```
/*1.  Write a C program to read number of items, rate and calculate total
amount.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int noi;
      float r,ta;
      printf("\nEnter the number of items:  ");
      scanf("%d",&noi);
      printf("\nEnter the rate of an item:  ");
      scanf("%f",&r);
      ta=noi*r;
      printf("\nThe total amount =Rs. %f",ta);
      getch();
}
.....................................................................
.....................


/*2.  Write a C program to convert days into year, months and remaining
days.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int days, y, m, rd;
      printf("\nEnter the number of days:  ");
      scanf("%d",&days);
      y = days / 365;
      rd = days %365;
      m = rd / 30;
      rd = rd % 30;
      printf("\nThe %d days converted into %d year %d months and %d
remaining days",days, y, m, rd);
      getch();
}
.....................................................................
.............................................
/*3.  Write a C program to add two distances meter and centimeter.*/
#include<stdio.h>
#include<conio.h>
main()
{
int m1, c1, m2, c2, m, c;
printf("\nEnter first distance in meter and centimeter : ");
scanf("%d %d", &m1, &c1);
printf("\nEnter second distance in meter and centimeter : ");
scanf("%d %d", &m2, &c2);
c=(c1+c2)%100;
m=m1+m2 +(c1+c2)/100;
printf("\nSum of the two distances is %d m and %d cm", m,c);
getch();
}
.....................................................................
.....................................
/*4.  Write a C program to add two distances in feet and inches.*/
#include<stdio.h>
#include<conio.h>
main()
```

```
{
int f1, i1, f2, i2, f, i;
printf("\nEnter first distance in feet and inches : ");
scanf("%d %d", &f1, &i1);
printf("\nEnter second distance in feet and inches : ");
scanf("%d %d", &f2, &i2);
i=(i1+i2)%12;
f=f1+f2 +(i1+i2)/12;
printf("\nSum of the two distances %d ft %d in and %d ft %d in is %d feet
and %d inches", f1,i1,f2,i2,f,i);
getch();
}
.....
.....
/* 5. Write a C program to add two times in hour, minute and second.*/
#include<stdio.h>
#include<conio.h>
main()
{
int h1, m1, s1, h2, m2, s2, h, m, s;
printf("\nEnter first time in hour, minute and second : ");
scanf("%d %d %d", &h1,&m1, &s1);
printf("\nEnter second time in hour, minute and second : ");
scanf("%d %d %d", &h2,&m2, &s2);
s = (s1+s2)%60;
m = (m1+m2 + (s1+s2)/60)% 60;
h = h1+h2+ (m1+m2 + (s1+s2)/60)/ 60;
printf("\nThe sum of two times is %d hr %d min and %d sec", h,m,s);
getch();
}
.....
.....
/* 6. To input a positive integer and find it is a perfect cube number or
not.*/
#include<stdio.h>
#include<conio.h>
main()
{
int n, i;
printf("\nEnter any number to check perfect cube or not : ");
scanf("%d",&n);
for(i=1;i<n;i++)
{
if(i*i*i == n)
{
printf("\n %d is perfect cube number",n);
break;
}
}
if(i==n)
printf("\n%d number is not perfect cube number",n);
getch();
}
.....
.....
/* 7. Write a C program to calculate simple interest and compound
interest.*/
#include<stdio.h>
#include<math.h>
#include<conio.h>
```

```
main()
{
float p,t,r,si,ci;
printf("\nEnter principal: ");
scanf("%f",&p);
printf("\nEnter time: ");
scanf("%f",&t);
printf("\nEnter rate of interest: ");
scanf("%f",&r);
si = p*t*r/100;
ci = p*(pow(1+r/100,t)-1);
printf("\nSimple interest is %.2f",si);
printf("\nCompound interest is %.2f",ci);
getch();
}
```

```
/* 8. WAP to read a 5 digit number and find sum of individual digits.
i.e. 54879=5+4+8+7+9=33.*/
#include<stdio.h>
#include<conio.h>
main()
{
int i, n, m, a,b,c,d, s=0;
printf("\nEnter any 5 digit number (or UPTO 5 digits): ");
scanf("%d", &n);
m = n;
a = n % 10; //extract last number of 54879 i.e. 9
n = n / 10; //extract number except last number 9 i.e. 5487
b = n % 10; // extract last number of 5487 i.e. 7
n = n / 10; //extract number except last number 7 i.e. 548
c = n % 10; // extract last number of 548 i.e. 8
n = n / 10; //extract number except last number 8 i.e. 54
d = n % 10; //extract last number of 54 i.e. 4
n = n / 10; //extract number except last number 4 i.e. 5
s = a+b+c+d+n;
printf("\nThe sum of digits of %d is %d",m,s);
getch();
}
```

```
/* 9. Write a C program to read a number and display it equivalence in
octal and hexadecimal number.*/
#include<stdio.h>
#include<conio.h>
main()
{
int n, o, h;
printf("\nEnter any decimal number : ");
scanf("%d", &n);
printf("\nOctal of %d is %o", n,n);
printf("\nHexadecimal of %d is %X",n,n);
getch();
}
```

```
/* 10.     Write a C program to read a number and check it is Armstrong
number or not. [Armstrong number 153 = 13+53+33]*/
#include<stdio.h>
#include<conio.h>
```

```
main()
{
int n, m, b, c, a = 0;
printf("\nEnter any three digit number : ");
scanf("%d", &n);
m = n;
b = n % 10; //extracting last number from 153 digit number i.e. 3
n = n / 10; //extracting number except last digit 3 i.e. 15
c = n % 10; // extracting last number from 15 i.e. 5
n = n / 10; //extracting number except last number 5 i.e. 1
a = b*b*b +c*c*c + n*n*n;
if(a == m)
printf("\nThe number %d is Armstrong number",m);
else
printf("\n The number %d is not Armstrong number",m);
getch();
}
.....
.....
/* 11.     Write a program to read a four digit number and display it in
reverse order.*/
#include<stdio.h>
#include<conio.h>
main()
{
int n, m, b, c, r = 0;
printf("\nEnter any three digit number : ");
scanf("%d", &n);
m = n;
b = n % 10; //extracting last number from 153 digit number i.e. 3
n = n / 10; //extracting number except last digit 3 i.e. 15
c = n % 10; // extracting last number from 15 i.e. 5
n = n / 10; //extracting number except last number 5 i.e. 1
r = b*100+c*10+n;
printf("\nThe reverse number of %d is %03d ", m, r);//%03 is used to
padded zeros for making three digits.
getch();
}
.....
.....
/* 13.     Write a C program to check whether user input number is prime
or not?*/
#include<stdio.h>
#include<conio.h>
main()
{
int number, reverse;
printf("\nEnter any three digit number : ");
scanf("%d",&number);
a = number % 10 ;
number = number / 10;
b = number %
if(i == 0)
printf("\nThe inputed word %s is palindrome", word);
else
printf("\nThe inputed word %s is not palindrome", word);
getch();
}
.....
.....
```

```
/* 13.     Write a C program to check whether user input number is prime
or not?*/
#include<stdio.h>
#include<conio.h>
main()
{
int i, n;
printf("\nEnter any number : ");
scanf("%d",&n);
for(i=2;i<n;i++)
{
if(n%i==0)
{
printf("\nThe number %d is not prime",n);
break;
}
}
if(i==n)
printf("\nThe number %d is prime",n);
getch();
}
.....
.....
/*14. Write a C program to read two numbers sum them and display result
by using pointer.*/
#include<stdio.h>
#include<conio.h>
main()
{
int a, b, *p, *q, sum = 0;
printf("\nEnter two numbers: ");
scanf("%d %d", &a,&b);
p = &a;
q = &b;
sum = *p + *q;
printf("\nThe sum is %d",sum);
getch();
}
.....
```

```
/*1.  For any integer input through the keyboard, write a C program to
find out whether it is an odd number or even number.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int n,r;
      printf("Enter a number ");
      scanf("%d",&n);
      r=n%2;
      if(r==0)
      {
            printf("\n%d is even number",n);
      }
      else
      {
            printf("\n%d is odd number",n);
      }
      getch();
      return(0);
}
.....................................................................
.....................................
/*2.  Write a program to print the following pattern.
      1
      2     2
      3     3     3
      4     4     4     4
      5     5     5     5     5
      */
#include<stdio.h>
#include<conio.h>
main()
{
      int a,b;
      printf("the required pattern is ");
      printf("\n");
      for(a=1;a<=5;a++)
      {
            for(b=1;b<=a;b++)
            {
                  printf("%d\t",a);
            }
            printf("\n\n");
      }
      getch();
      return(0);
}
.....................................................................
.........................
/*3.  Write a program to input any three different numbers and find the
middle value.*/
#include<stdio.h>
#include<conio.h>
#include<process.h>
main()
{
      int n1,n2,n3;
      printf("Enter first  number ");
      scanf("%d",&n1);
```

```
      printf("Enter second  number ");
      scanf("%d",&n2);
      printf("Enter third  number ");
      scanf("%d",&n3);
      if(n1==n2 || n1==n3||n2==n3)
      {
            printf("\nPlease, enter the different numbers ");
            getch();
            //exit(0);
      }
      if((n1>n2 && n1<n3)||(n1<n2&&n1>n3))
      {
            printf("\n%d is middle  number",n1);
      }
      else if((n2>n1&& n2<n3)||(n2<n1&&n2>n3))
      {
            printf("\n%d is middle number",n2);
      }
      else
      {
            printf("\n%d is middle number",n3);
      }
      getch();
      return(0);
}

.....
.....
/*4.  Write a C program to print the following series of cube numbers up
to nth term. 1, 8, 27, …*/
#include<stdio.h>
#include<conio.h>
main()
{
      int n,i,c;
      printf("Enter the 'n' th term of the series ");
      scanf("%d",&n);
      printf("\nthe required series is ");
      for(i=1;i<=n;i++)
      {
            c=i*i*i;
            printf("%d\t",c);
      }
      getch();
      return(0);
}
.....
.....
/*5.  Write a C program to print multiplication table up to N.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int n,i,j,m;
      printf("Enter the last number for the series of multiplication
table  ");
      scanf("%d",&n);

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

