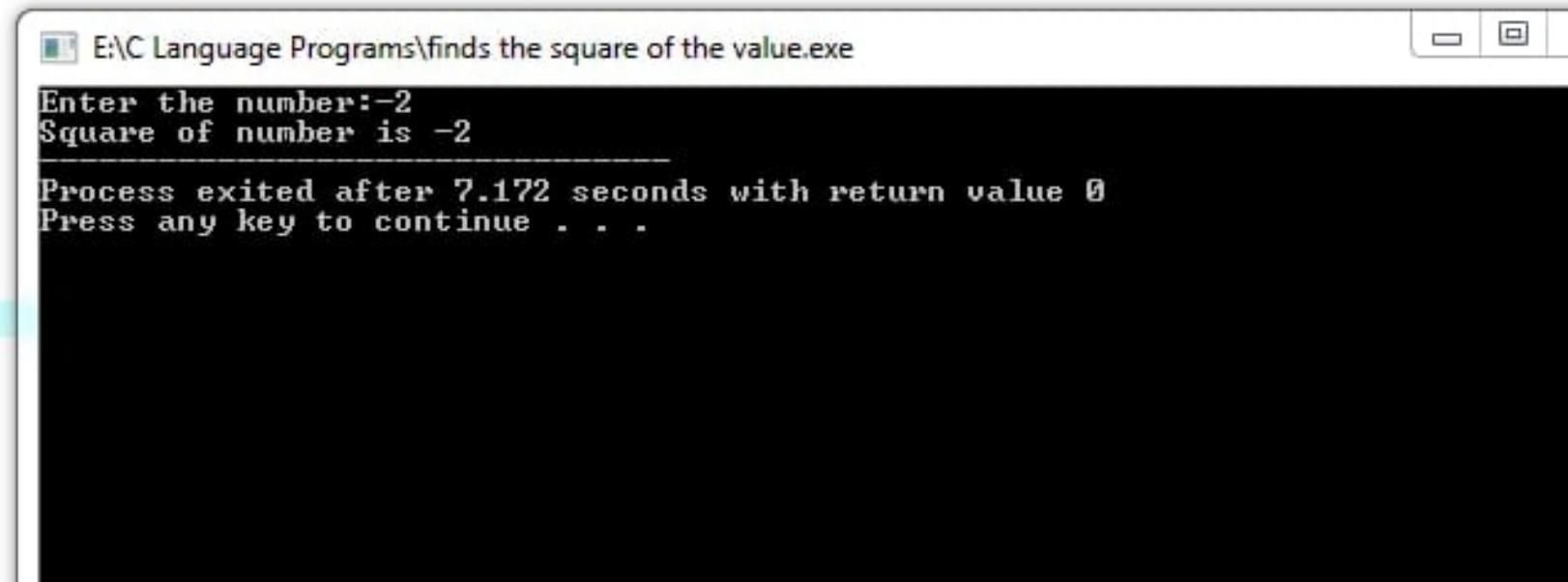
```
/*Write a program that declares and initialies two variables of "int" type.
Program calculates the averages of these values and displays the result on screen.*
#include<stdio.h>
main()
{
    int a,b=a=43;
    printf("a=%d\nb=%d\naverage=%d",a,b,(a+b)/2);
}
```

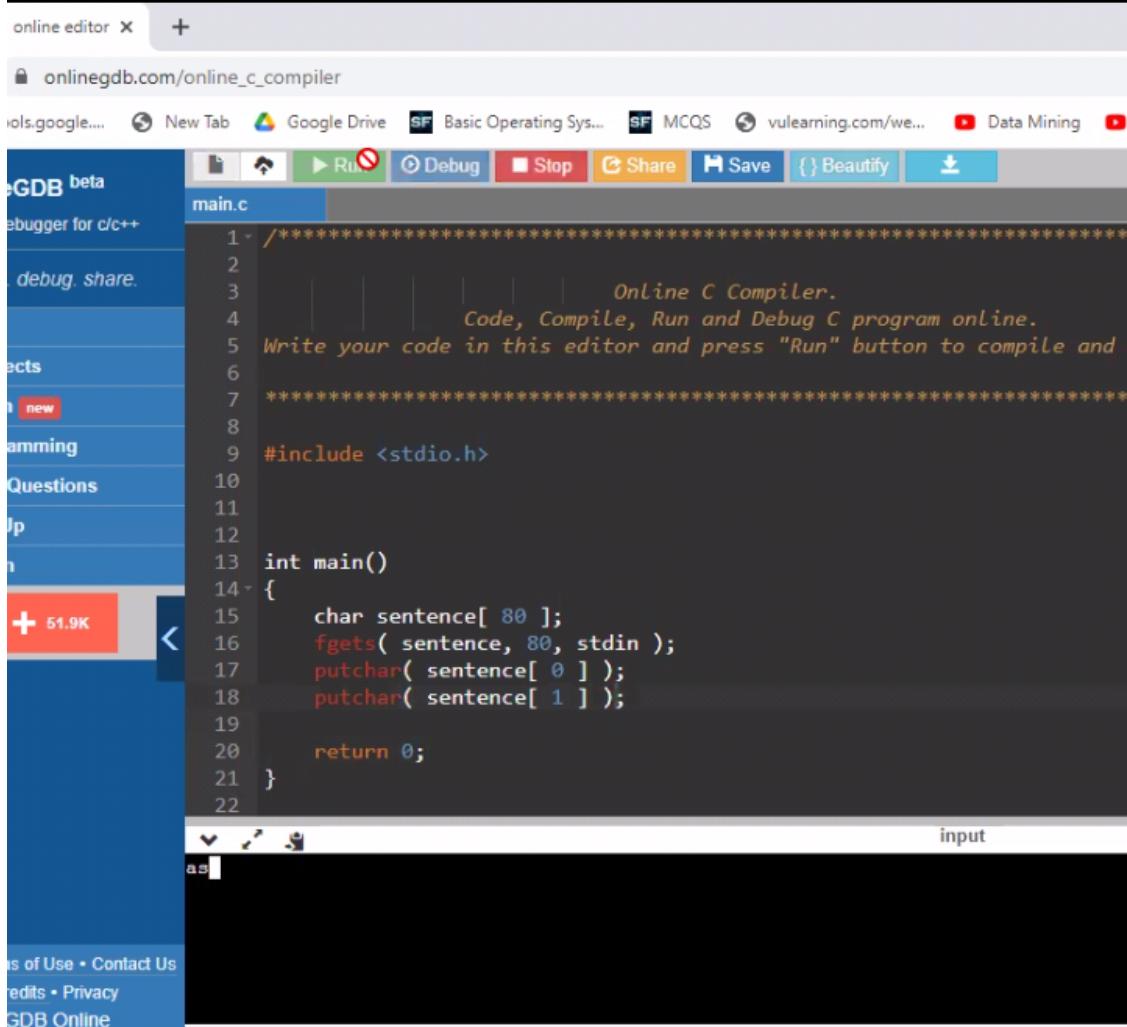
E:\C Language Programs\average of two variables.exe

```
a=43
b=43
average=43
```

```
Process exited after 0.006767 seconds with return value 0
Press any key to continue . . .
```

```
1  /*Write a program that accepts an integer value from the user and passes that to a function by reference.
2   if the number is positive, the fuction finds the square of the value. the updated value is display by main function.*/
3  #include<stdio.h>
4  #include<conio.h>
5  int sqr(int &);
6  main()
7  {
8      int val;
9      printf("Enter the number:");
10     scanf("%d",&val);
11     printf("Square of number is %d", sqr(val));
12 }
13 int sqr (int &va )
14 {
15     int a;
16     if(va>=0)
17     {
18         a=va*va;
19         return a;
20     }
21     else
22     {
23         return va;
24     }
25 }
```







4G 69% 11:21 AM

itor x | +

erators

Basic Operating Sys... SF MCQS vulearning.com/we... Data Mining Android Tutorial for... 11 Plus Exams Verb... »

Q Search tutorials and examples Get App

```
212<<1 = 110101000 (In binary) [Left shift by one bit]
212<<0 = 11010100 (Shift by 0)
212<<4 = 110101000000 (In binary) =3392(In decimal)
```

Example #5: Shift Operators

```
#include <stdio.h>
int main()
{
    int num=212, i;
    for (i=0; i<=2; ++i)
        printf("Right shift by %d: %d\n", i, num>>i);

    printf("\n");

    for (i=0; i<=2; ++i)
        printf("Left shift by %d: %d\n", i, num<<i);

    return 0;
}
```

```
Right Shift by 0: 212
Right Shift by 1: 106
```

• • • •



Prentice.Hall-C.HowTo.Programming.Edition.pdf * Adobe Acrobat Reader DC (52% v10)

File Edit View Sign Window Help

Home Tools Prentice.Hall-C.Ho... x

REC

Bookmarks x

4 C Program Control
5 C Functions
6 C Arrays
7 C Pointers
8 C Characters and Strings
9 C Formatted Input/Output
10 C Structures, Unions, Bit Manipulations and Enumerations
11 C File Processing
 11.1 Introduction
 11.2 Data Hierarchy
 11.3 Files and Streams

420 (453 of 1000) 125%

called a **database**. A collection of programs designed to create and manage databases is called a **database management system (DBMS)**.

11.3 Files and Streams

C views each file simply as a sequential stream of bytes (Fig. 11.2). Each file ends either with an **end-of-file marker** or at a specific byte number recorded in a system-maintained, administrative data structure. When a file is opened, a **stream** is associated with the file. Three files and their associated streams are automatically opened when program execution begins—the **standard input**, the **standard output** and the **standard error**. Streams provide communication channels between files and programs. For example, the standard input stream enables a program to read data from the keyboard, and the standard output stream enables a program to print data on the screen. Opening a file returns a pointer to a FILE structure (defined in `<stdio.h>`) that contains information used to process the file. This structure includes a **file descriptor**, i.e., an index into an operating system array called the **open file table**. Each array element contains a **file control block (FCB)** that the operating system uses to administer a particular file. The standard input, standard output and standard error are manipulated using file pointers `stdin`, `stdout` and `stderr`.

The standard library provides many functions for reading data from files and for

Imran Wahab's screen

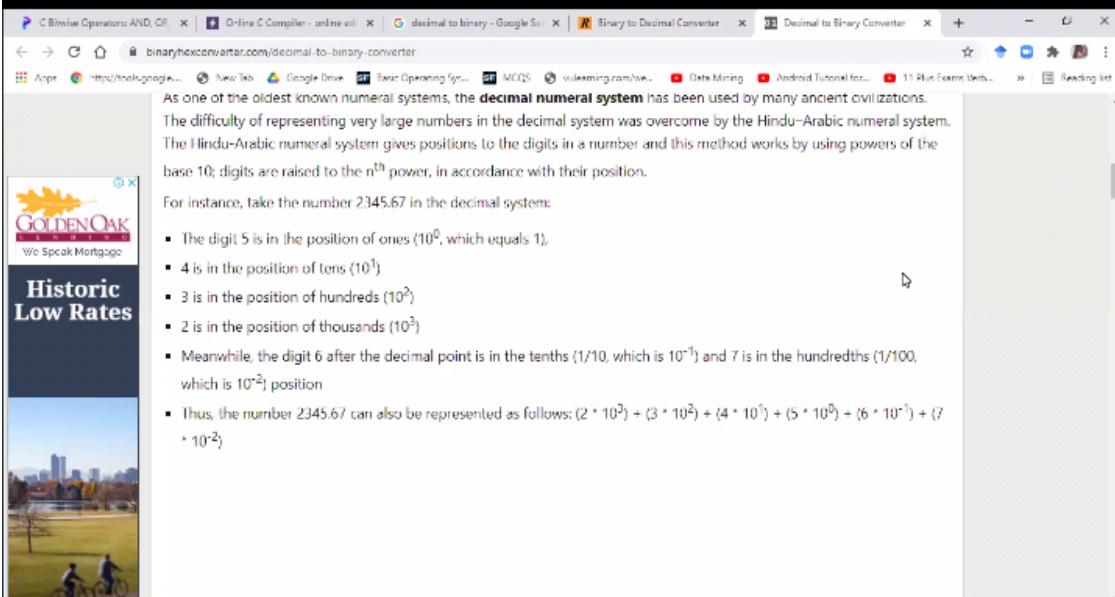
6.65 x 8.97 in 10:12 AM 11/13/2021





Zoom

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The screenshot shows a web browser window with multiple tabs open. The active tab displays a page from binaryhexconverter.com about decimal-to-binary conversion. The page explains the history of the decimal numeral system and its limitations compared to the Hindu-Arabic system. It provides a detailed breakdown of the number 2345.67 in the decimal system, showing how each digit represents a power of 10. A sidebar for "Golden Oak Financial" offers "Historic Low Rates".

As one of the oldest known numeral systems, the **decimal numeral system** has been used by many ancient civilizations. The difficulty of representing very large numbers in the decimal system was overcome by the Hindu-Arabic numeral system. The Hindu-Arabic numeral system gives positions to the digits in a number and this method works by using powers of the base 10; digits are raised to the n^{th} power, in accordance with their position.