```
            printf("\nThe multiplication table of %d is ");
            printf("\n\n");
            for(j=1;j<=10;j++)
            {
                  m=j*i;
                  printf("\n%d * %d =%d",i,j,m);
            }
      }
      getch();
      return(0);
}
```

.....
.....

```
/*6.  Write a C program to print Fibonacci series upto N terms.
[Fibonacci series: 1, 1, 2, 3, 5, 8, 13, ……]*/
#include<stdio.h>
#include<conio.h>
main()
{
      int a,b,f,n,i;
      printf("Enter the value of 'n' th term : ");
      scanf("%d",&n);
      printf("\n The fibonacci series up to %d th term is :\n\n ",n);
      a = 0;
      b = 1;
      f = 1;
      for(i=1;i<=n;i++)
      {
            printf("%d\t",f);
            f = a + b;
            a=b;
            b=f;
      }
      getch();
}
```

.....
.....

```
/*7.  Write an algorithm to input a number and print it is positive or
negative number.  Then, Convert the algorithm into C program code.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int n,r;
      printf("Enter a number ");
      scanf("%d",&n);
      if(n>0)
      {
            printf("\n%d is positive number",n);
      }
      else
      {
            printf("\n%d is negative number",n);
      }
      getch();
```

```
      return(0);
}
```

.....
.....

```
/*9.  Write an algorithm to input a number and find whether it is exactly
divisible by both 5 and 8 or not.  Convert the algorithm into C program
code.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int n,r1,r2;
      printf("Enter a number ");
      scanf("%d",&n);
      r1=n%5;
      r2=n%8;
      if(r1==0&&r2==0)
      {
            printf("\n%d is exactly divisible by both 5 and 8",n);
      }
      else if(r1==0)
      {
            printf("\n%d is exactly divisible by  5 only but not by 8",n);
      }
      else if(r2==0)
      {
            printf("\n%d is exactly divisible by  8 only but not by 5",n);
      }
      else
      {
            printf("\n%d is not  divisible by   5 and 8 both",n);
      }
      getch();
      return(0);
}
```

.....
.....

```
/*10. Write a program to input any 3 numbers and find smallest number by
using function.*/
#include<stdio.h>
#include<conio.h>
#include<process.h>
int smallest(int,int,int);
main()
{
      int n1,n2,n3,s;
      printf("Enter first  number ");
      scanf("%d",&n1);
      printf("Enter second  number ");
      scanf("%d",&n2);
      printf("Enter third  number ");
      scanf("%d",&n3);
      if(n1==n2 || n1==n3||n2==n3)
      {
            printf("\nPlease, enter the different numbers ");
```

```
            getch();
            //exit(0);
      }
      s=smallest(n1,n2,n3);
      printf("\nThe smallest number=%d",s);
      getch();
      return(0);
}
int smallest(int n1,int n2,int n3)
{
      int s;
      if(n1<n2 && n1<n3)
      {
            s=n1;
      }
      else if(n2<n1&& n2<n3)
      {
            s=n2;
      }
      else
      {
            s=n3;
      }
      return(s);
}
```

.....
.....

```
/*11. Write an algorithm and C program to read a number and find is it
exactly divisible by 3 and 5 or not?*/
#include<stdio.h>
#include<conio.h>
main()
{
      int n,r1,r2;
      printf("Enter a number ");
      scanf("%d",&n);
      r1=n%3;
      r2=n%5;
      if(r1==0&&r2==0)
      {
            printf("\n%d is exactly divisible by both 3 and 5",n);
      }
      else if(r1==0)
      {
            printf("\n%d is exactly divisible by  3 only but not by 5",n);
      }
      else if(r2==0)
      {
            printf("\n%d is exactly divisible by  5 only but not by 3",n);
      }
      else
      {
            printf("\n%d is not  divisible by   3 and  5 both",n);
      }
      getch();
      return(0);
```

```
}
```

.....
.....

```
/*12. Write a C program to print all Armstrong number form 1 to 1000*/
#include<stdio.h>
#include<conio.h>
main()
{
      int i,n,a,x,r;
      printf("\n the series of armstrong numbers upto 1000 are ");
      for(i=1;i<=1000;i++)
      {
            n=i;
            a=i;
            x=0;
            while(n>0)
            {
                  r=n%10;
                  x=x+r*r*r;
                  n=n/10;
            }
            if(x==a)
            {
                  printf("%d\t",a);
            }
      }
      getch();
}
```

.....
.....

```
/*13. Write a program to read two numbers and find the bigger number by
using function.*/
#include<stdio.h>
#include<conio.h>
int bigger(int,int);
main()
{
      int n1,n2,big;
      printf("Enter the first number ");
      scanf("%d",&n1);
      printf("Enter the second number ");
      scanf("%d",&n2);
      big=bigger(n1,n2);
      printf("\nthe bigger number=%d",big);
      getch();
      return(0);
}
int bigger(int a,int b)
{
      if(a>b)
      {
            return(a);
      }
      else
      {
```

```
            return(b);
      }
}
```

.....
.....

```
/*14. Write a program to input the cost price and selling price and
calculate the profit or loss.*/
#include<stdio.h>
#include<conio.h>
main()
{
      float cp,sp,amt;
      printf("Enter the cost price of the item ");
      scanf("%f",&cp);
      printf("Enter the sales price of the item ");
      scanf("%f",&sp);
      if(sp>cp)
      {
            amt=sp-cp;
            printf("\n The profit amount=Rs.%.2f",amt);
      }
      else if(cp>sp)
      {
            amt=cp-sp;
            printf("\n The loss amount=Rs.%.2f",amt);
      }
      else
      {
            printf("\n There is neither profit nor loss");
      }
      getch();
      return(0);
}
```

```
.....
.....
.....
/*1.  Write a C program to read any number and display 1 for January, 2
for February ……., 12 for December and other for 'wrong input'.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int a;
      printf("\nEnter a number between 1 to 12 ");
      scanf("%d",&a);
      switch(a)
      {
            case 1:
                  printf("\nJanuary");
                  break;
            case 2:
                  printf("\nFebruary");
                  break;
            case 3:
                  printf("\nMarch");
                  break;
            case 4:
                  printf("\nApril");
                  break;
            case 5:
                  printf("\nMay");
                  break;
            case 6:
                  printf("\nJune");
                  break;
            case 7:
                  printf("\nJuly");
                  break;
            case 8:
                  printf("\nAugust");
                  break;
            case 9:
                  printf("\nSemptember");
                  break;
            case 10:
                  printf("\nOctober");
                  break;
            case 11:
                  printf("\nNovember");
                  break;
            case 12:
                  printf("\nDecember");
                  break;
            default:
                  printf("\n\nyou entered invalid number. Please enter a
number between 1 to 12 ");
      }
      getch();
}
.....
.....
.....
```

```
/*2.  The marks obtained by a student in 7 different subjects are entered
through the keyboard. The student gets a division as per the following
rules:     [10]
Percentage greater or equal to 60 First Division
Percentage between 45 and 59Second Division
Percentage between 35 and 44Third Division
Percentage less than 35     Fail
Marks less than 35 in a subject will be declared as     Fail
*/

#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
      int s1,s2,s3,s4,s5,s6,s7,total;
      float percent;
      char res[10],div[30];
      printf("\nEnter the marks of first subject ");
      scanf("%d",&s1);
      printf("\nEnter the marks of second subject ");
      scanf("%d",&s2);
      printf("\nEnter the marks of third subject ");
      scanf("%d",&s3);
      printf("\nEnter the marks of fourth subject ");
      scanf("%d",&s4);
      printf("\nEnter the marks of fifth subject ");
      scanf("%d",&s5);
      printf("\nEnter the marks of sixth subject ");
      scanf("%d",&s6);
      printf("\nEnter the marks of seventh subject ");
      scanf("%d",&s7);
      //code to find total
      total=s1+s2+s3+s4+s5+s6+s7;
      //code to find percent and result
      if(s1>=35&&s2>=35&&s3>=35&&s4>=35&&s5>=35 &&s6>=35&&s7>=35)
      {
            percent=(float)total*100/700;
            strcpy(res,"Pass");
      }
      else
      {
            percent=0;
            strcpy(res,"Fail");
      }
      //code to find division
      if(percent>=60)
      {
            strcpy(div,"First Division");
      }
      else if(percent>=45)
      {
            strcpy(div,"Second Division");
      }
      else if(percent>=35)
      {
            strcpy(div,"Third Division");
      }
      else
      {
```

```
            strcpy(div,"Fail");
      }
      //code to display total, percent, result and division
      printf("\nTotal marks=%ld",total);
      printf("\n Percentage =%.2f",percent);
      printf("\n Result= %s",res);
      printf("\n Division=%s",div);
      getch();
}
```

.....
.....
.....

```
/*3.  Write a C program to print all Armstrong numbers upto 1000.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int a,n,r,x;
      printf("The Armstrong number upto 1000 are ");
      for(a=1;a<=1000;a++)
      {
            n=a;
            x=0;
            while(n>0)
            {
                  r=n%10;
                  x=x+r*r*r;
                  n=n/10;
            }
            if(x==a)
            {
                  printf("%d\t",a);
            }
      }
      getch();
}
```

.....
.....
.....

```
/*4.  Write a program to find out whether it is an odd number or even
number. (HSEB 2062,2068)*/
#include<stdio.h>
#include<conio.h>
main()
{
      int n,r;
      printf("\nEnter a number ");
      scanf("%d",&n);
      r=n%2;
      if(r==0)
      {
            printf("\n%d is even number",n);
      }
      else
      {
            printf("\n%d is odd number",n);
      }
```

```
      getch();
}

.....
.....
.....
/*5.  Write a C program to show the number in power of 2 up to N.*/
#include<stdio.h>
#include<math.h>
#include<conio.h>
main()
{
long int i, n;
long int ans;
printf("\nEnter how many terms : ");
scanf("%d",&n);
for(i=0;i<=n;i++)
{
ans = pow(2,i);
printf("\nThe %d times power of 2 is %ld",i,ans);
}
getch();
}

.....
.....
.....
/*6.  Write a program to encode user input text and decode them.*/
#include<stdio.h>
#include<conio.h>
main()
{
char msg[100], encod[100], decod[100];
int i;
puts("Enter message to encode : ");
gets(msg);
for(i=0;msg[i]!='\0';i++)
{
encod[i] = msg[i] - 10; //any value can be placed.
}
encod[i] = '\0';
printf("\nEncoded message is :\n");
puts(encod);
for(i=0;encod[i] !='\0';i++)
{
decod[i] = encod[i] + 10;//same value should be placed.
}
printf("\nDecoded message is :\n");
puts(decod);
getch();
}

.....
.....
.....
/*7.  Write a program to count the number of words in a text.*/
#include<stdio.h>
#include<conio.h>
main()
{
```

```
char msg[100];
int i, w = 0;
puts("Enter one paragraph to count words :\n\n ");
gets(msg);
for(i=0;msg[i]!='\0';i++)
{
if(msg[i] == ' ')//checks spaces for counting words.
w ++;
}
printf("\nThere are %d words",w+1);//the last word do not have space at
last hence +1.
getch();
}
```

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```
/*8.  Write a C program to find the GCD of 4 integers.*/
#include<stdio.h>
#include<conio.h>
main()
{
int i, a, b, c, d;
printf("\nEnter any four numbers : ");
scanf("%d %d %d %d", &a, &b, &c, &d);
for(i=a;i>0;i--)
{
if(a%i == 0 && b % i == 0 && c % i == 0 && d % i == 0)
{
printf("\nThe GCD of %d %d %d and %d is %d", a, b, c, d, i);
break;
}
}
getch();
}
```

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```
/*9.  Write a C program to display the sum of 'n' terms of even
numbers.*/
#include<stdio.h>
#include<conio.h>
main()
{
int i, n, evnsum=0;
printf("\nEnter how many terms : ");
scanf("%d", &n);
for(i=0;i<=n;i+=2)
{
evnsum += i;
}
printf("\nThe sum of even numbers upto %d is %d", n, evnsum );
getch();
}
```

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```
/*10. Write a C program to print first 10 terms of the following series
using FOR loop 1, 5, 9,  13   ……*/
#include<stdio.h>
#include<conio.h>
main()
{
int i, a=1;
printf("\nThe first 10 terms of the series is : ");
for(i=0;i<10;i++)
{
printf("%d, ",a);
a = a + 4;
}
getch();
}
```