For instance, take the number 2345.67 in the decimal system:

- The digit 5 is in the position of ones (10^0 , which equals 1).
- 4 is in the position of tens (10^1)
- 3 is in the position of hundreds (10^2)
- 2 is in the position of thousands (10^3)
- Meanwhile, the digit 6 after the decimal point is in the tenths ($1/10$, which is 10^{-1}) and 7 is in the hundredths ($1/100$, which is 10^{-2}) position
- Thus, the number 2345.67 can also be represented as follows: $(2 * 10^3) + (3 * 10^2) + (4 * 10^1) + (5 * 10^0) + (6 * 10^{-1}) + (7 * 10^{-2})$



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dition.pdf - Adobe Acrobat Reader DC (32-bit)

fall-C.Ho... x



220 (253 of 1000)



100%



220 Chapter 6 C Arrays

```
39 /* calculate average of all response values */
40 void mean( const int answer[] )
41 {
42     int j; /* counter for totaling array elements */
43     int total = 0; /* variable to hold sum of array elements */
44
45     printf( "%s\n%s\n%s\n", "*****", " Mean", "*****" );
46
47     /* total response values */
48     for ( j = 0; j < SIZE; j++ ) {
49         total += answer[ j ];
50     } /* end for */
51
52     printf( "The mean is the average value of the data\n"
53             "items. The mean is equal to the total of\n"
54             "all the data items divided by the number\n"
55             "of data items ( %d ). The mean value for\n"
56             "this run is: %d / %d = %.4f\n\n",
57             SIZE, total, SIZE, ( double ) total / SIZE );
58 } /* end function mean */
59
60 /* sort array and determine median element's value */
61 void median( int answer[] )
62 {
63     printf( "\n%s\n%s\n%s\n", "*****",
64             " Median", "*****",
65             "The unsorted array of responses is" );
66
67     printArray( answer ); /* output unsorted array */
68
69     bubbleSort( answer ); /* sort array */
70
71     printf( "\n\nThe sorted array is" );
72 }
```

● ● ● ●

Imran Wahab's screen





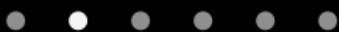
4G 31% 11:15 AM

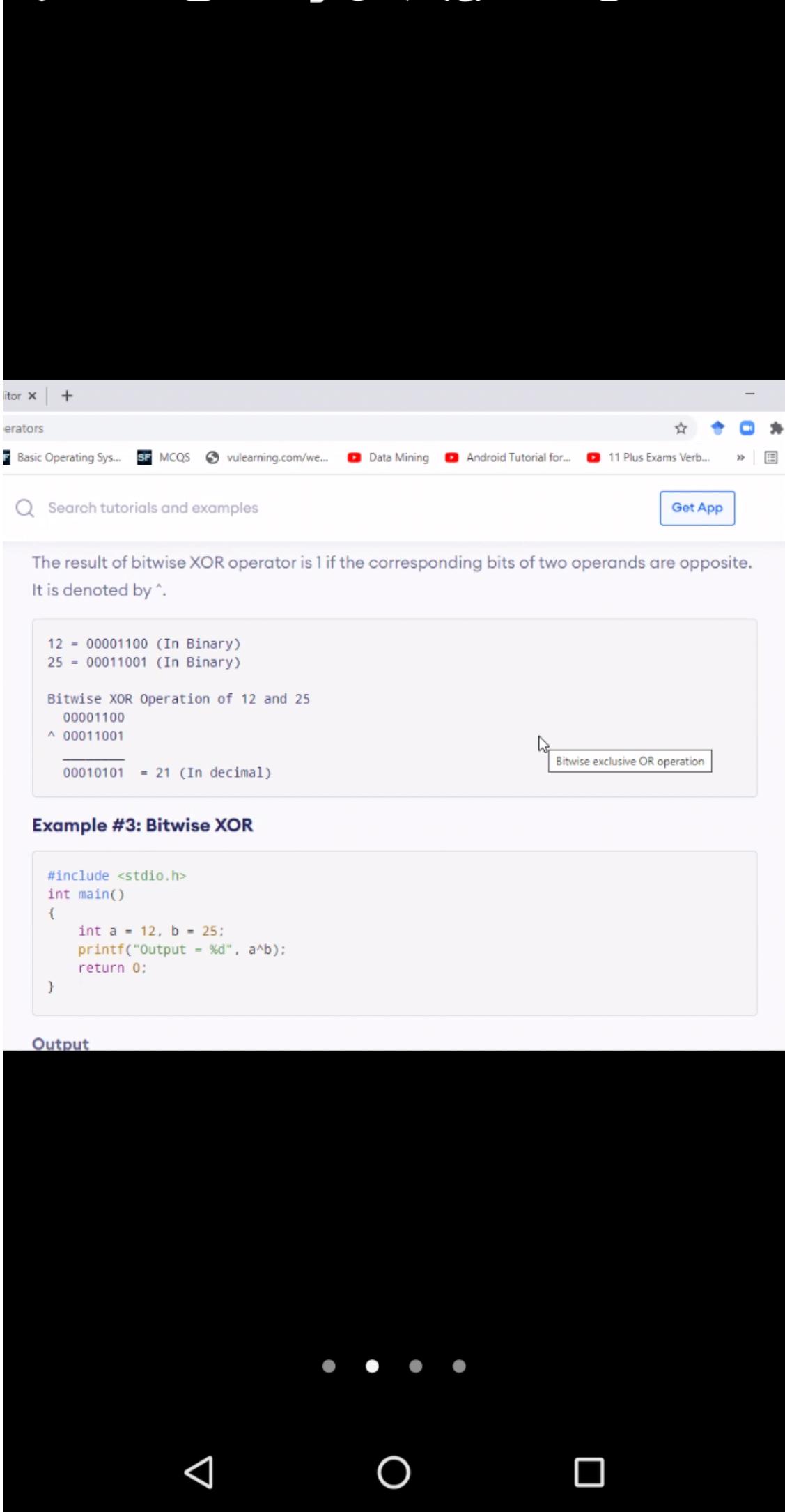
Adobe Acrobat Reader DC (32-bit)

The screenshot shows a document page from Adobe Acrobat Reader DC. At the top, there are standard window controls (minimize, maximize, close) and a toolbar with various icons. The page number is 324, and it indicates 357 of 1000 pages. The main content area contains a C program listing. The code uses standard C syntax, including comments, variable declarations, and control structures like loops and conditionals. The text is presented in a monospaced font, typical for code listings.

```
1  /* Fig. 8.14: fig08_14.c
2   Using getchar and puts */
3  #include <stdio.h>
4
5  int main( void )
6  {
7      char c; /* variable to hold character input by user */
8      char sentence[ 80 ]; /* create char array */
9      int i = 0; /* initialize counter i */
10
11     /* prompt user to enter line of text */
12     puts( "Enter a line of text:" );
13
14     /* use getchar to read each character */
15     while ( ( c = getchar() ) != '\n' ) {
16         sentence[ i++ ] = c;
17     } /* end while */
18
19     sentence[ i ] = '\0'; /* terminate string */
20
21     /* use puts to display sentence */
22     puts( "\nThe line entered was:" );
23     puts( sentence );
24     return 0; /* indicates successful termination */
25 } /* end main */
```

Fig. 8.14 | Using getchar and puts. (Part 1 of 2.)





A screenshot of a mobile browser displaying a tutorial about Bitwise XOR operators. The browser interface includes a top navigation bar with tabs like 'Basic Operating Sys...', 'MCQs', 'vulearning.com/we...', 'Data Mining', 'Android Tutorial for...', '11 Plus Exams Verb...', and a search bar with placeholder text 'Search tutorials and examples' and a 'Get App' button.

The main content area contains the following text:

The result of bitwise XOR operator is 1 if the corresponding bits of two operands are opposite. It is denoted by ^.

Bitwise XOR Operation of 12 and 25

00001100	00011001
^	
00010101 = 21 (In decimal)	

Bitwise exclusive OR operation

Example #3: Bitwise XOR

```
#include <stdio.h>
int main()
{
    int a = 12, b = 25;
    printf("Output = %d", a^b);
    return 0;
}
```

Output

... (The output field is mostly blacked out, with only a few small white dots visible at the bottom center.)



4G 34% 11:11 AM



wise Operators: AND, OR x | Online C Compiler - online edi x | G decimal to binary - Google Se x | R Binary to Decimal Converter x

rapidtables.com/convert/number/binary-to-decimal.html

http://tools.google.... New Tab Google Drive Basic Operating Sys... MCQs vulearning.com/we... Data Mining

How to convert binary to decimal

For binary number with n digits:

$$d_{n-1} \dots d_3 d_2 d_1 d_0$$

The decimal number is equal to the sum of binary digits (d_n) times their power of 2 (2^n):

$$\text{decimal} = d_0 \times 2^0 + d_1 \times 2^1 + d_2 \times 2^2 + \dots$$

Example

Find the decimal value of 111001_2 :

binary number:	1	1	1	0	0	1
power of 2:	2^5	2^4	2^3	2^2	2^1	2^0

$$111001_2 = 1 \cdot 2^5 + 1 \cdot 2^4 + 1 \cdot 2^3 + 0 \cdot 2^2 + 0 \cdot 2^1 + 1 \cdot 2^0 = 57_{10}$$

Binary to decimal conversion table

Binary Number	Decimal Number	Hex Number
0	0	0
1	1	1
10	2	2
11	3	3

• Base co
• Binary co
• Binary to
• Binary to
• Binary to
• Date to re
• Decimal t
• Decimal t
• Decimal t
• Decimal t
• Degrees t
• Degrees t
• Fraction t
• Fraction t
• Hex/decim
• Hex to AS
• Hex to bi
• Hex to de



4G 80% 10:58 AM



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Online C Compiler - online editor

megdb.com/online_c_compiler

New Tab Google Drive Basic Operating Sys... MCQS vulearning.ca

meta
or C/C++
share.
ns

main.c

```
1 // ****
2
3
4
5
6
7 ****
8
9 #include <stdio.h>
10 int main()
11 {
12     int a = 12, b = 25;
13     printf("Output = %d", a&b);
14     return 0;
15 }
```

Output = 8

...Program finished with exit code 0

Press ENTER to exit console.

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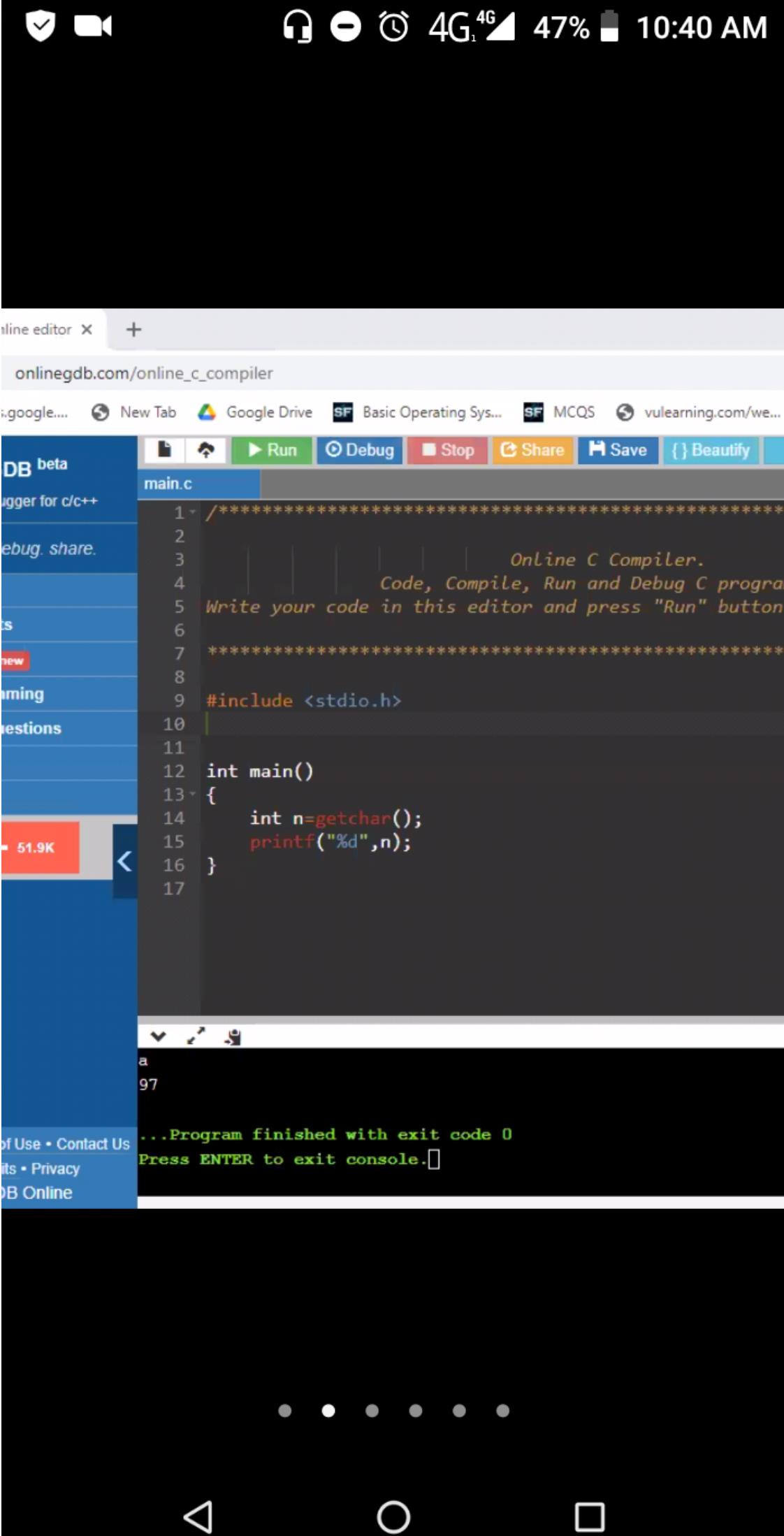


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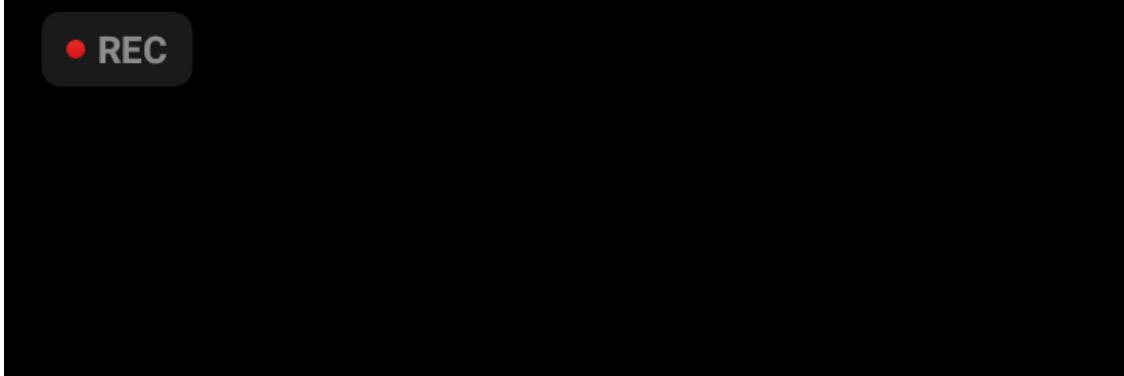
More



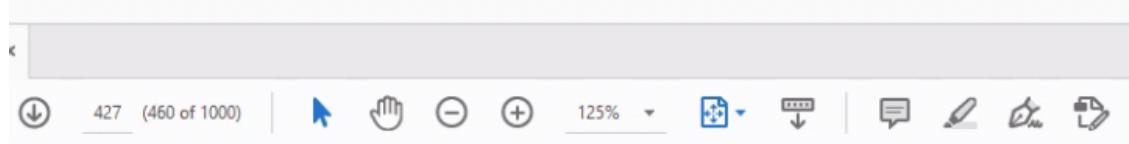




4G 68% 10:42 AM



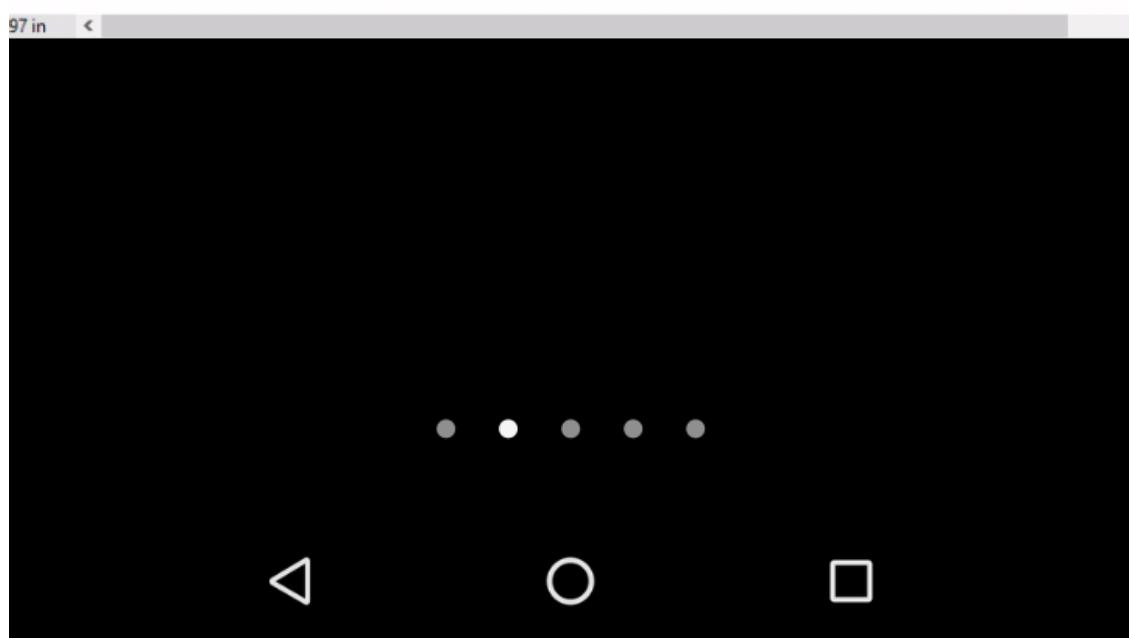
Adobe Acrobat Reader DC (32-bit)

11.5 Reading Data from a Sequential-Access File 427

```
20      /* while not end_of_file */
21      while ( !feof( cfPtr ) ) {
22          printf( "%-10d%-13s%7.2f\n", account, name, balance );
23          fscanf( cfPtr, "%d%s%lf", &account, name, &balance );
24      } /* end while */
25
26
27      fclose( cfPtr ); /* fclose closes the file */
28  } /* end else */
29
30  return 0; /* indicates successful termination */
31 } /* end main */
```

Account	Name	Balance
100	Jones	24.98
200	Doe	345.67
300	White	0.00
400	Stone	-42.16
500	Rich	224.62

Fig. 11.7 | Reading and printing a sequential file. (Part 2 of 2.)