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```
/*11. Write a C program to find a peculiar two digit number which is
three times the sum of its digits.*/
#include<stdio.h>
#include<conio.h>
main()
{
int x,y,z=0, i;
for(i=10;i<=99;i++)
{
 x=i/10;
 y=i%10;
 z=3*(x+y);
if(i==z)
printf("\nThe peculiar two digit number is : %d\t",i);
}
getch();
}
```

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```
/*12. Write a program to input an integer number and checks whether it is
prime or not.*/
#include<stdio.h>
#include<conio.h>
main()
{
int n,r,i;
printf("\n Enter a number  ");
scanf("%d",&n);
for(i=2;i<n;i++)
{
if(n%i==0)
{
  printf("%d is not prime",n);
  break;
}
}
if(i==n)
printf("\n%d is prime",n);
```

```
getch();
}
```

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/*13. A number of "Cats" got together and decided to kill between them
999919 mice.
Every cat killed equal number of "mice". Write a program to find number
of cats.*/
#include<stdio.h>
#include<conio.h>
main()
{
int mice=999919,cats;
printf("\nPossible combinations of\n\nCats\t\tMice\n\n ");
for(cats=2;cats<=999919;cats++)
{
 if(mice%cats==0)
 {
 printf("%d\t\t%d\n",cats, mice);
}
}
getch();
}
```

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/*14. There are some goats and ducks in a farm. There are 60 eyes and 86
foot in total.
Write a program to find number of goats and ducks in the farm.*/
#include<stdio.h>
#include<conio.h>
main()
{
 int eyes = 60, legs = 86, ducks, ships, animals;
animals = eyes /2; //every has two eyes i.e. 30 total
printf("\nThe possible combinations is: ");
for(ducks = 0; ducks<=30; ducks++)
{
for(ships =0; ships <=30;ships++)
{
if(ducks*2+ships*4 == 86 && (ducks+ships)*2 == 60)
{
printf("\nducks = %d and ships = %d having %d eyes and %d foot", ducks,
ships, (ducks+ships)*2, ducks*2+ships*4);
}
}
}
getch();
}
```

```
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/*1)  Write a program to input any 10 numbers in an array and find the
total.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[10],i,t;
      printf("\nEnter any 10 numbers ");
      for(i=0;i<10;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<10;i++)
      {
            printf("%d ",num[i]);
      }
      t=0;
      for(i=0;i<10;i++)
      {
            t=t+num[i];
      }
      printf("\n The total=%d",t);
      getch();
}
.....
.....
....
/*2)  Write a program to input the marks of any 20 students in Computer
Science and find the average marks.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int marks[20],i,t;
      float avg;
      printf("\nEnter the marks of any 20 students in computer science
");
      for(i=0;i<20;i++)
      {
            scanf("%d",&marks[i]);
      }
      printf("\n The marks are ");
      for(i=0;i<20;i++)
      {
            printf("%d ",marks[i]);
      }
      t=0;
      for(i=0;i<20;i++)
      {
            t=t+marks[i];
      }
      avg=t/20;
      printf("\n The average marks in computer science=%f",avg);
      getch();
}
```

```
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....
/*3)  Write a program to input the monthly profit of a bank in a year and
find the total and monthly average profit of the bank in that year.*/
#include<stdio.h>
#include<conio.h>
main()
{
      float profit[12],t,avg;
      int i;
      printf("\nEnter the monthly profit of a bank in a year  ");
      for(i=0;i<12;i++)
      {
            scanf("%f",&profit[i]);
      }
      printf("\n The monthly profit amount ");
      for(i=0;i<12;i++)
      {
            printf("%f ",profit[i]);
      }
      t=0;
      for(i=0;i<12;i++)
      {
            t=t+profit[i];
      }
      avg=t/12;
      printf("\n The average profit of a bank in a year=%f",avg);
      getch();
}
.....
.....
....
/*4)  Write a program to input the age of 'n' numbers of students in a
class and find the average age of the students in that class.*/
#include<stdio.h>
#include<conio.h>
#define N 1000
main()
{
      int age[N],i,t,n;
      float avg;
      printf("Enter the value of 'n' i.e. number of students ");
      scanf("%d",&n);
      printf("\nEnter the age of the students   ");
      for(i=0;i<n;i++)
      {
            scanf("%d",&age[i]);
      }
      printf("\n The age are ");
      for(i=0;i<n;i++)
      {
            printf("%d ",age[i]);
      }
      t=0;
      for(i=0;i<n;i++)
      {
            t=t+age[i];
      }
      avg=t/n;
```

```
      printf("\n The average age of students=%f",avg);
      getch();
}

.....
.....
....
/*5)  Write a program to input any 50 numbers in an array and find the
sum of positive numbers only.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[50],i,t;
      printf("\nEnter any 50 numbers  ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<50;i++)
      {
            printf("%d ",num[i]);
      }
      t=0;
      for(i=0;i<50;i++)
      {
            if(num[i]>0)
            {
                  t=t+num[i];
            }
      }
      printf("\n The sum of positive numbers=%d",t);
      getch();
}
.....
.....
....
/*6)  Write a program to input any 50 numbers in an array and find the
sum of even numbers only.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[50],i,t;
      printf("\nEnter any 50 numbers ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<50;i++)
      {
            printf("%d ",num[i]);
      }
      t=0;
      for(i=0;i<50;i++)
      {
            if(num[i]%2==0)
            {
```

```
                t=t+num[i];
            }
      }
      printf("\n The sum of even numbers only=%d",t);
      getch();
}
.....
.....
....
/*7)  Write a program to input any 50 numbers in an array and find the
sum of odd numbers only.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[50],i,t;
      printf("\nEnter any 50 numbers ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<50;i++)
      {
            printf("%d ",num[i]);
      }
      t=0;
      for(i=0;i<50;i++)
      {
            if(num[i]%2==1)
            {
                  t=t+num[i];
            }
      }
      printf("\n The sum of odd numbers only=%d",t);
      getch();
}
.....
.....
....
/*8)  Write a program to input any 10 numbers and count how many numbers
are positive.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[10],i,c;
      printf("\nEnter any 10 numbers ");
      for(i=0;i<10;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<10;i++)
      {
            printf("%d ",num[i]);
      }
      c=0;
      for(i=0;i<10;i++)
      {
```

```
            if(num[i]>0)
            {
                  c++;
            }
      }
      printf("\n The no. of positive numbers =%d",c);
      getch();
}
```

```
/*9)Write a program to input the marks of any 100 students in computer
science and count how many students got marks in the range of 70 to 90.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int marks[100],i,c;
      printf("\nEnter the marks 100 students ");
      for(i=0;i<100;i++)
      {
            scanf("%d",&marks[i]);
      }
      printf("\n The marks are ");
      for(i=0;i<100;i++)
      {
            printf("%d ",marks[i]);
      }
      c=0;
      for(i=0;i<100;i++)
      {
            if(marks[i]>=70 && marks[i]<=90)
            {
                  c++;
            }
      }
      printf("\n The no. of students who got marks in the range of 70 to
90 are=%d",c);
      getch();
}
```

```
/*10) Write a program to input the marks of any 50 students in a subject
and count how many students got above the average marks.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int marks[50],i,c,t;
      float avg;
      printf("\nEnter marks of any 50 students ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&marks[i]);
      }
      printf("\n The marks are ");
      for(i=0;i<50;i++)
      {
            printf("%d ",marks[i]);
```

```
	}
	t=0;
	for(i=0;i<50;i++)
	{
		t=t+marks[i];
	}
	avg=t/50;
	c=0;
	for(i=0;i<50;i++)
	{
		if(marks[i]>avg)
		{
			c++;
		}
	}
	printf("\n The no. of students who got above average marks =%d",c);
	getch();
}
.....
.....
....
/*11) Write a program to input marks of any 40 students in a subjects and
count how many students are passed in Distinction, First Division, Second
Division, Third Division and Failed.
Marks		Division
>=75		Distinction
>=60		First
>=45		Second
>=35		Third
Below 35	Fail
*/
#include<stdio.h>
#include<conio.h>
main()
{
	int marks[40],i,c1,c2,c3,c4,c5;
	printf("\nEnter marks of any 40 students ");
	for(i=0;i<40;i++)
	{
		scanf("%d",&marks[i]);
	}
	printf("\n The marks are ");
	for(i=0;i<40;i++)
	{
		printf("%d ",marks[i]);
	}
	c1=c2=c3=c4=c5=0;
	for(i=0;i<40;i++)
	{
		if(marks[i]>=75)
		{
			c1++;
		}
		else if(marks[i]>=60)
		{
			c2++;
		}
		else if(marks[i]>=45)
		{
			c3++;
```

```
            }
            else if(marks[i]>=35)
            {
                  c4++;
            }
            else
            {
                  c5++;
            }

      }
      printf("\n The no. of students passed in Distinction=%d",c1);
      printf("\n The no. of students passed in First Division=%d",c2);
      printf("\n The no. of students passed in Second Division=%d",c3);
      printf("\n The no. of students passed in third Division=%d",c4);
      printf("\n The no. of students who got failed=%d",c5);
      getch();
}
```