4G 6% 12:51 PM

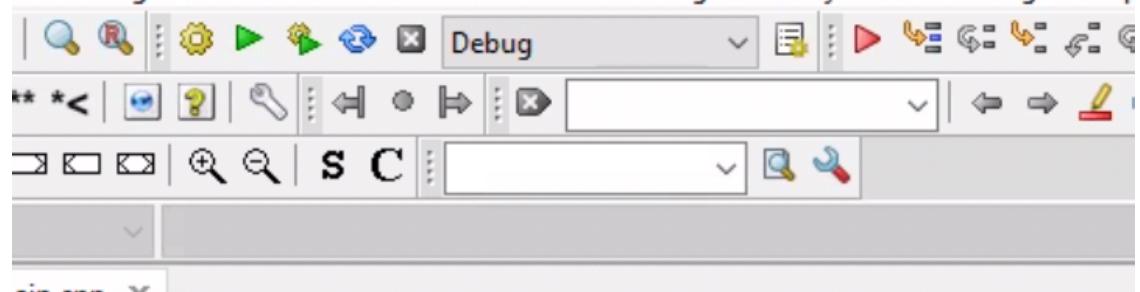


Zoom

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20.03

File Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help



main.cpp X

```
2 main()
3 {
4     int array[5]={6,12,1,7,3};
5     int u,i,temp;
6     for(i=0;i<5;i++)
7         printf("%d",array[i]);
8     u=9;
9     while(u>=1)
10    {
11        i=0;
12        while(i<u)
13        {
14            if (array[i]<array[i+1])
15            {
16                temp=array[i];
17                array[i]= array[i+1];
18                array[i+1]=temp;
19            }i++;
20        }u--;
21    }
22    for (i=0;i<5;i++)
23        printf("%d",array[i]);
24 }
```

s & others

Code::Blocks X Search results X Ccc X Build log X Build mess

File

Line Message



Windows (CR+LF)

WINDOWS-1252

Line 23, Col 31, Pos 462

Insert

M



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4G 74% 11:10 AM

The screenshot shows a mobile browser interface. At the top, there are standard Android status icons: video recording, lock screen, signal strength, battery level (74%), and time (11:10 AM). Below the status bar is a dark header bar with a magnifying glass icon and a plus sign, followed by the word "rators". The main content area is a search results page. The search query "Bitwise complement operator" is visible in the search bar. Below the search bar, there are several search results cards. One card has a blue header "Output" and contains the text "Output = 21". Another card is titled "Bitwise complement operator -" and contains the following text:
Bitwise compliment operator is an unary operator (works on only one operand). It changes 1 to 0 and 0 to 1. It is denoted by ~.

```
35 = 00100011 (In Binary)  
Bitwise complement Operation of 35  
~ 00100011  
_____  
11011100 = 220 (In decimal)
```

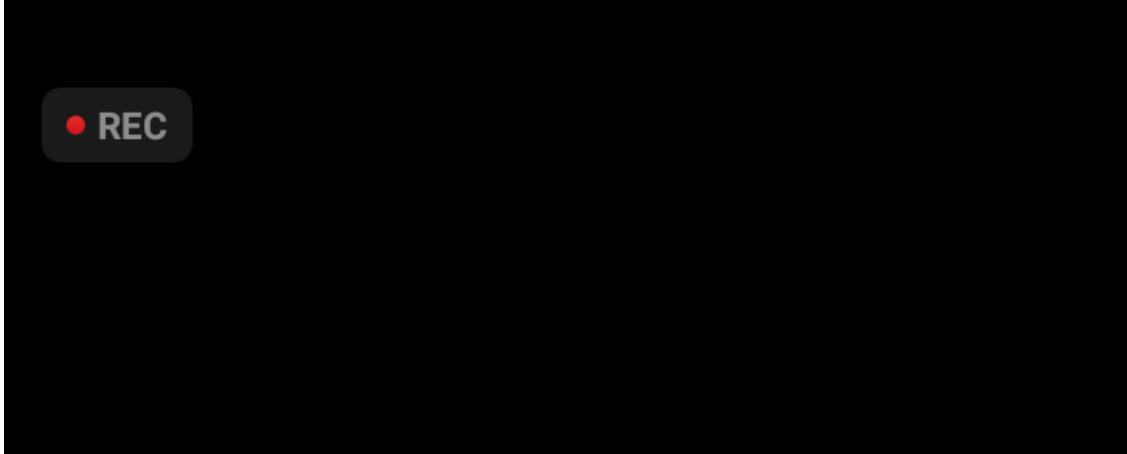
Twist in bitwise complement operator in C Programming

The bitwise complement of 35 (-35) is -36 instead of 220, but why?

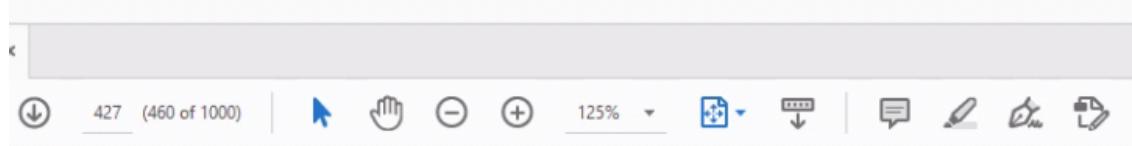
For any integer n , bitwise complement of n will be $-(n+1)$. To understand this, you should

• • • •





Adobe Acrobat Reader DC (32-bit)



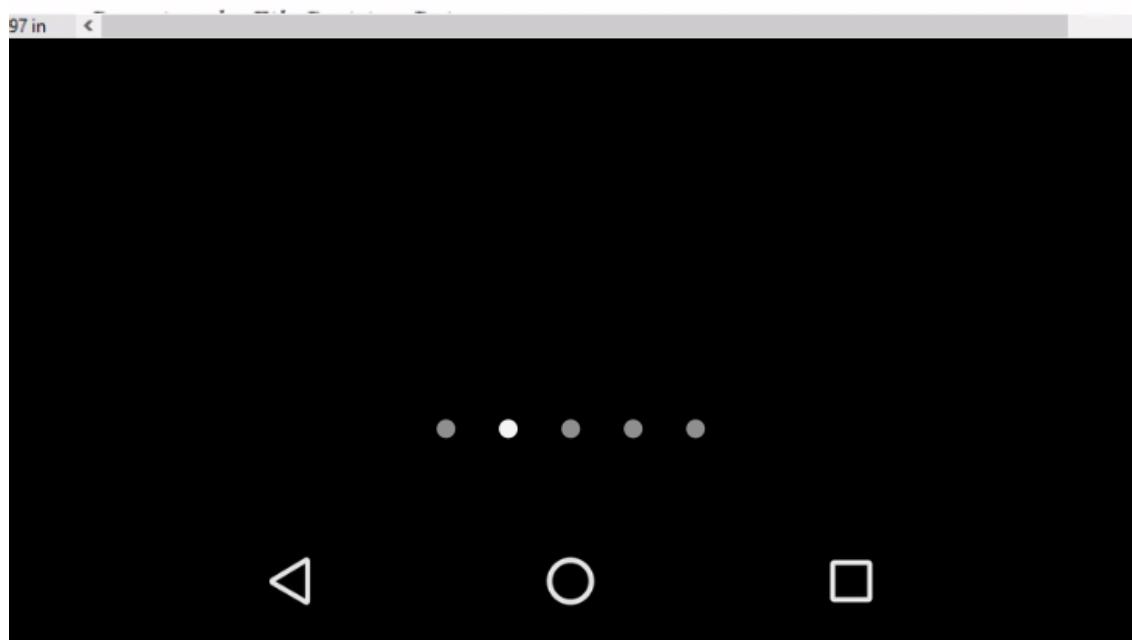
11.5 Reading Data from a Sequential-Access File

427

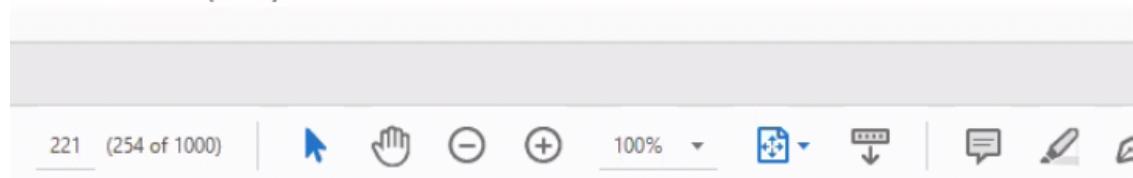
```
20      /* while not end of file */
21      while ( !feof( cfPtr ) ) {
22          printf( "%-10d%-13s%7.2f\n", account, name, balance );
23          fscanf( cfPtr, "%d%s%lf", &account, name, &balance );
24      /* end while */
25
26      fclose( cfPtr ); /* fclose closes the file */
27  } /* end else */
28
29
30  return 0; /* indicates successful termination */
31 } /* end main */
```

Account	Name	Balance
100	Jones	24.98
200	Doe	345.67
300	White	0.00
400	Stone	-42.16
500	Rich	224.62

Fig. 11.7 | Reading and printing a sequential file. (Part 2 of 2.)



Acrobat Reader DC (32-bit)



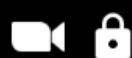
6.7 Case Study: Computing Mean, Median and Mode Using Arrays

221

```
92     /* initialize frequencies to 0 */
93     for ( rating = 1; rating <= 9; rating++ ) {
94         freq[ rating ] = 0;
95     } /* end for */
96
97     /* summarize frequencies */
98     for ( j = 0; j < SIZE; j++ ) {
99         ++freq[ answer[ j ] ];
100    } /* end for */
101
102    /* output headers for result columns */
103    printf( "%s%11s%19s\n\n%54s\n%54s\n\n",
104           "Response", "Frequency", "Histogram",
105           "1      1      2      2", "5      0      5      0      5" );
106
107    /* output results */
108    for ( rating = 1; rating <= 9; rating++ ) {
109        printf( "%8d%11d", rating, freq[ rating ] );
110
111        /* keep track of mode value and largest frequency value */
112        if ( freq[ rating ] > largest ) {
113            largest = freq[ rating ];
114            modeValue = rating;
115        } /* end if */
116
117        /* output histogram bar representing frequency value */
118        for ( h = 1; h <= freq[ rating ]; h++ ) {
119            printf( "##" );
120        } /* end inner for */
121
122        printf( "\n" ); /* being new line of output */
123    } /* end outer for */
```

● ● ● ●

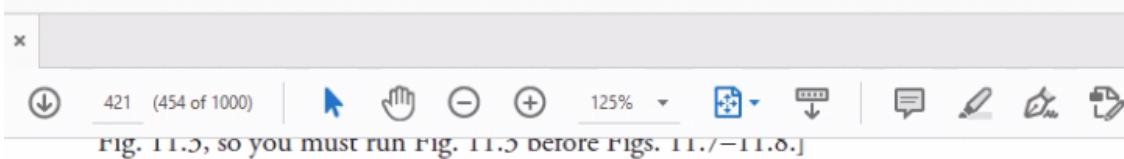




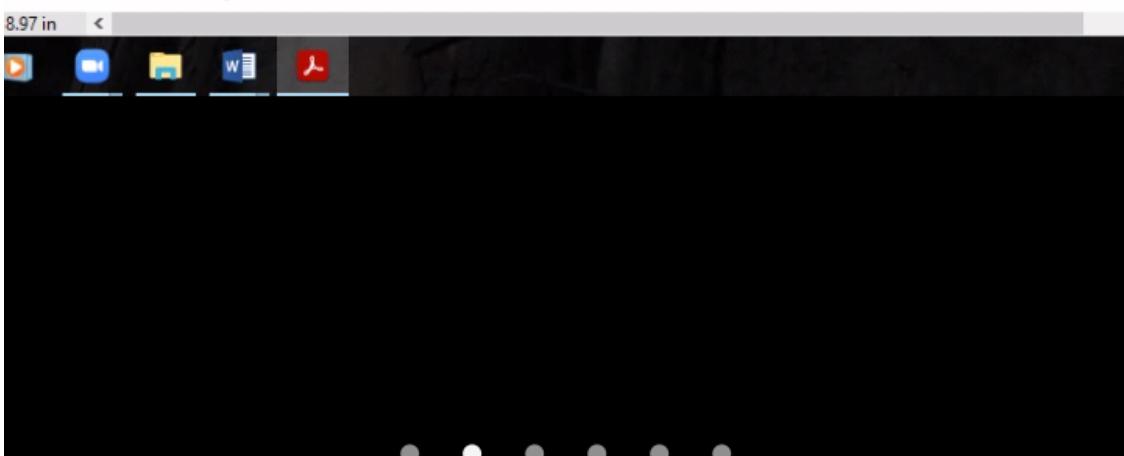
4G 78% 10:18 AM

REC

Adobe Acrobat Reader DC (32-bit)



```
1  /* Fig. 11.3: fig11_03.c
2   Create a sequential file */
3  #include <stdio.h>
4
5  int main( void )
6  {
7      int account; /* account number */
8      char name[ 30 ]; /* account name */
9      double balance; /* account balance */
10
11     FILE *cfPtr; /* cfPtr = clients.dat file pointer */
12
13     /* fopen opens file. Exit program if unable to create file */
14     if ( ( cfPtr = fopen( "clients.dat", "w" ) ) == NULL ) {
15         printf( "File could not be opened\n" );
16     } /* end if */
17     else {
18         printf( "Enter the account, name, and balance.\n" );
19         printf( "Enter EOF to end input.\n" );
20         printf( "? " );
21         scanf( "%d%s%lf", &account, name, &balance );
22
23         /* write account, name and balance into file with fprintf */
24         while ( !feof( stdin ) ) {
25             fprintf( cfPtr, "%d %s %.2f\n", account, name, balance );
26             printf( "? " );
27             scanf( "%d%s%lf", &account, name, &balance );
28         } /* end while */
29 }
```



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Operators    

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Search tutorials and examples 

2's Complement

Two's complement is an operation on binary numbers. The 2's complement of a number is equal to the complement of that number plus 1. For example:

Decimal	Binary	2's complement
0	00000000	$-(11111111+1) = -00000000 = -0(\text{decimal})$
1	00000001	$-(11111110+1) = -11111111 = -256(\text{decimal})$
12	00001100	$-(11110011+1) = -11110100 = -244(\text{decimal})$
220	11011100	$-(00100011+1) = -00100100 = -36(\text{decimal})$

Note: Overflow is ignored while computing 2's complement.