.....
.....
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```
/*12) Write a program to input any 50 numbers in an array and count how
many are even and odd numbers are in the list.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[50],i,c1,c2;
      float avg;
      printf("\nEnter  any 50 numbers ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<50;i++)
      {
            printf("%d ",num[i]);
      }
      c1=c2=0;
      for(i=0;i<50;i++)
      {
            if(num[i]%2==0)
            {
                  c1++;
            }
            else
            {
                  c2++;
            }
      }
      printf("\n The no. of even numbers =%d",c1);
      printf("\n the no. of odd numbers=%d",c2);
      getch();
}
```

.....
.....
....

```
/*13) Write a program to input any 50 numbers and count how many are
prime numbers.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[50],i,j,c,r,result=1;
      printf("\nEnter  any 50 numbers ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<50;i++)
      {
            printf("%d ",num[i]);
      }
      for(i=0;i<50;i++)
      {
            result=1;
            for(j=2;j<num[i];j++)
            {
                  r=num[i]%j;
                  if(r==0)
                  {
                        result=0;
                        break;
                  }
            }
            if(result==0)
            {
                  continue;
            }
            else
            {
                  c++;
            }
      }
      printf("\n the no. of prime numbers in the array=%d",c);
      getch();
}
.....
.....
....
/*14) Write a program to input any 50 numbers and count how many numbers
are there which are exactly divisible by 7.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[50],i,c;
      printf("\nEnter  any 50 numbers ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<50;i++)
      {
            printf("%d ",num[i]);
```

```
	}
	for(i=0;i<50;i++)
	{
		if(num[i]%7==0)
		{
			c++;
		}
	}
	printf("\n there are %d numbers which are exactly divisible by
7",c);
	getch();
}
.....
.....
....
/*15) Write a program to input any 50 numbers and count how many numbers
are square and cube numbers.*/
#include<stdio.h>
#include<conio.h>
main()
{
	int num[50],i,j,ans,result,c1,c2;
	printf("\nEnter  any 50 numbers ");
	for(i=0;i<50;i++)
	{
		scanf("%d",&num[i]);
	}
	printf("\n The numbers are ");
	for(i=0;i<50;i++)
	{
		printf("%d ",num[i]);
	}
	//code to count square numbers
	for(i=0;i<50;i++)
	{
		result=0;
		for(j=1;j<=num[i];j++)
		{
			ans=j*j;
			if(ans==num[i])
			{
				result=1;
				break;
			}
		}
		if(result==1)
		{
			c1++;
		}
	}
	//code to count dube numbers
	for(i=0;i<50;i++)
	{
		result=0;
		for(j=1;j<=num[i];j++)
		{
			ans=j*j*j;
			if(ans==num[i])
			{
				result=1;
```

```
                        break;
                  }
            }
            if(result==1)
            {
                  c2++;
            }
      }
      printf("\n the no. of square numbers in the array=%d",c1);
      printf("\n the no. of cube numbers in the array=%d",c2);
      getch();
}
.....
.....
....
/*16) Write a program to input any 50 numbers in an array and find the
biggest number.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[50],i,biggest;
      printf("\nEnter  any 50 numbers ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
      for(i=0;i<50;i++)
      {
            printf("%d ",num[i]);
      }
      //code to find biggest number
      biggest=num[0];
      for(i=0;i<50;i++)
      {
            if(num[i]>biggest)
            {
                  biggest=num[i];
            }
      }
      printf("\n the biggest number=%d",biggest);
      getch();
}
.....
.....
....
/*17) Write a program to input any 50 numbers in an array and find the
smallest number.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[50],i,smallest;
      printf("\nEnter  any 50 numbers ");
      for(i=0;i<50;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers are ");
```

```
	for(i=0;i<50;i++)
	{
		printf("%d ",num[i]);
	}
	//code to find smallest number
	smallest=num[0];
	for(i=0;i<50;i++)
	{
		if(num[i]<smallest)
		{
			smallest=num[i];
		}
	}
	printf("\n the smallest number=%d",smallest);
	getch();
}
```

.....
.....
....

```
/*18) Write a program to input the marks of any 100 students in a subject
and find the highest and lowest marks.*/
#include<stdio.h>
#include<conio.h>
main()
{
	int marks[100],i,h,l;
	printf("\nEnter  marks of 100 students ");
	for(i=0;i<100;i++)
	{
		scanf("%d",&marks[i]);
	}
	printf("\n The marks are ");
	for(i=0;i<100;i++)
	{
		printf("%d ",marks[i]);
	}
	//code to find highest marks
	h=marks[0];
	for(i=0;i<50;i++)
	{
		if(marks[i]>h)
		{
			h=marks[i];
		}
	}
	//code to find lowest marks
	l=marks[0];
	for(i=0;i<50;i++)
	{
		if(marks[i]<l)
		{
			l=marks[i];
		}
	}
	printf("\n the biggest marks=%d",h);
	printf("\n the lowest marks=%d",l);
	getch();
}
```

```
.....
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....
/*19) Write a program to input the age of any 100 students and find the
oldest age.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int age[100],i,oldage;
      printf("\nEnter the age of 100 students ");
      for(i=0;i<100;i++)
      {
            scanf("%d",&age[i]);
      }
      printf("\n The age of 100 students  ");
      for(i=0;i<100;i++)
      {
            printf("%d ",age[i]);
      }
      oldage=age[0];
      for(i=0;i<100;i++)
      {
            if(age[i]>oldage)
            {
                  oldage=age[i];
            }
      }
      printf("\n The oldest age=%d",oldage);
      getch();
}
.....
.....
....
/*20) Write a program to input any 10 numbers in an array and sort them
in descending order.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int num[10],i,j,t;
      printf("\nEnter any 10 numbers ");
      for(i=0;i<10;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers before sorting are ");
      for(i=0;i<10;i++)
      {
            printf("%d ",num[i]);
      }
      //code to sort
      for(i=0;i<10;i++)
      {
            for(j=0;j<9;j++)
            {
                  if(num[j]<num[j+1])
                  {
                        t=num[j];
                        num[j]=num[j+1];
```

```
                        num[j+1]=t;
                  }
            }
      }
      printf("\n The numbers after sorting are ");
      for(i=0;i<10;i++)
      {
            printf("%d ",num[i]);
      }
      getch();
}
```

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```
/*21) Write a program to input the marks of 'n' numbers of students and
sort them in ascending order.*/
#include<stdio.h>
#include<conio.h>
#define N 1000
main()
{
      int num[N],i,j,t,n;
      printf("Enter the value of 'n' ");
      scanf("%d",&n);
      printf("\nEnter any n numbers ");
      for(i=0;i<n;i++)
      {
            scanf("%d",&num[i]);
      }
      printf("\n The numbers before sorting are ");
      for(i=0;i<n;i++)
      {
            printf("%d ",num[i]);
      }
      //code to sort
      for(i=0;i<n;i++)
      {
            for(j=0;j<n-1;j++)
            {
                  if(num[j]>num[j+1])
                  {
                        t=num[j];
                        num[j]=num[j+1];
                        num[j+1]=t;
                  }
            }
      }
      printf("\n The numbers in ascending order are ");
      for(i=0;i<n;i++)
      {
            printf("%d ",num[i]);
      }
      getch();
}
```

.....
.....
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```
/*22) Write a program to input the height of 'n' numbers in an array and
display the height in shortest to tallest form.*/
```

```
#include<stdio.h>
#include<conio.h>
#define N 1000
main()
{
      int height[N],i,j,t,n;
      printf("Enter the value of 'n' ");
      scanf("%d",&n);
      printf("\nEnter the height of n students ");
      for(i=0;i<n;i++)
      {
            scanf("%d",&height[i]);
      }
      printf("\n The height of the students before sorting are ");
      for(i=0;i<n;i++)
      {
            printf("%d ",height[i]);
      }
      //code to sort
      for(i=0;i<n;i++)
      {
            for(j=0;j<n-1;j++)
            {
                  if(height[j]<height[j+1])
                  {
                        t=height[j];
                        height[j]=height[j+1];
                        height[j+1]=t;
                  }
            }
      }
      printf("\n The height of the students from shortest to tallest form
");
      for(i=0;i<n;i++)
      {
            printf("%d ",height[i]);
      }
      getch();
}

.....
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....
/*23) Write a program to input mobile number of any 50 students in a
class.
 Then, ask the user to input a mobile number and find it is in the
contact list or not.*/
 #include<stdio.h>
 #include<conio.h>
 #include<string.h>
 main()
 {
      char mobileno[50][10],srchmobile[10],result;
      int i;
      printf("Enter the mobile no. of any 50 students ");
      for(i=0;i<50;i++)
      {
            gets(mobileno[i]);
      }
      printf("Enter the mobile no. which you want to search ");
```

```
      gets(srchmobile);
      //code to search
      for(i=0;i<50;i++)
      {
            if(strcmpi(srchmobile,mobileno[i])==0)
            {
                  result='y';
                  break;
            }
      }
      if(result=='y')
      {
            printf("\n Yes, the mobile no. which you are searching is in
the list ");
      }
      else
      {
            printf("\n No, the mobile no. which you are searching is not
in the list ");
      }
      getch();
      return(0);
}

.....
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....
/*24) A college published the entrance result of the successful
candidates for the admission in BBA. The symbol no. of the successful
candidates are as follows:
12001      12005      12009      12104      12204      12250
12305      12555      12560      12570      12600      12601
Now, make a program to input a symbol no. and your program should find
the given symbol no. is in the list or not.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int
sn[]={12001,12005,12009,12104,12204,12250,12305,12555,12560,12570,12600,1
2601};
      int i,x;
      char found;
      printf("\n The list of successful candidates are ");
      for(i=0;i<12;i++)
      {
            printf("\n %d",sn[i]);
      }
      printf("\nEnter the symbol no. which you wnat to search ");
      scanf("%d",&x);
      //code to search
      for(i=0;i<12;i++)
      {
            if(x==sn[i])
            {
                  found=1;
                  break;
            }
      }
      if(found==1)
```

```
      {
            printf("\n Yes, the symbol no. %d is in the list of successful
students ",x);
      }
      else
      {
            printf("\n No, the symbol no. %d is not in the list of
successful students ",x);
      }
      getch();
}
.....
.....
....
/*25) Write a program to store the following matrix and display it
properly.
4     8     -2
3     4     0
*/
#include<stdio.h>
#include<conio.h>
main()
{
      int m[2][3]={{4,8,-2},{3,4,0}};
      int r,c;
      printf("The required matrix is ");
      printf("\n");
      for(r=0;r<2;r++)
      {
            for(c=0;c<3;c++)
            {
                  printf("%d\t",m[r][c]);
            }
            printf("\n");
      }
      getch();
}
.....
.....
....
/*26) Write a program to input a 2*3 matrix and display it properly.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int m[2][3],r,c;
      printf("Enter the elements of the matrix ");
      for(r=0;r<2;r++)
      {
            for(c=0;c<3;c++)
            {
                  scanf("%d",&m[r][c]);
            }
      }
      printf("The required matrix is ");
      printf("\n");
      for(r=0;r<2;r++)
      {
            for(c=0;c<3;c++)
            {
```

```
                printf("%d\t",m[r][c]);
            }
            printf("\n");
      }
      getch();
}
.....
.....
....
/*27) Write a program to input any two matrices of 3*4 size and find
their sum.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int m1[3][4],m2[3][4],m3[3][4],r,c;
      printf("Enter the elements of the first matrix ");
      for(r=0;r<3;r++)
      {
            for(c=0;c<4;c++)
            {
                  scanf("%d",&m1[r][c]);
            }
      }
      printf("Enter the elements of the second matrix ");
      for(r=0;r<3;r++)
      {
            for(c=0;c<4;c++)
            {
                  scanf("%d",&m2[r][c]);
            }
      }
      printf("The first matrix  is ");
      printf("\n");
      for(r=0;r<3;r++)
      {
            for(c=0;c<4;c++)
            {
                  printf("%d\t",m1[r][c]);
            }
            printf("\n");
      }
      printf("The second matrix  is ");
      printf("\n");
      for(r=0;r<3;r++)
      {
            for(c=0;c<4;c++)
            {
                  printf("%d\t",m2[r][c]);
            }
            printf("\n");
      }
      //code to add matrices
      for(r=0;r<3;r++)
      {
            for(c=0;c<4;c++)
            {
                  m3[r][c]=m1[r][c]+m2[r][c];
            }
      }
```

```
      printf("The sum of two matrices  is ");
      printf("\n");
      for(r=0;r<3;r++)
      {
            for(c=0;c<4;c++)
            {
                  printf("%d\t",m3[r][c]);
            }
            printf("\n");
      }
      getch();
}
.....
.....
....
/*28) Write a program to input any two matrices of 2*3 size and find
their difference.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int m1[2][3],m2[2][3],m3[2][3],r,c;
      printf("Enter the elements of the first matrix ");
      for(r=0;r<2;r++)
      {
            for(c=0;c<3;c++)
            {
                  scanf("%d",&m1[r][c]);
            }
      }
      printf("Enter the elements of the second matrix ");
      for(r=0;r<2;r++)
      {
            for(c=0;c<3;c++)
            {
                  scanf("%d",&m2[r][c]);
            }
      }
      printf("The first matrix  is ");
      printf("\n");
      for(r=0;r<2;r++)
      {
            for(c=0;c<3;c++)
            {
                  printf("%d\t",m1[r][c]);
            }
            printf("\n");
      }
      printf("The second matrix  is ");
      printf("\n");
      for(r=0;r<2;r++)
      {
            for(c=0;c<3;c++)
            {
                  printf("%d\t",m2[r][c]);
            }
            printf("\n");
      }
      //code to find difference of the  matrices
      for(r=0;r<2;r++)
```