The bitwise complement of 35 is 220 (in decimal). The 2's complement of 220 is -36. Hence, the output is -36 instead of 220.

Bitwise complement of any number N is $-(N+1)$. Here's how:

bitwise complement of $N = \sim N$ (represented in 2's complement form)
2's complement of $\sim N = -(\sim(\sim N)+1) = -(N+1)$

Example #4: Bitwise complement

• • • •



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n.6th.Edition.pdf - Adobe Acrobat Reader DC (32-bit)

Help

entice.Hall-C.Ho... x

387 (420 of 1000) | 150% |

```
2     USING THE STRUCTURE MEMBER AND  
3     STRUCTURE POINTER OPERATORS */  
4     #include <stdio.h>  
5  
6     /* CARD STRUCTURE DEFINITION */  
7     struct card {  
8         char *face; /* DEFINE POINTER FACE */  
9         char *suit; /* DEFINE POINTER SUIT */  
10    }; /* END STRUCTURE CARD */  
11  
12    int main( void )  
13    {  
14        struct card aCard; /* DEFINE ONE STRUCT CARD VARIABLE */  
15        struct card *cardPtr; /* DEFINE A POINTER TO A STRUCT CARD */  
16  
17        /* PLACE STRINGS INTO aCARD */  
18        aCard.face = "Ace";  
19        aCard.suit = "Spades";  
20  
21        cardPtr = &aCard; /* ASSIGN ADDRESS OF aCARD TO CARDPTR */  
22  
23        printf( "%s%s%s\n%s%s%s\n%s%s%s\n", aCard.face, " OF ", aCard.suit,  
24            cardPtr->face, " OF ", cardPtr->suit,  
25            ( *cardPtr ).face, " OF ", ( *cardPtr ).suit );  
26        return 0; /* INDICATES SUCCESSFUL TERMINATION */  
27    } /* END MAIN */
```



Unmute



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A screenshot of a web browser window. The address bar shows the URL 'vulearning.com/we...'. Below the address bar is a search bar with the placeholder 'Search tutorials and examples' and a 'Get App' button. The main content area displays a list of bullet points:

- Right shift operator
- Left shift operator.

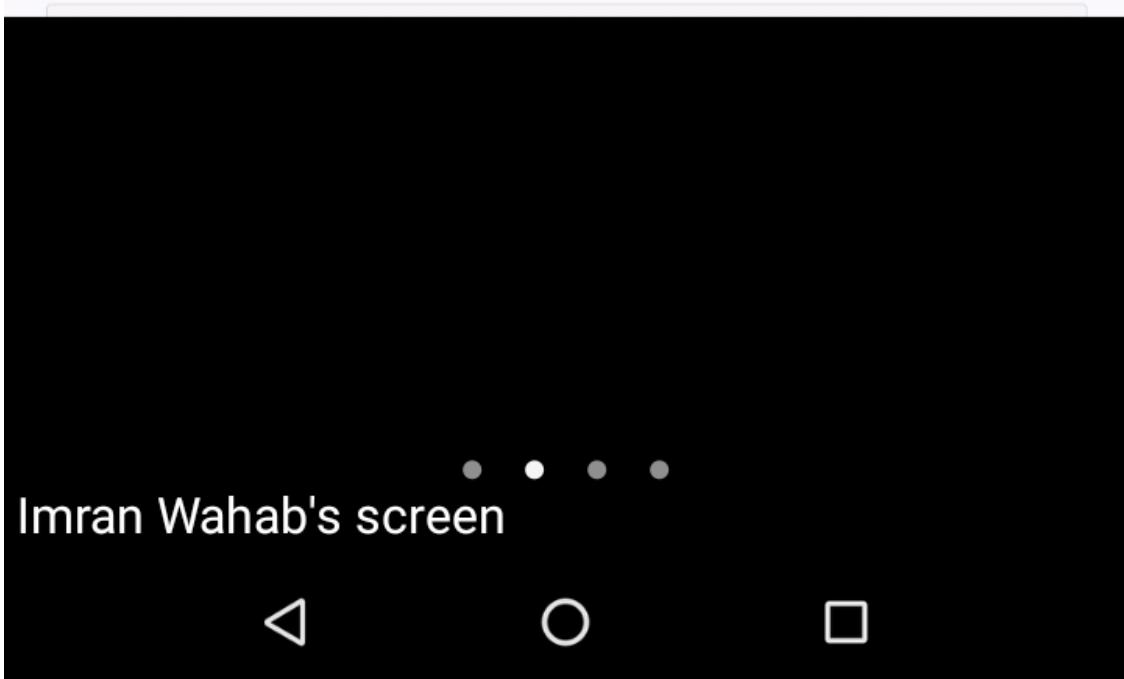
Right Shift Operator

Right shift operator shifts all bits towards right by certain number of specified bits. It is denoted by `>>`.

```
212 = 11010100 (In binary)
212>>2 = 00110101 (In binary) [Right shift by two bits]
212>>7 = 00000001 (In binary)
212>>8 = 00000000
212>>0 = 11010100 (No Shift)
```

Left Shift Operator

Left shift operator shifts all bits towards left by a certain number of specified bits. The bit positions that have been vacated by the left shift operator are filled with 0. The symbol of the left shift operator is `<<`.





4G 63% 10:25 AM

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21 (254 of 1000) |



100%



```
101 } /* end for */
102
103 /* output headers for result columns */
104 printf( "%s%11s%19s\n\n%54s\n%54s\n\n",
105         "Response", "Frequency", "Histogram",
106         "1      1      2      2", "5      0      5      0      5" );
107
108 /* output results */
109 for ( rating = 1; rating <= 9; rating++ ) {
110     printf( "%8d%11d", rating, freq[ rating ] );
111
112     /* keep track of mode value and largest frequency value */
113     if ( freq[ rating ] > largest ) {
114         largest = freq[ rating ];
115         modeValue = rating;
116     } /* end if */
117
118     /* output histogram bar representing frequency value */
119     for ( h = 1; h <= freq[ rating ]; h++ ) {
120         printf( "*" );
121     } /* end inner for */
122
123     printf( "\n" ); /* being new line of output */
124 } /* end outer for */
125
126 /* display the mode value */
127 printf( "The mode is the most frequent value.\n"
128         "For this run the mode is %d which occurred"
129         " %d times.\n", modeValue, largest );
130 } /* end function mode */
131
132 /* function that sorts an array with bubble sort algorithm */
133 void bubbleSort( int a[] )
134 {
135     int pass; /* pass counter */
136     int j; /* comparison counter */
137     int hold; /* temporary location used to swap elements */
138
139     /* loop to control number of passes */
140     for ( pass = 1; pass <= 10; pass++ ) {
141         for ( j = 0; j <= 9; j++ ) {
142             if ( a[ j ] > a[ j + 1 ] ) {
143                 hold = a[ j ];
144                 a[ j ] = a[ j + 1 ];
145                 a[ j + 1 ] = hold;
146             }
147         }
148     }
149 }
```



Imran Wahab's screen





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10:57 AM

-operators



Basic Operating Sys...



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Search tutorials and examples

12 = 00001100 (In Binary)
25 = 00011001 (In Binary)

Bit Operation of 12 and 25

00001100
& 00011001

00001000 = 8 (In decimal)

Example #1: Bitwise AND

```
#include <stdio.h>
int main()
{
    int a = 12, b = 25;
    printf("Output = %d", a&b);
    return 0;
}
```

Example of Bitwise AND c

Output

Output = 8





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5 C Functions

6 C Arrays

7 C Pointers

8 C Characters and Strings

8.1 Introduction

8.2 Fundamentals of Strings and Characters

8.3 Character-Handling Library

8.4 String Conversion Functions

8.5 Standard Input/Output Library Functions

8.6 String-Manipulation Functions

3 #include <stdio.h>

4

5 void reverse(const char * const sPtr); /* prototype */

6

7 int main(void)

8 {

9 char sentence[80]; /* create char array */

10

11 printf("Enter a line of text:\n");

12

13 /* use fgets to read line of text */

14 fgets(sentence, 80, stdin);

15

16 printf("\nThe line printed backward is:\n");

17 reverse(sentence);

18 return 0; /* indicates successful termination */

19 } /* end main */

20

21 /* recursively outputs characters in string in reverse order */

22 void reverse(const char * const sPtr)

23 {

24 /* if end of the string */

25 if (sPtr[0] == '\0') { /* base case */

26 return;

27 } /* end if */

28 else { /* if not end of the string */

29 reverse(&sPtr[1]); /* recursion step */

30 putchar(sPtr[0]); /* use putchar to display character */

31 } /* end else */

32 } /* end function reverse */

Fig. 8.13 | Using fgets and putchar. (Part 1 of 2)



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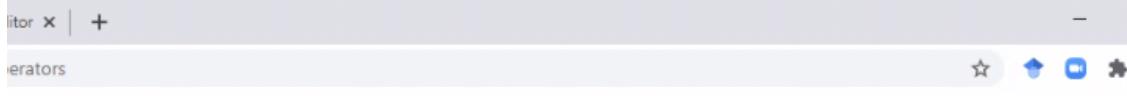


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Left Shift Operator

Left shift operator shifts all bits towards left by a certain number of specified bits. The bit positions that have been vacated by the left shift operator are filled with 0. The symbol of the left shift operator is <<.

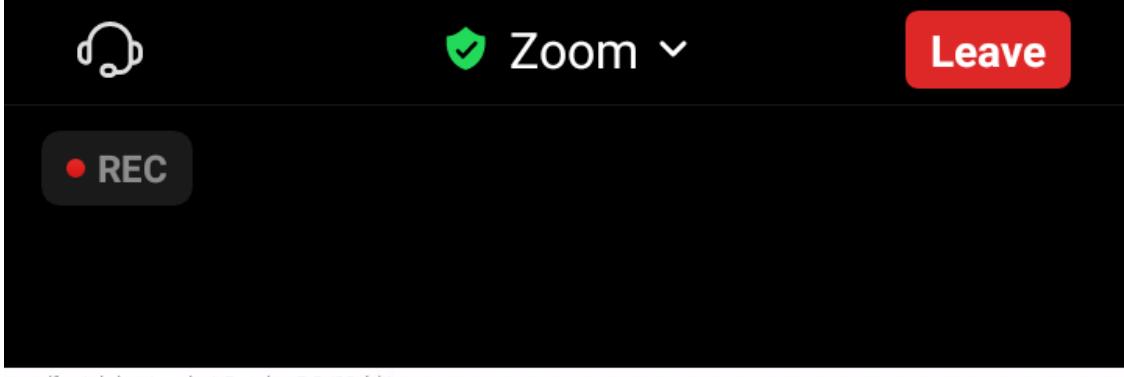
```
212 = 11010100 (In binary)
212<<1 = 110101000 (In binary) [Left shift by one bit]
212<<0 = 11010100 (Shift by 0)
212<<4 = 110101000000 (In binary) =3392(In decimal)
```

Example #5: Shift Operators

```
#include <stdio.h>
int main()
{
    int num=212, i;
    for (i=0; i<=2; ++i)
        printf("Right shift by %d: %d\n", i, num>>i);
```

• • • •





on.pdf - Adobe Acrobat Reader DC (32-bit)

A screenshot of a C code editor. The code is as follows:

```
6 int main( void )
7 {
8     char array[ 5 ]; /* define an array of size 5 */
9
10    printf( "    array = %p\n&array[0] = %p\n    &array = %p\n",
11            array, &array[ 0 ], &array );
12    return 0; /* indicates successful termination */
13 } /* end main */
```

The output window shows the following values:

```
array = 0012FF78
&array[0] = 0012FF78
&array = 0012FF78
```

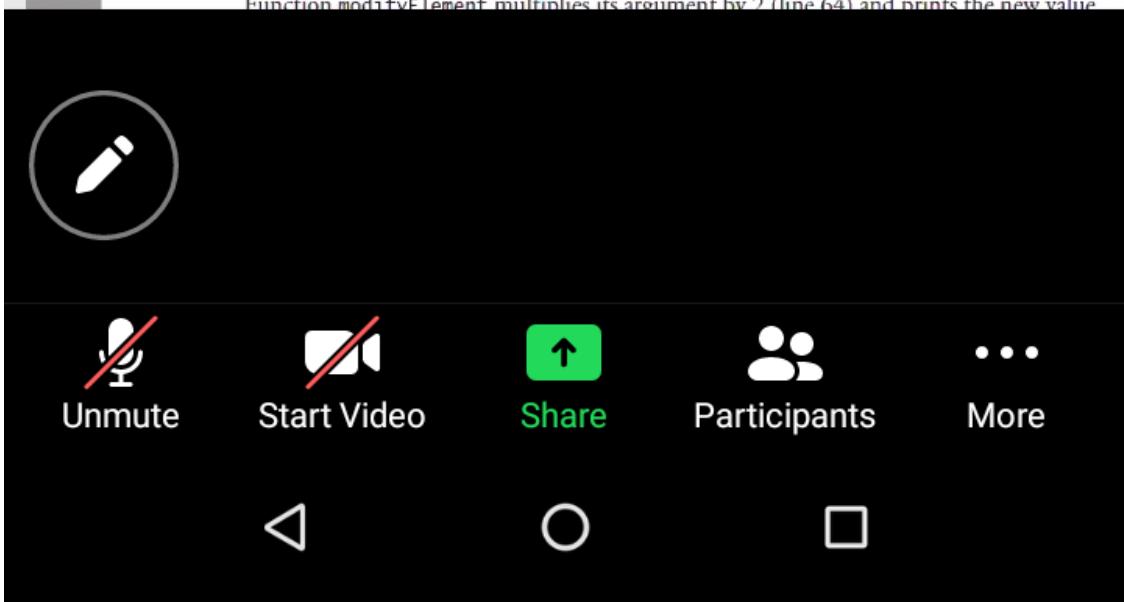
Fig. 6.12 | Array name is the same as the address of the array's first element.

For a function to receive an array through a function call, the function's parameter list must specify that an array will be received. For example, the function header for function `modifyArray` (that we called earlier in this section) might be written as

```
void modifyArray( int b[], int size )
```

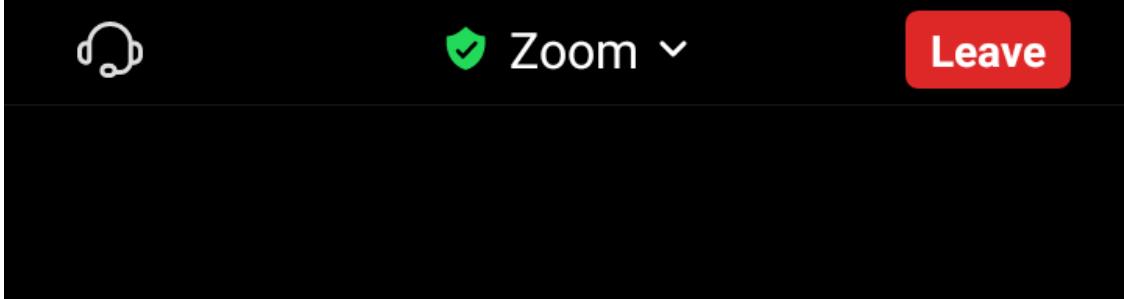
indicating that `modifyArray` expects to receive an array of integers in parameter `b` and the number of array elements in parameter `size`. The size of the array is not required between the array brackets. If it's included, the compiler checks that it's greater than zero, then ignores it. Specifying a negative `size` is a compilation error. Because arrays are automatically passed by reference, when the called function uses the array name `b`, it will be referring to the array in the caller (`hourlyTemperatures` in the preceding call). In Chapter 7, we introduce other notations for indicating that an array is being received by a function. As we'll see, these notations are based on the intimate relationship between arrays and pointers in C.

Figure 6.13 demonstrates the difference between passing an entire array and passing an array element. The program first prints the five elements of integer array `a` (lines 20–22). Next, `a` and its `size` are passed to function `modifyArray` (line 27), where each of `a`'s elements is multiplied by 2 (lines 54–55). Then `a` is reprinted in `main` (lines 32–34). As the output shows, the elements of `a` are indeed modified by `modifyArray`. Now the program prints the value of `a[3]` (line 38) and passes it to function `modifyElement` (line 40). Function `modifyElement` multiplies its argument by 2 (line 64) and prints the new value.





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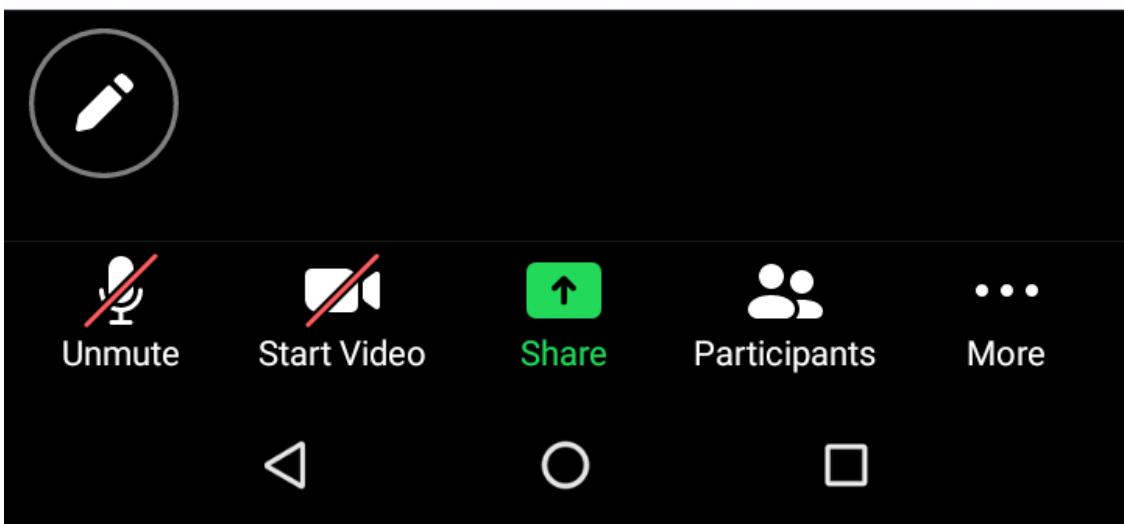


Acrobat Reader DC (32-bit)

```
220 (253 of 1000) | 🔍 ⌂ ⌂ 100% | + - | 📁 📈 | 💬 🖊 🔍
```

```
57     SIZE, total, SIZE, ( doublE ) total / SIZE );
58 } /* end function mean */
59
60 /* sort array and determine median element's value */
61 void median( int answer[] )
62 {
63     printf( "\n%s\n%s\n%s\n%s",
64             "*****", " Median", "*****",
65             "The unsorted array of responses is" );
66
67     printArray( answer ); /* output unsorted array */
68
69     bubbleSort( answer ); /* sort array */
70
71     printf( "\n\nThe sorted array is" );
72     printArray( answer ); /* output sorted array */
73
74     /* display median element */
75     printf( "\n\nThe median is element %d of\n"
76             "the sorted %d element array.\n"
77             "For this run the median is %d\n",
78             SIZE / 2, SIZE, answer[ SIZE / 2 ] );
79 } /* end function median */
80
81 /* determine most frequent response */
82 void mode( int freq[], const int answer[] )
83 {
84     int rating; /* counter for accessing elements 1-9 of array freq */
85     int j; /* counter for summarizing elements 0-98 of array answer */
86     int h; /* counter for displaying histograms of elements in array freq */
87     int largest = 0; /* represents largest frequency */
88     int modeValue = 0; /* represents most frequent response */
89
90     printf( "\n%s\n%s\n%s\n",
91             "*****", " Mode", "*****" );
```

Fig. 6.16 | Survey data analysis program. (Part 2 of 4.)





4G 63% 10:25 AM

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21 (254 of 1000) |



```
107     /* output results */
108     for ( rating = 1; rating <= 9; rating++ ) {
109         printf( "%8d%11d", rating, freq[ rating ] );
110
111         /* keep track of mode value and largest frequency value */
112         if ( freq[ rating ] > largest ) {
113             largest = freq[ rating ];
114             modeValue = rating;
115         } /* end if */
116
117         /* output histogram bar representing frequency value */
118         for ( h = 1; h <= freq[ rating ]; h++ ) {
119             printf( "*" );
120         } /* end inner for */
121
122         printf( "\n" ); /* being new line of output */
123     } /* end outer for */
124
125     /* display the mode value */
126     printf( "The mode is the most frequent value.\n"
127            "For this run the mode is %d which occurred"
128            " %d times.\n", modeValue, largest );
129 } /* end function mode */
130
131 /* function that sorts an array with bubble sort algorithm */
132 void bubbleSort( int a[] )
133 {
134     int pass; /* pass counter */
135     int j; /* comparison counter */
136     int hold; /* temporary location used to swap elements */
137
138     /* Loop to control number of passes */
139     for ( pass = 1; pass < SIZE; pass++ ) {
140
141         /* Loop to control number of comparisons per pass */
142         for ( j = 0; j < SIZE - pass; j++ ) {
```



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Bitwise complement Operation of 35
~ 00100011
11011100 = 220 (In decimal)

Twist in bitwise complement operator in C Programming

The bitwise complement of 35 (-35) is -36 instead of 220, but why?

For any integer n , bitwise complement of n will be $-(n+1)$. To understand this, you should have the knowledge of 2's complement.

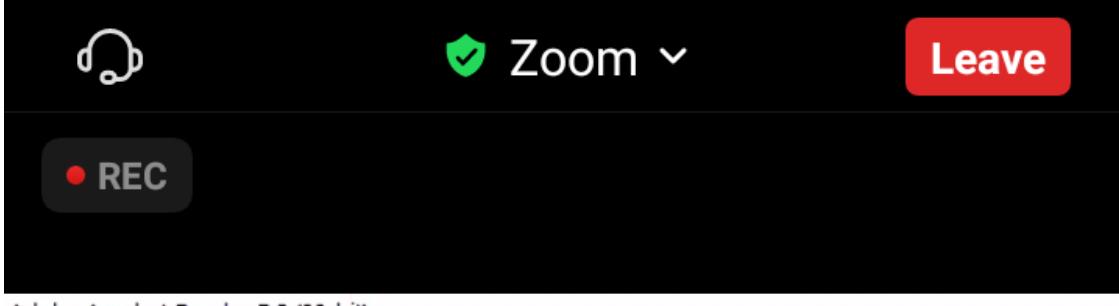
2's Complement

Two's complement is an operation on binary numbers. The 2's complement of a number is equal to the complement of that number plus 1. For example:

Decimal	Binary	2's complement
0	00000000	$-(11111111+1) = -00000000 = -0(\text{decimal})$
1	00000001	$-(11111110+1) = -11111111 = -256(\text{decimal})$
12	00001100	$-(11110011+1) = -11110100 = -244(\text{decimal})$
220	11011100	$-(00100011+1) = -00100100 = -36(\text{decimal})$

Note: Overflow is ignored while computing 2's complement.

• • • •



Adobe Acrobat Reader DC (32-bit)

The screenshot shows a document page from Adobe Acrobat Reader DC. The title of the page is "6.5 Passing Arrays to Functions". Below the title, there is a horizontal line of code:

```
1 /* Fig. 6.12: fig06_12.c
2      The name of an array is the same as &array[ 0 ] */
3 #include <stdio.h>
4
5 /* function main begins program execution */
6 int main( void )
7 {
8     char array[ 5 ]; /* define an array of size 5 */
9
10    printf( "    array = %p\n&array[0] = %p\n    &array = %p\n",
11            array, &array[ 0 ], &array );
12    return 0; /* indicates successful termination */
13 } /* end main */
```

Below the code, the output of the program is displayed in a box:

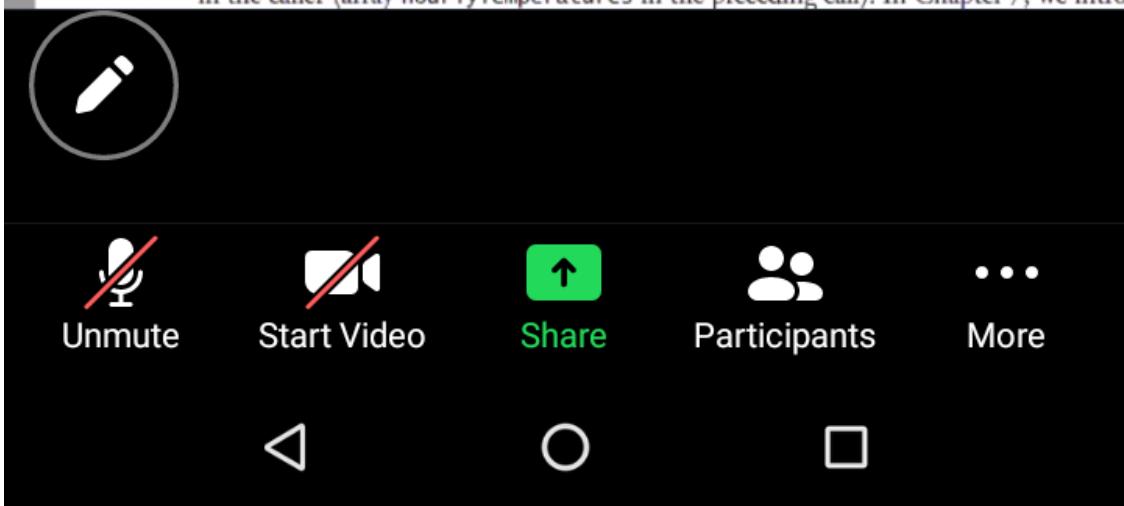
```
array = 0012FF78
&array[0] = 0012FF78
&array = 0012FF78
```

Fig. 6.12 | Array name is the same as the address of the array's first element.

For a function to receive an array through a function call, the function's parameters must specify that an array will be received. For example, the function header for function `modifyArray` (that we called earlier in this section) might be written as

```
void modifyArray( int b[], int size )
```

indicating that `modifyArray` expects to receive an array of integers in parameter `b` and the number of array elements in parameter `size`. The size of the array is not required between the array brackets. If it's included, the compiler checks that it's greater than zero, then ignores it. Specifying a negative size is a compilation error. Because arrays are automatically passed by reference, when the called function uses the array name `b`, it will be referring to the array in the caller (`array hourlyTemperatures` in the preceding call). In Chapter 7, we intro-



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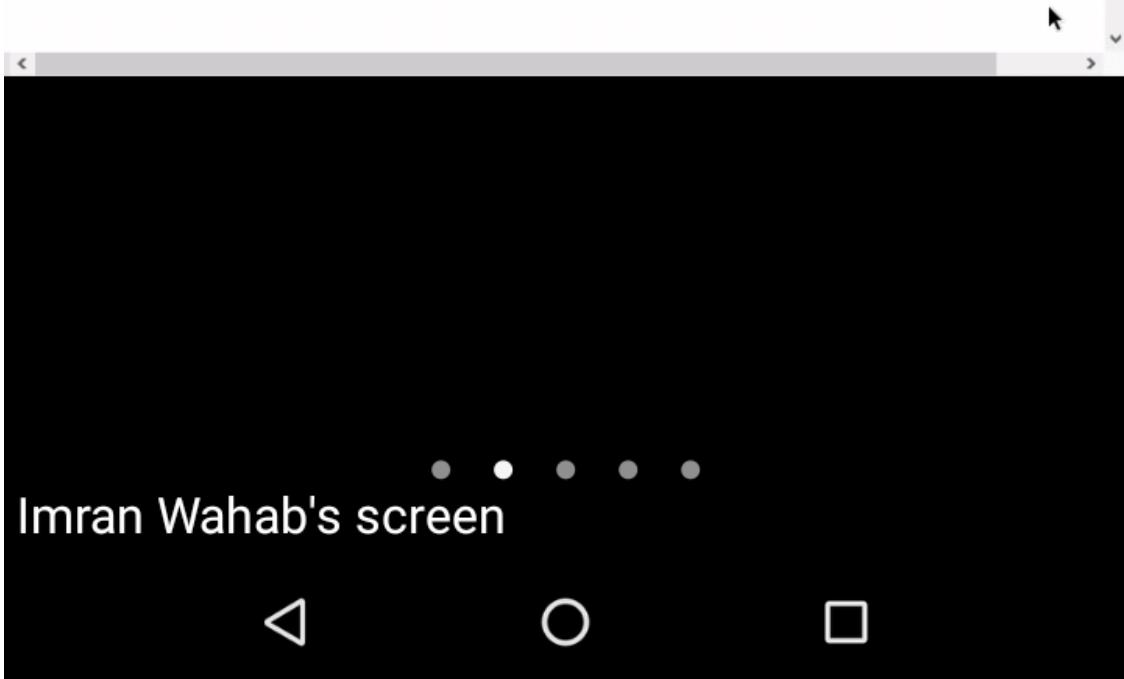
robat Reader DC (32-bit)