```
	{
		for(c=0;c<3;c++)
		{
			m3[r][c]=m1[r][c]-m2[r][c];
		}
	}
	printf("The difference of two matrices  is ");
	printf("\n");
	for(r=0;r<2;r++)
	{
		for(c=0;c<3;c++)
		{
			printf("%d\t",m3[r][c]);
		}
		printf("\n");
	}
	getch();
}
.....
.....
....
/*29) Write a program to input any two matrices of 3*3 sizes and find
their product.*/
#include<stdio.h>
#include<conio.h>
main()
{
	int m1[3][3],m2[3][3],m3[3][3],r,c,i,s;
	printf("Enter the elements of the first matrix ");
	for(r=0;r<3;r++)
	{
		for(c=0;c<3;c++)
		{
			scanf("%d",&m1[r][c]);
		}
	}
	printf("Enter the elements of the second matrix ");
	for(r=0;r<3;r++)
	{
		for(c=0;c<3;c++)
		{
			scanf("%d",&m2[r][c]);
		}
	}
	printf("The first matrix  is ");
	printf("\n");
	for(r=0;r<3;r++)
	{
		for(c=0;c<3;c++)
		{
			printf("%d\t",m1[r][c]);
		}
		printf("\n");
	}
	printf("The second matrix  is ");
	printf("\n");
	for(r=0;r<3;r++)
	{
		for(c=0;c<3;c++)
		{
```

```
                printf("%d\t",m2[r][c]);
            }
            printf("\n");
        }
        //code to multply matrices
        for(r=0;r<3;r++)
        {
            for(c=0;c<3;c++)
            {
                s=0;
                for(i=0;i<3;i++)
                {
                    s=s+m1[r][i]*m2[i][c];
                }
                m3[r][c]=s;
        }
        }
        printf("The product of two matrices  is ");
        printf("\n");
        for(r=0;r<3;r++)
        {
            for(c=0;c<3;c++)
            {
                printf("%d\t",m3[r][c]);
            }
            printf("\n");
        }
        getch();
}

.....
.....
....
/*30) Write a program to display the following menu and prompt the user
to input his/her choice and do the task accordingly in
two matrices of 2*2 size.
1.    Sum of the matrices
2.    Difference of the matrices
3.    Product of the matrices
4.    Quit
*/
#include<stdio.h>
#include<conio.h>
#include<process.h>
main()
{
        int m1[2][2],m2[2][2],m3[2][2],r,c,ch,s,i;
        printf("***********MENU ***********");
        printf("\n1.Sum of the matrices");
        printf("\n2.Difference of the matrices");
        printf("\n3.Product of the matrices");
        printf("\n4.Quit");
        printf("\n\nEnter your choice ");
        scanf("%d",&ch);
        switch(ch)
        {
            case 1:
                printf("Enter the elements of the first matrix ");
                for(r=0;r<2;r++)
                {
```

```
                for(c=0;c<2;c++)
                {
                        scanf("%d",&m1[r][c]);
                }
        }
        printf("Enter the elements of the second matrix ");
        for(r=0;r<2;r++)
        {
                for(c=0;c<2;c++)
                {
                        scanf("%d",&m2[r][c]);
                }
        }
        printf("The first matrix  is ");
        printf("\n");
        for(r=0;r<2;r++)
        {
                for(c=0;c<2;c++)
                {
                        printf("%d\t",m1[r][c]);
                }
                printf("\n");
        }
        printf("The second matrix  is ");
        printf("\n");
        for(r=0;r<2;r++)
        {
                for(c=0;c<2;c++)
                {
                        printf("%d\t",m2[r][c]);
                }
                printf("\n");
        }
        //code to find sum
        for(r=0;r<2;r++)
        {
                for(c=0;c<2;c++)
                {
                        m3[r][c]=m1[r][c]+m2[r][c];
                }
        }
        printf("The sum  of two matrices  is ");
        printf("\n");
        for(r=0;r<2;r++)
        {
                for(c=0;c<2;c++)
                {
                        printf("%d\t",m3[r][c]);
                }
                printf("\n");
        }
        break;
case 2:
        printf("Enter the elements of the first matrix ");
        for(r=0;r<2;r++)
        {
                for(c=0;c<2;c++)
                {
                        scanf("%d",&m1[r][c]);
                }
```

```
            }
            printf("Enter the elements of the second matrix ");
            for(r=0;r<2;r++)
            {
                  for(c=0;c<2;c++)
                  {
                        scanf("%d",&m2[r][c]);
                  }
            }
            printf("The first matrix  is ");
            printf("\n");
            for(r=0;r<2;r++)
            {
                  for(c=0;c<2;c++)
                  {
                        printf("%d\t",m1[r][c]);
                  }
                  printf("\n");
            }
            printf("The second matrix  is ");
            printf("\n");
            for(r=0;r<2;r++)
            {
                  for(c=0;c<2;c++)
                  {
                        printf("%d\t",m2[r][c]);
                  }
                  printf("\n");
            }
            //code to find difference
            for(r=0;r<2;r++)
            {
                  for(c=0;c<2;c++)
                  {
                        m3[r][c]=m1[r][c]-m2[r][c];
                  }
            }
            printf("The difference  of two matrices  is ");
            printf("\n");
            for(r=0;r<2;r++)
            {
                  for(c=0;c<2;c++)
                  {
                        printf("%d\t",m3[r][c]);
                  }
                  printf("\n");
            }
            break;
case 3:
            printf("Enter the elements of the first matrix ");
            for(r=0;r<2;r++)
            {
                  for(c=0;c<2;c++)
                  {
                        scanf("%d",&m1[r][c]);
                  }
            }
            printf("Enter the elements of the second matrix ");
            for(r=0;r<2;r++)
            {
```

```
                        for(c=0;c<2;c++)
                        {
                              scanf("%d",&m2[r][c]);
                        }
                  }
                  printf("The first matrix  is ");
                  printf("\n");
                  for(r=0;r<2;r++)
                  {
                        for(c=0;c<2;c++)
                        {
                              printf("%d\t",m1[r][c]);
                        }
                        printf("\n");
                  }
                  printf("The second matrix  is ");
                  printf("\n");
                  for(r=0;r<2;r++)
                  {
                        for(c=0;c<2;c++)
                        {
                              printf("%d\t",m2[r][c]);
                        }
                        printf("\n");
                  }
                  //code to find product
                  for(r=0;r<2;r++)
                  {
                        for(c=0;c<2;c++)
                        {
                              s=0;
                              for(i=0;i<2;i++)
                              {
                                    s=s+m1[r][i]*m2[i][c];
                              }
                              m3[r][c]=s;
                        }
                  }
                  printf("The product  of two matrices  is ");
                  printf("\n");
                  for(r=0;r<2;r++)
                  {
                        for(c=0;c<2;c++)
                        {
                              printf("%d\t",m3[r][c]);
                        }
                        printf("\n");
                  }
                  break;
            case 4:
                  exit(0);
            default:
                  printf("\n your choice is invalid ");
                  printf("\n Please, enter your choice between 1 to 4 ");
      }
      getch();
}
```

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```
/*1.  Write a C program to calculate factorial of user inputed number by
using function.*/
#include<stdio.h>
#include<conio.h>
long int factorial(int);
main()
{
      int n;
      long int f;
      printf("\nEnter a number ");
      scanf("%d",&n);
      f=factorial(n);
      printf("\nthe factorial value=%ld",f);
      getch();
}
long int factorial(int n)
{
      int i;
      long int f;
      f=1;
      for(i=n;i>=1;i--)
      {
            f=f*i;
      }
      return(f);
}
```