426 (459 of 1000) | 125% |

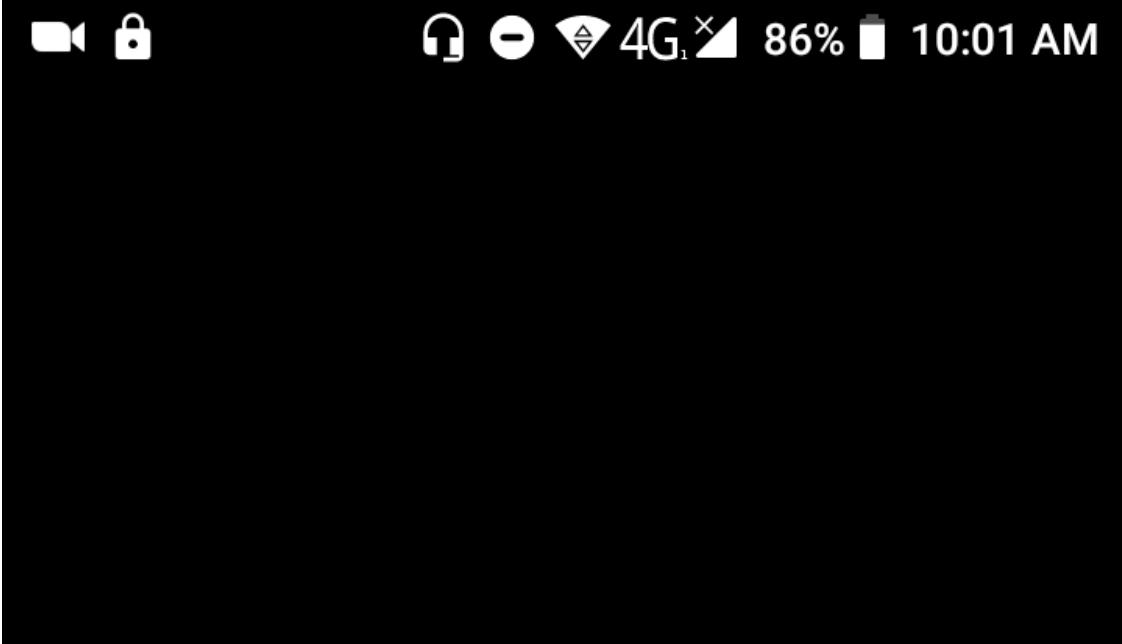
ment (line 24) executes, the program reads another record from the file and account, name and balance take on new values. When the program reaches the end of the file, the file is closed (line 27) and the program terminates. Function feof returns true only *after* the program attempts to read the nonexistent data following the last line.

```
1 /* Fig. 11.7: fig11_07.c
2      Reading and printing a sequential file */
3 #include <stdio.h>
4
5 int main( void )
6 {
7     int account;      /* account number */
8     char name[ 30 ]; /* account name */
9     double balance;  /* account balance */
10
11    FILE *cfPtr;      /* cfPtr = clients.dat file pointer */
12
13    /* fopen opens file; exits program if file cannot be opened */
14    if ( ( cfPtr = fopen( "clients.dat", "r" ) ) == NULL ) {
15        printf( "File could not be opened\n" );
16    } /* end if */
17    else { /* read account, name and balance from file */
18        printf( "%-10s%-13s%lf\n", "Account", "Name", "Balance" );
19        fscanf( cfPtr, "%d%s%lf", &account, name, &balance );
```

ig. 11.7 | Reading and printing a sequential file. (Part I of 2.)



Imran Wahab's screen



prog_fundMid2013 [Compatibility Mode] - Word

The screenshot shows a Microsoft Word document with the following content:

Subjective Portion

Q No.2: Write a program that produces the following output using any loop statement(s). [5]

0

0 1

0 1 4

0 1 4 9

0 1 4 9 16

QNo.3: What is the output of the following program? [5]

```
#include <stdio.h>
int main(void)
{
    int a = 3, b = 2, c = 0;
    for (int i = 1; i <= 2; i++)
    {
        if (b >= 2)
        {
            c = a + b;
            a = b / 3;
        }
        else
            a = a * 2 - 1;
        b = c + 3;
    }
    printf("%d\t%d\t%d\n", a, b, c);
}
```

The image shows a dark blue header bar at the top of a screen. Below it is a lighter blue title bar. On the left side of the title bar, the text '(ED STATES)' is visible. On the right side, there are three white icons: a square with a double arrow, a grid, and a circular arrow. Below the title bar, in the center, is a row of four small, semi-transparent gray dots arranged horizontally.

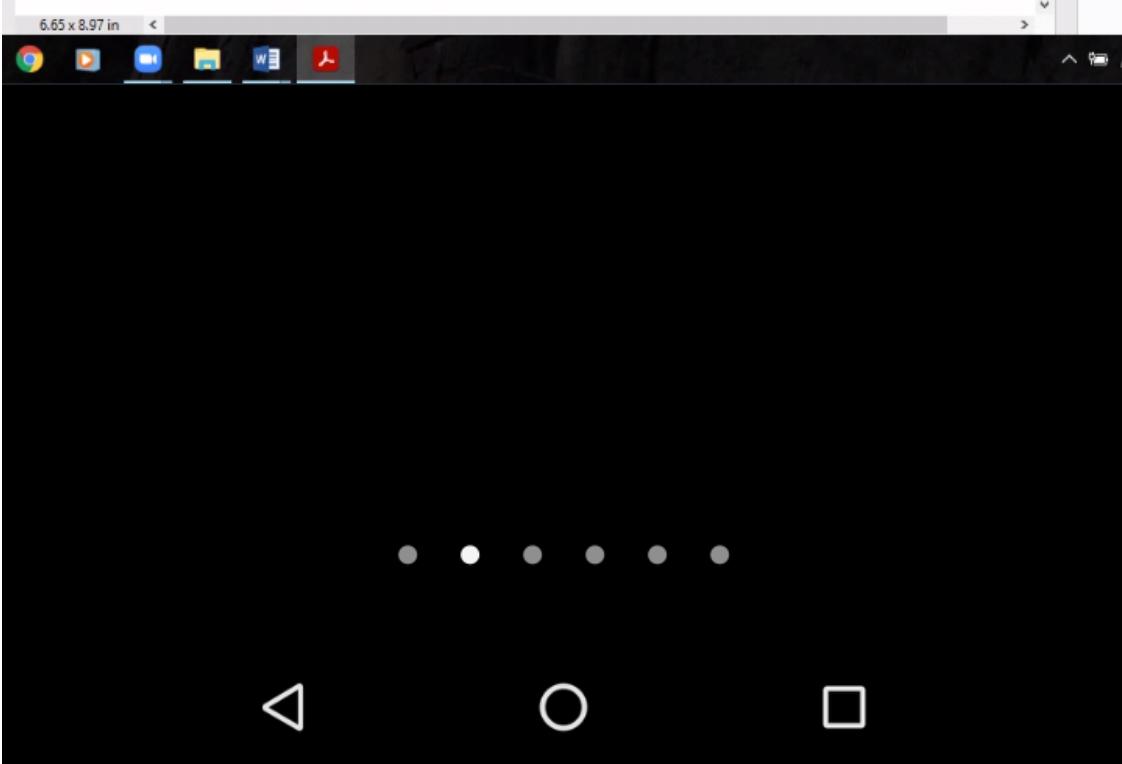
Imran Wahab's screen





tion.pdf - Adobe Acrobat Reader DC (32-bit)

Fig. 11.3 | Creating a sequential file. (Part 1 of 2.)





68% 10:52 AM

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com/online_c_compiler

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main.c

```
13 char sex;
14 };
15 int main()
16 {
17     struct empl ali;
18     struct empl waseem={28,200000,'M'};
19     struct empl saba;
20     ali.age=30;
21     ali.sal=100000;
22     ali.sex='M';
23
24     printf("Age of Ali is %d",ali.age);
25     printf(" Sal of Ali is %d",ali.sal);
26     printf("Sex of Ali is %c\n",ali.sex);
27
28     printf("Age of waseem is %d",waseem.age);
29     printf(" Sal of waseem is %d",waseem.sal);
30     printf("Sex of waseem is %c",waseem.sex);
31
32     return 0;
33 }
```

input

```
Age of Ali is 30 Sal of Ali is 100000Sex of Ali is M
Age of waseem is 28 Sal of waseem is 200000Sex of waseem is M
...Program finished with exit code 0
Press ENTER to exit console.
```



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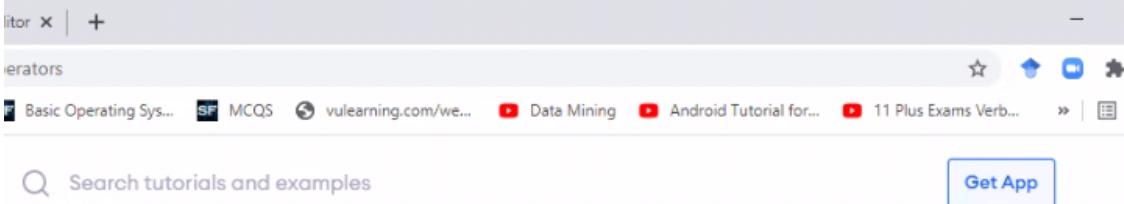
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```
#include <stdio.h>
int main()
{
    int num=212, i;
    for (i=0; i<=2; ++i)
        printf("Right shift by %d: %d\n", i, num>>i);

    printf("\n");

    for (i=0; i<=2; ++i)
        printf("Left shift by %d: %d\n", i, num<<i);

    return 0;
}
```

Right Shift by 0: 212
Right Shift by 1: 106
Right Shift by 2: 53

Left Shift by 0: 212
Left Shift by 1: 424
Left Shift by 2: 848

• • • •





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1

program finished with exit code 0

ENTER to exit console. █

A horizontal row of six small gray dots, evenly spaced, centered at the bottom of the page.

Imran Wahab's screen





4G 72% 11:15 AM

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to 0 and 0 to 1. It is denoted by ~.

```
35 = 00100011 (In Binary)  
Bitwise complement Operation of 35  
~ 00100011  
11011100 = 220 (In decimal)
```

Twist in bitwise complement operator in C Programming

The bitwise complement of 35 (-35) is -36 instead of 220, but why?

For any integer n , bitwise complement of n will be $-(n+1)$. To understand this, you should have the knowledge of 2's complement.

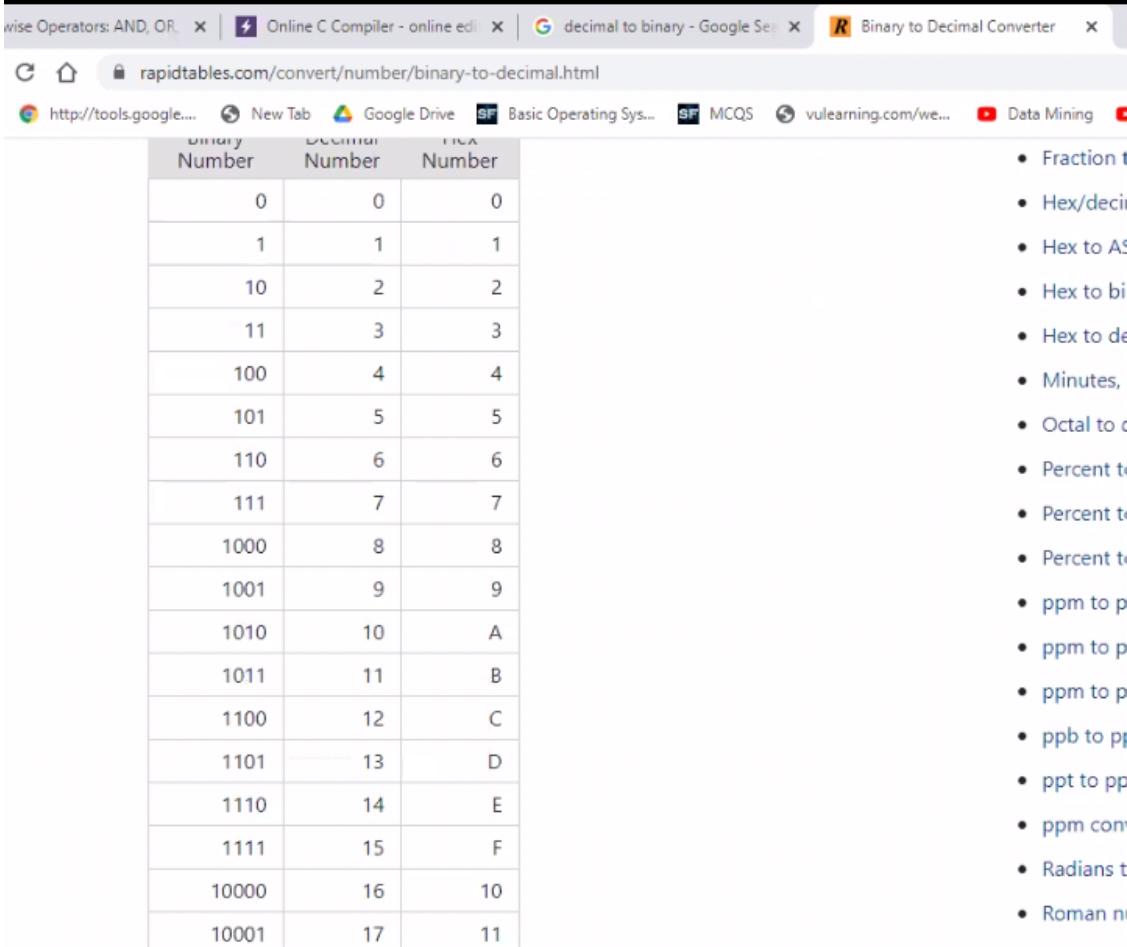
2's Complement

Two's complement is an operation on binary numbers. The 2's complement of a number is equal to the complement of that number plus 1. For example:

Decimal	Binary	2's complement
0	00000000	$-(11111111+1) = -00000000 = -0$ (decimal)

• • • •





The screenshot shows a mobile browser window with several tabs open at the top. The active tab displays a table for binary-to-decimal conversion. The table has three columns: Binary Number, Decimal Number, and Hex Number. It lists values from 0 to 17. To the right of the table is a sidebar with a list of related conversion tools.

Binary Number	Decimal Number	Hex Number
0	0	0
1	1	1
10	2	2
11	3	3
100	4	4
101	5	5
110	6	6
111	7	7
1000	8	8
1001	9	9
1010	10	A
1011	11	B
1100	12	C
1101	13	D
1110	14	E
1111	15	F
10000	16	10
10001	17	11

- Fraction to decimal
- Hex/decimal conversion
- Hex to ASCII
- Hex to binary
- Hex to decimal
- Minutes, seconds to decimal
- Octal to decimal
- Percent to decimal
- Percent to fraction
- ppm to ppb
- ppm to ppf
- ppm to ppn
- ppb to ppf
- ppf to ppn
- ppm conversion
- Radians to degrees
- Roman numerals converter

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4G 64% 11:36 AM

Editors: AND, OR, X | Online C Compiler - online editor | decimal to binary - Google Search | Decimal to Binary Converter | 0.1 Decimal

<http://rapidtables.com/convert/number/decimal-to-binary.html>

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[Binary to Decimal conversion ▶](#)

How to convert decimal to binary

Conversion steps:

1. Divide the number by 2.
2. Get the integer quotient for the next iteration.
3. Get the remainder for the binary digit.
4. Repeat the steps until the quotient is equal to 0.

Example #1

Convert 13_{10} to binary:

Division by 2	Quotient	Remainder	Bit #
$13/2$	6	1	0
$6/2$	3	0	1
$3/2$	1	1	2
$1/2$	0	1	3

So $13_{10} = 1101_2$

Example #2

Convert 174_{10} to binary:

Division by 2	Quotient	Remainder	Bit #
$174/2$	87	0	0
$87/2$	43	1	1
$43/2$	21	1	2
$21/2$	10	1	3
$10/2$	5	0	4
$5/2$	2	1	5
$2/2$	1	0	6
$1/2$	0	1	7

- ASCII,Hex,Binary,I
- ASCII text to binary
- ASCII text to hex
- Base converter
- Binary converter
- Binary to ASCII te
- Binary to decimal
- Binary to hex con
- Date to roman nu
- Decimal to fractic
- Decimal to perce
- Decimal to binary
- Decimal to octal
- Decimal to hex co
- Degrees to deg,n
- Deg,min,sec to de
- Degrees to radian
- Fraction to decimal
- Fraction to perce

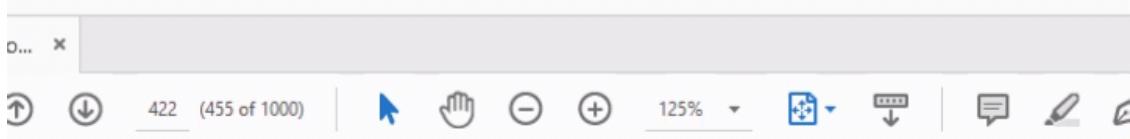
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4G 72% 10:31 AM

If - Adobe Acrobat Reader DC (32-bit)

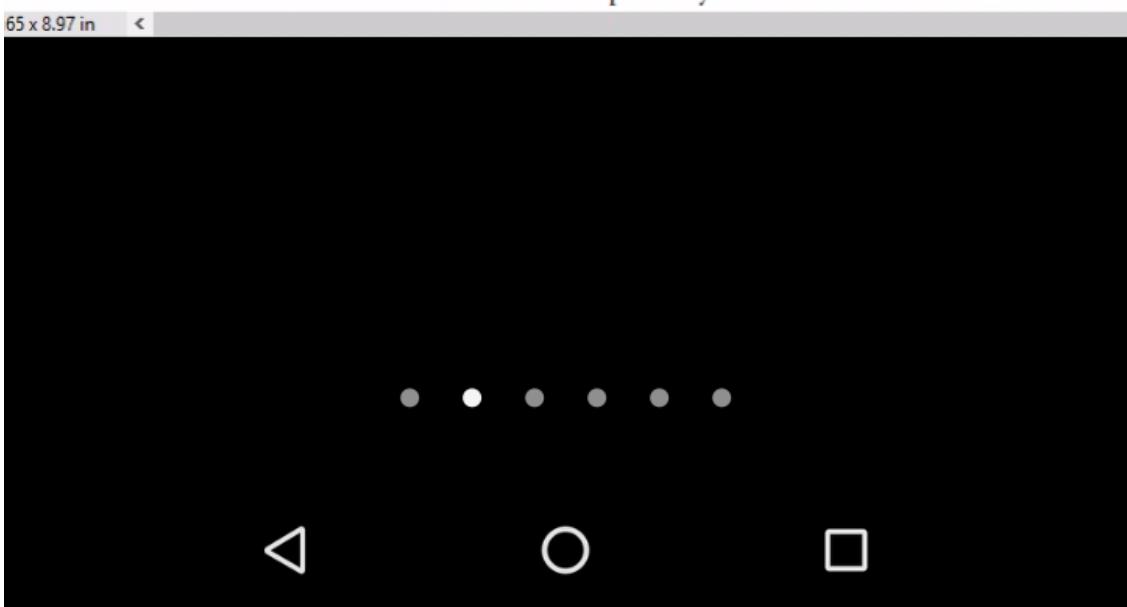
**422 Chapter 11 C File Processing**

```
29
30     fclose( cfPtr ); /* fclose closes file */
31 } /* end else */
32
33     return 0; /* indicates successful termination */
34 } /* end main */
```

```
Enter the account, name, and balance.
Enter EOF to end input.
? 100 Jones 24.98
? 200 Doe 345.67
? 300 White 0.00
? 400 Stone -42.16
? 500 Rich 224.62
? ^Z[
```

Fig. 11.3 | Creating a sequential file. (Part 2 of 2.)

Now let's examine this program. Line 11 states that `cfptr` is a pointer to a FILE structure. A C program administers each file with a separate FILE structure. You need no the specifics of the FILE structure to use files, though the interested reader can st declaration in `stdio.h`. We'll soon see precisely how the FILE structure leads indi





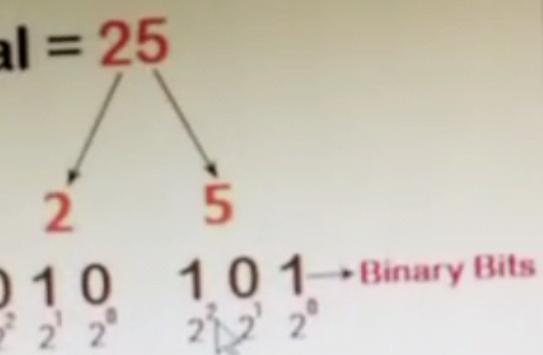
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Pictorial Presentation:

Octal to Binary

Octal = 25



$$(25)_8 = (010101)_2$$

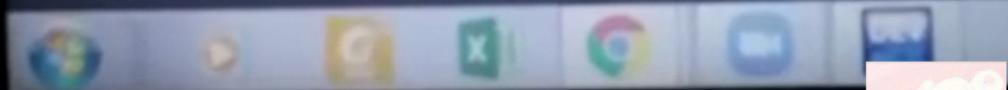
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Sample Solution:

C Code:

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

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428

Chapter 11 C File Processing

```
/* Fig. 11.8: fig11_08.c
   Credit inquiry program */
#include <stdio.h>

/* function main begins program execution */
int main( void )
{
    int request;      /* request number */
    int account;      /* account number */
    double balance;   /* account balance */
    char name[ 30 ];  /* account name */
    FILE *cfPtr;      /* clients.dat file pointer */

    /* fopen opens the file; exits program if file cannot be opened */
    if ( ( cfPtr = fopen( "clients.dat", "r" ) ) == NULL ) {
        printf( "File could not be opened\n" );
    } /* end if */
    else {

        /* display request options */
        printf( "Enter request\n"
            " 1 - List accounts with zero balances\n"
            " 2 - List accounts with credit balances\n"
            " 3 - List accounts with debit balances\n"
            " 4 - End of run? " );
        scanf( "%d", &request );
    }
}
```



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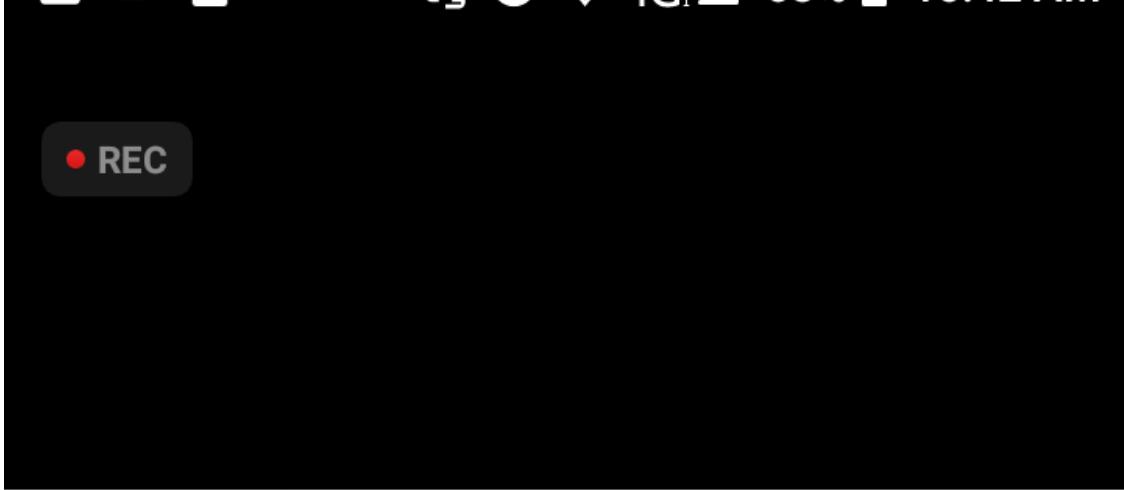
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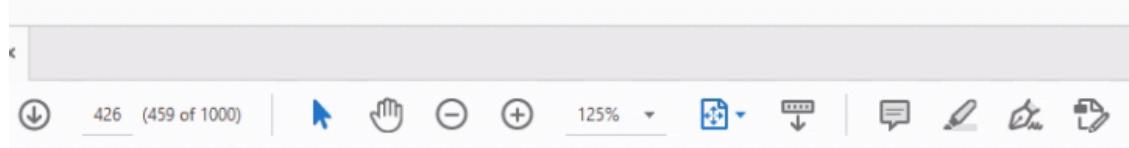




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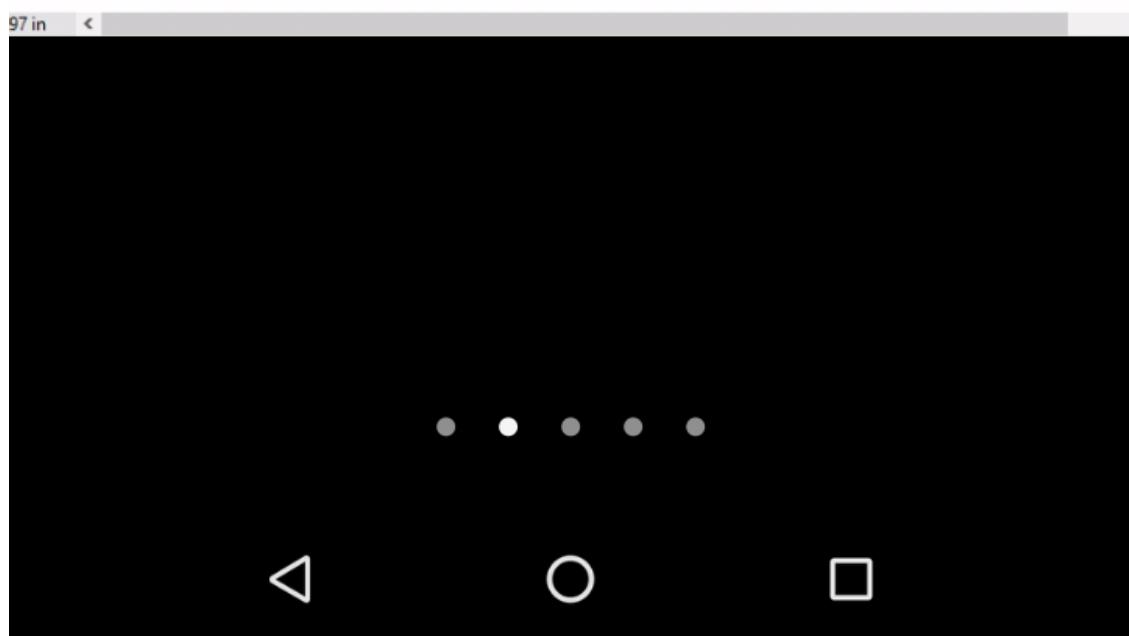


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ment (line 24) executes, the program reads another record from the file and account, name and balance take on new values. When the program reaches the end of the file, the file is closed (line 27) and the program terminates. Function feof returns true only *after* the program attempts to read the nonexistent data following the last line.

```
1  /* Fig. 11.7: fig11_07.c
2   * Reading and printing a sequential file */
3  #include <stdio.h>
4
5  int main( void )
6  {
7      int account;      /* account number */
8      char name[ 30 ]; /* account name */
9      double balance; /* account balance */
10
11     FILE *cfPtr;      /* cfPtr = clients.dat file pointer */
12
13     /* fopen opens file; exits program if file cannot be opened */
14     if ( ( cfPtr = fopen( "clients.dat", "r" ) ) == NULL ) {
15         printf( "File could not be opened\n" );
16     } /* end if */
17     else { /* read account, name and balance from file */
18         printf( "%-10s%-13s%1f\n", "Account", "Name", "Balance" );
19         fscanf( cfPtr, "%d%s%lf", &account, name, &balance );
```

Fig. 11.7 | Reading and printing a sequential file. (Part I of 2.)



4G 34% 11:11 AM

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main.c

```
1  ****
2
3
4  |           |           |           |           |           |           |           |
5  |           |           |           |           |           |           |           |
6  |           |           |           |           |           |           |           |
7  |           |           |           |           |           |           |           |
8
9  #include <stdio.h>
10
11
12
13 int main()
14 {
15     char sentence[ 80 ];
16     fgets( sentence, 80, stdin );
17     putchar( sentence[ 0 ] );
18     putchar( sentence[ 1 ][ ] );
19
20     return 0;
21 }
22
```

input

```
asdf
as
```

...Program finished with exit code 0
Press ENTER to exit console.



4G 70% 10:48 AM

The screenshot shows a mobile application interface for an online C compiler. At the top, there's a navigation bar with a plus sign icon, a URL field containing ".com/online_c_compiler", and a tab bar with several items: New Tab, Google Drive, Basic Operating Sys..., MCQS, vulearning.com/we..., and Data Mining. Below the navigation bar is a toolbar with icons for Run, Debug, Stop, Share, Save, and Beautify.

The main area displays a code editor window titled "main.c". The code is as follows:

```
9 #include <stdio.h>
10 struct empl {
11     int age;
12     int sal;
13     char sex;
14 };
15 int main()
16 {
17     struct empl ali;
18     struct empl waseem;
19     struct empl saba;
20     ali.age=30;
21     ali.sal=100000;
22     ali.sex='M';
23
24     printf("Age of Ali is %d",ali.age);
25     printf(" Sal of Ali is %d",ali.sal);
26     printf("Sex of Ali is %c",ali.sex);
27
28     return 0;
29 }
```

Below the code editor is a terminal window labeled "input" which shows the output of the program:

```
Age of Ali is 30 Sal of Ali is 100000Sex of Ali is M
...Program finished with exit code 0
Press ENTER to exit console.
```

Imran Wahab's screen





4G 65% 10:59 AM

m/online_c_compiler

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Run Debug Stop Share Save Beautify

main.c

```
9 #include <stdio.h>
10 struct empl {
11     int age;
12     int sal;
13     char sex;
14 }
15 int main()
16 {
17     struct empl ali;
18     struct empl waseem={28,200000,'M'};
19     struct empl saba;
20     ali.age=30;
21     ali.sal=100000;
22     ali.sex='M';
23
24
25
26
27
28     printf("Age of Ali is %d",ali.age);
29     printf(" Sal of Ali is %d",ali.sal);
30     printf("Sex of Ali is %c\n",ali.sex);
```

input

Compilation failed due to following error(s).

```
main.c: In function 'main':
main.c:24:14: error: expected expression before '{' token
    ali.address={'s','a'};
```

• • • • •





4G 63% 11:37 AM



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C ⌂ ⌂ ⌂ rapidtables.com/convert/number/binary-to-decimal.html

http://tools.google... New Tab Google Drive Basic Operating Sys... MCQs vulearning.com/we... Data Mining ASCII,Hex

Decimal to Binary converter ↗

How to convert binary to decimal

For binary number with n digits:

$$d_{n-1} \dots d_3 d_2 d_1 d_0$$

The decimal number is equal to the sum of binary digits (d_n) times their power of 2 (2^n):

$$\text{decimal} = d_0 \times 2^0 + d_1 \times 2^1 + d_2 \times 2^2 + \dots$$

Example

Find the decimal value of 111001_2 :

binary number:	1	1	1	0	0	1
power of 2:	2^5	2^4	2^3	2^2	2^1	2^0

$$111001_2 = 1 \cdot 2^5 + 1 \cdot 2^4 + 1 \cdot 2^3 + 0 \cdot 2^2 + 0 \cdot 2^1 + 1 \cdot 2^0 = 57_{10}$$

Binary to decimal conversion table

Binary Number	Decimal Number	Hex Number
0	0	0



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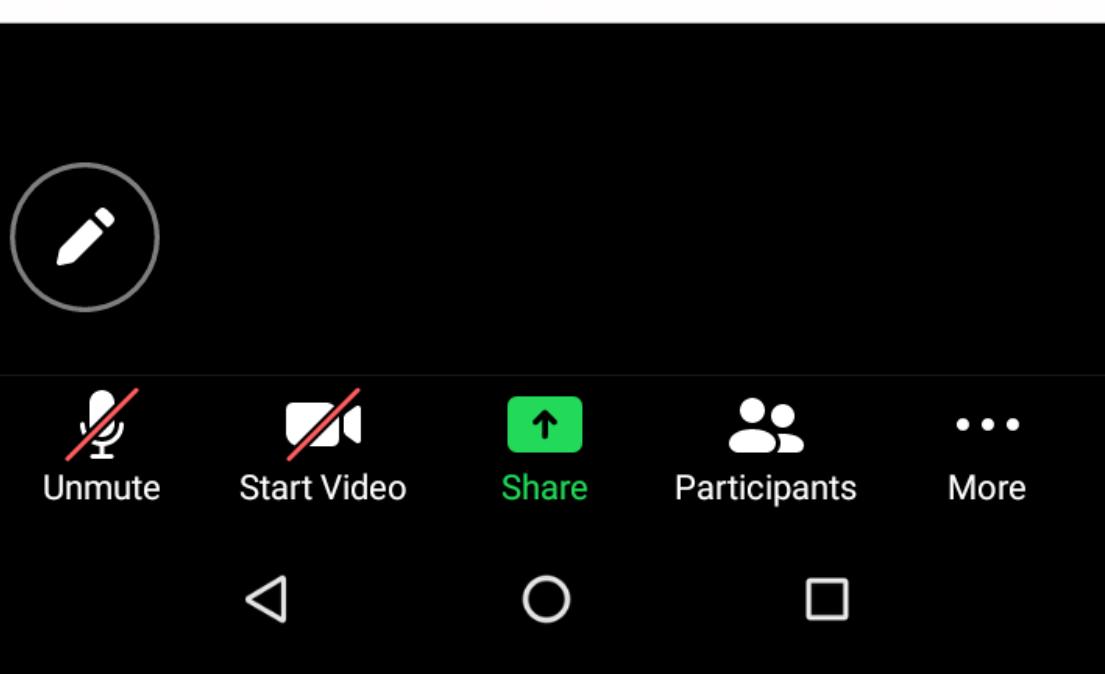
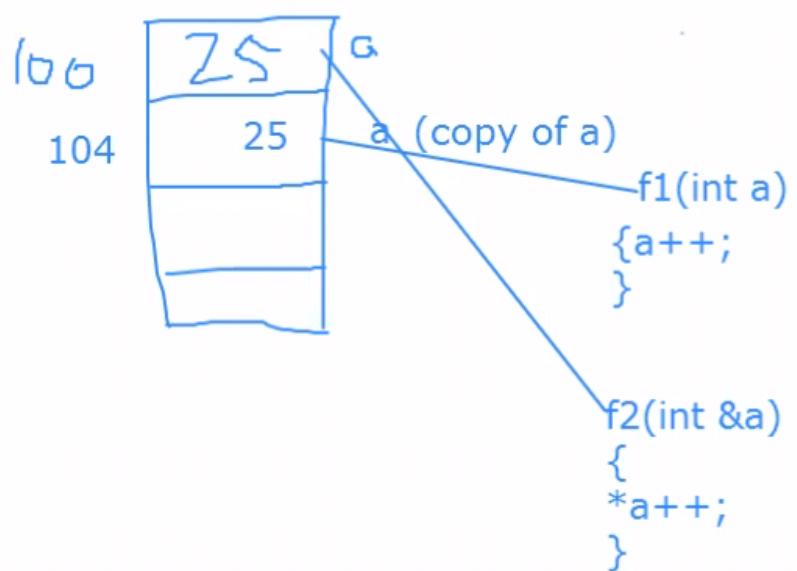




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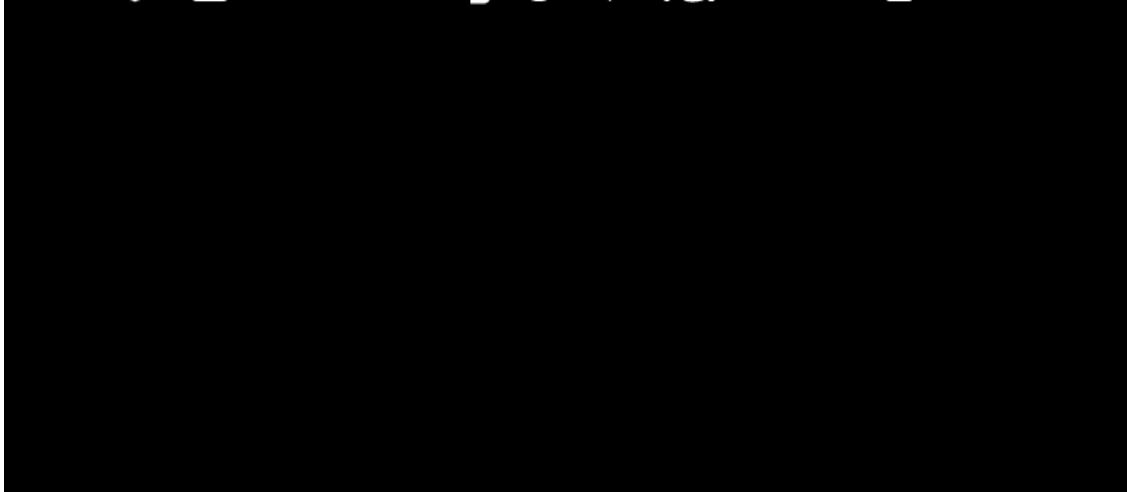
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Messenger

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```
26     for(i=0;i<n, i++)
27 {
    Input the number of elements to be stored in the array :5
Input 5 elements in the array :
element - 0 : 10
element - 1 : 12
element - 2 : 15
element - 3 : 11
element - 4 : 18
The total number of duplicate elements found in the array is: 0
...
...Program finished with exit code 2
Press ENTER to exit console.
```

Contact





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```
main.c
17     printf("element - %d : ",i);
18     scanf("%d",&fst[i]);
19 }
20 for(i=0;i<n; i++)
21 {
22     snd[i]=fst[i];
23     trd[i]=0;
24 }
25
26 for(i=0;i<n; i++)
27 {
28     for(j=0;j<n; j++)
29     {
30         if(fst[i]==snd[j])
31         {
32             trd[j]=mm;
33             mm++;
34         }
35     }
36     mm=1;
37 }
38
39 for(i=0; i<n; i++)
40 {
41     if(trd[i]==2){rpt++;}
42 }
printf("The total number of duplicate elements found in the
```

O | =

Count even & odd element

```
#include <stdio.h>
#define MaxSize 100
```

```
int main()
```

```
{  
    int arr[MaxSize];
```

```
    int i, size, even, odd;
```

```
    printf("Enter size of the array : ");
```

```
    scanf("%d", &size);
```

```
    printf("Enter %d element in array : ", size);
```

```
    for(i=0; i<size; i++)
```

```
{  
    scanf("%d", &arr[i]);
```

```
    even = 0;
```

```
    Odd = 0;
```

```
    for(i=0; i<size; i++)
```

```
{  
    if(arr[i] % 2 == 0)
```

```
{  
    even++;
```

```
}  
else  
{  
    odd++;
```

```
}  
}
```



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PROGRAMMING FUNDAMENTAL

```
int a=5;
f(a);
{
    f(x);
    a++;
}
} )
```

x=5,6

```
f(int a)
{
    a++;
}
f2(int x)
{
    x++;
}
```

Ex:

~~```
#include <Stdio.h>
int cubeByRef(int*,);
void main()
{
```~~

Pointer in function.

Ex:

~~```
#include <Stdio.h>
intvoid cubeByRef(int *nPtr);
void main()
{
```~~

int number=5;

Pointf("The original value of
number is %d", num);

```
cubeByRef(&number);
```

Upper triangle matrix

```
#include <stdio.h>
#define MAX_ROWS 3
#define MAX_COLS 3
int main()
{
    int array[MAX_ROWS][MAX_COLS];
    int row, col, isUpper;
    Pointf("Enter elements in matrix of
size %d x %d :\n", Max_Rows, Max_Cols)
    for (row = 0; row < Max_Rows; row++)
    {
        for (col = 0; col < Max_Cols; col++)
        {
            scanf("%d", &array[row][col]);
        }
    }
    isUpper = 1;
    for (row = 0; row < Max_Rows; row++)
    {
        for (col = 0; col < Max_Cols; col++)
        {
            if (col < row && array[row][col] != 0)
```



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Sum of Array Elements

```
# include <stdio.h>
# define Max-size 100
int main ()
{
    int arr[Max-Size]
    int i, n, sum=0
    printf("Enter size of the array:");
    scanf("%d", &n);
    printf("Enter %d element in the array:", n);
    for( i=0 : i<n; i++)
    {
        scanf("%d", &arr[i]);
        sum += arr[i];
    }
    printf("Sum of all element of array
           = %d", sum);
    return 0;
}
```



Print all Negative element in array

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

```
# define Max_size 100
```

```
int main()
```

```
{
```

```
int arr[Max_SIZE];
```

```
int i, N;
```

```
printf("Enter size of the array:");
```

```
scanf("%d", &N);
```

```
printf("Enter element in array:");
```

```
for(i=0; i<N; i++)
```

```
{
```

```
scanf("%d", &arr[i]);
```

```
}
```

```
printf("\nAll negative elements in array are: ");
```

```
for(i=0; i<N; i++)
```

```
{
```

```
if(arr[i] < 0)
```

```
{
```

```
printf("%d\t", arr[i]);
```

```
}
```

```
}
```

```
return 0;
```



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```
if isUpper == 0;  
}{  
if (isUpper == 1)  
{  
printf("\n The matrix is Upper  
triangular matrix");  
for (Row = 0; Row < Mat - Rows; Row++)  
{  
for (Col = 0; Col < Mat - Col; Col++)  
{  
printf("%d", arry[Row][Col]);  
}  
printf("\n");  
}  
else  
{  
printf("\n The matrix is not upper  
triangular matrix");  
}  
return 0;  
}
```



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```
Pointf("\nElements of dest array are:\n");
for (int i = 0; i < size; i++)
{
    Pointf("%d\n", dest[i]);
}
return 0;
```



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Point $f(1.2 + 1.2t)$, result
, result.

Set $t = 0$,

}



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Sum of main diagonal elements of matrix

```
# include <stdio.h>
# define SIZE 3 // Matrix size
```

```
int main()
```

```
{
```

```
    int A [SIZE] [SIZE];
```

```
    int row, col, sum = 0;
```

printf ("Enter elements in matrix of size

~~1. d x 1. d~~

1. d x 1. d : \n, SIZE, SIZE);

```
for (row = 0; row < SIZE; row++)
```

```
{
```

```
    for (col = 0; col < SIZE; col++)
```

```
{
```

```
        scanf ("%d", & A [row] [col]);
```

```
}
```

```
}
```

```
for (row = 0; row < SIZE; row++)
```

```
{
```

```
    sum = sum + A [row] [row]; }
```

printf ("\n Sum of main diagonal
elements = %d", sum);

between 0:



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Input and Print elements in array

```
# include <stdio.h>
# define Max_size 100
int main()
{
    int arry[Max_size];
    int i, N;
    printf("Enter size of array:");
    scanf("%d", &N);
    printf("Enter %d element in array:", N);
    for(i=0; i<N; i++)
    {
        scanf("%d", &arry[i]);
    }
    printf("\n Element in array are:");
    for(i=0; i<N; i++)
    {
        printf("%d", arry[i]);
    }
    return 0;
}
```



(Copy elements of one array to another)

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

```
# define Max_SIZE 100
```

```
int main()
```

```
{
```

```
int source[Max_SIZE], dest[Max_SIZE];
```

```
int i, size;
```

```
printf("Enter the size of the array: ");
```

```
scanf("%d", &size);
```

```
printf("Enter elements of source array: ");
```

```
for(i=0 ; i<size ; i++)
```

```
{
```

```
scanf("%d", &source[i]);
```

```
}
```

```
for(i=0 ; i<size ; i++)
```

```
{
```

```
dest[i] = source[i];
```

```
}
```

```
printf("\nElements of source array: ") ;
```

```
for(i=0 ; i<size ; i++)
```

```
{
```

```
printf("%d", source[i]);
```

```
}
```



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~~int f ("Total even numbers = l.d\n" + s);
Point f ("Total odd numbers = l.d\n" + o);~~

Section 0;
}

Find Maximum & Minimum

```
# include <stdio.h>
# define Max-size 10
int main()
{
    int arr[Max-size];
    int i, max, min, size;

    Max-size of the array
    printf("Enter size of the array");
    scanf("%d", &size);
    printf("Enter elements in the array");
    for(i=0; i<size; i++)
    {
        scanf("%d", &arr[i]);
    }

    max = arr[0];
    min = arr[0];
    for(i=1; i<size; i++)
    {
        if(arr[i] > max)
            max = arr[i];
    }
}
```



```
Make Simple Calculator  
#include <stdio.h>  
int main ()
```

```
char op;  
float num1, num2, result = 0.0;  
printf("Welcome To Simple Calculator");  
scanf("%f", &num1);  
scanf("%f", &num2);
```

```
scanf("%c", &op);  
if (op == '+') {
```

```
    result = num1 + num2;
```

```
    case '-' :
```

```
    result = num1 - num2;
```

```
    break;
```

```
case '*' :
```

```
result = num1 * num2;
```

```
break;
```

```
case '/' :
```

```
result = num1 / num2;
```

```
break;
```

```
default :
```

```
    printf("Invalid Operator");
```



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if (arr[i] < min)

{

min = arr[i];

}

}

printf("Maximum element = %d \n", max);
printf("Minimum element = %d ", min);

return 0;

}



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```
int a[] = {3, 6, 2, 5, 5, 3, 13};
```

```
for(i=0; i<n; i++)
```

```
for(j=i+1; j<n; j++)
```

```
{ if(a[i] == a[j])
```

```
printf("%d is duplicate", a[i]),
```

```
break;
```

```
}
```