.....
.....
.....

```
/*3.  Write a C program to calculate factorial upto user input number by
using function.*/
#include<stdio.h>
#include<conio.h>
long int factorial(int);
main()
{
      int n,i;
      long int f;
      printf("\nEnter a number ");
      scanf("%d",&n);
      for(i=1;i<=n;i++)
      {
            f=factorial(i);
            printf("\nthe factorial value of %d =%ld",i,f);
      }
      getch();
}
long int factorial(int n)
{
      int i;
      long int f;
      f=1;
      for(i=n;i>=1;i--)
      {
            f=f*i;
      }
      return(f);
}
```

```
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.....
/*4.  Write a C program to pass out number of elements and sort them in
ascending order by using function.*/
#include<stdio.h>
#include<conio.h>
#define N 1000
void sort(int[],int);
main()
{
      int num[N],n,i;
      printf("\nEnter the value of 'n' ");
      scanf("%d",&n);
      printf("\nEnter different number ");
      for(i=0;i<n;i++)
      {
            scanf("%d",&num[i]);
      }
      //code to call function
      sort(num,n);
      //display in ascending order
      printf("\nThe numbers in ascending order ");
      for(i=0;i<n;i++)
      {
            printf("  %d",num[i]);
      }
      getch();
}
void sort(int x[N],int n)
{
      int i,j,t;
      for(i=0;i<n;i++)
      {
            for(j=0;j<n-1;j++)
            {
                  if(x[j]>x[j+1])
                  {
                        t=x[j];
                        x[j]=x[j+1];
                        x[j+1]=t;
                  }
            }
      }
}

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/*5.  Write a C program to check user input number is even or odd by
using function.*/
#include<stdio.h>
#include<conio.h>
int evenodd(int);
main()
{
      int n,ans;
      printf("\nEnter a number ");
      scanf("%d",&n);
      ans=evenodd(n);
```

```
      if(ans==0)
      {
            printf("\n%d is even number",n);
      }
      else
      {
            printf("\n%d is odd number",n);
      }
      getch();
}
int evenodd(int n)
{
      int r;
      r=n%2;
      if(r==0)
      {
            return (0);
      }
      else
      {
            return(1);
      }
}
```

.....
.....
.....

```
/*6.  Write a C program to compound interest by using function.*/
#include<stdio.h>
#include<conio.h>
float compoundinterest(float,float,float);
main()
{
      float p,t,r,ci;
      printf("\nEnter the principle amount ");
      scanf("%f",&p);
      printf("\nEnter the time ");
      scanf("%f",&t);
      printf("\nEnter the rate of interest ");
      scanf("%f",&r);
      ci=compoundinterest(p,t,r);
      printf("\nThe compound interest=Rs. %.2f",ci);
      getch();
}
float compoundinterest(float p,float t,float r)
{
      float amt;


      return(amt);
}
```

.....
.....
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```
/*7.  Write a C program to calculate sum of even numbers by using
recursion.*/
#include<stdio.h>
#include<conio.h>
long int sumofeven(int);
```

```
main()
{
      int n;
      long int s;
      printf("\nEnter last number of the series ");
      scanf("%d",&n);
      s=sumofeven(n);
      printf("\nthe sum of even numbers upto %d  = %ld",n,s);
      getch();
}
long int sumofeven(int n)
{

      long int ans;
      int i;
      if(n%2==1)
      {
    n=n-1;
}
      if(n<=0)
      {
            ans=0;
      }
      else
      {
            ans=n+sumofeven(n-2);
      }
      return(ans);
}
```

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```
/*8.  Write a C program to read N numbers and calculate sum of even
numbers and sum of odd numbers by using function.*/
#include<stdio.h>
#include<conio.h>
#define N 500
int sumofeven(int [],int);
int sumofodd(int [],int);
main()
{
      int i,num[N],sum1,sum2,n;
      printf("Enter the value of 'n'  ");
      scanf("%d",&n);
      printf("\nEnter any %d numbers ",n);
      for(i=0;i<n;i++)
      {
            scanf("%d",&num[i]);
      }
      sum1=sumofeven(num,n);
      sum2=sumofodd(num,n);
      printf("\nThe sum of even numbers=%d",sum1);
      printf("\nthe sum of odd numbers=%d",sum2);
      getch();
}
int sumofeven(int x[N],int n)
{
      int i,s=0;
      for(i=0;i<n;i++)
```

```
	{
		if(x[i]%2==0)
		{
			s=s+x[i];
		}
	}
	return(s);
}
int sumofodd(int x[N],int n)
{
	int i,s=0;
	for(i=0;i<n;i++)
	{
		if(x[i]%2==1)
		{
			s=s+x[i];
		}
	}
	return(s);
}
```

.....
.....
.....

```
/*9.  Write a recursive C program to calculate sum of odd numbers upto
N.*/
#include<stdio.h>
#include<conio.h>
long int sumofodd(int);
main()
{
	int n;
	long int s;
	printf("\nEnter last number of the series ");
	scanf("%d",&n);
	s=sumofodd(n);
	printf("\nthe sum of even numbers upto %d  = %ld",n,s);
	getch();
}
long int sumofodd(int n)
{

	long int ans;
	int i;
	if(n%2==0)
	{
		n=n-1;
}
	if(n<=0)
	{
		ans=0;
	}
	else
	{
		ans=n+sumofodd(n-2);
	}
	return(ans);
}
```

```
.....
.....
.....
/*10. Write a C program to print series 1, 4, 9, …  upto N by using
function.*/
#include<stdio.h>
#include<conio.h>
void series(int);
main()
{
      int n;
      long int f;
      printf("\nEnter a number ");
      scanf("%d",&n);
      printf("\nThe required series is ");
      series(n);
      getch();
}
void series(int n)
{
      int i;
      for(i=1;i<=n;i=i+4)
      {
            printf("%d\t",i);
      }
}

.....
.....
.....
/*11. Write a C program to calculate HCF / GCD of 3 user inputed numbers
by using function.*/
#include<stdio.h>
#include<conio.h>
int HCF(int,int,int);
main()
{
      int n1,n2,n3,ans;
      printf("\nEnter first number ");
      scanf("%d",&n1);
      printf("\nEnter second number ");
      scanf("%d",&n2);
      printf("\nEnter third number ");
      scanf("%d",&n3);
      ans=HCF(n1,n2,n3);
      printf("\nthe HCF/GCD of given numbers=%d",ans);
      getch();
}
int HCF(int a,int b,int c)
{
      int i,r1,r2,r3,ans,smallest;
      if(a<b && a<c)
      {
            smallest=a;
      }
      else if(b<a&& b<c)
      {
            smallest=b;
      }
      else
```

```
	{
		smallest=c;
	}
	for(i=1;i<=smallest;i++)
	{
		r1=a%i;
		r2=b%i;
		r3=c%i;
		if(r1==0&&r2==0&&r3==0)
		{
			ans=i;
		}
	}
	return(ans);
}
```

.....
.....
.....

```
/*12. Write a C program to to calculate LCM of user inputed three numbers
by using function.*/
#include<stdio.h>
#include<conio.h>
int LCM(int,int,int);
main()
{
	int n1,n2,n3,ans;
	printf("\nEnter first number ");
	scanf("%d",&n1);
	printf("\nEnter second number ");
	scanf("%d",&n2);
	printf("\nEnter third number ");
	scanf("%d",&n3);
	ans=LCM(n1,n2,n3);
	printf("\nthe LCM of given numbers=%d",ans);
	getch();
}
int LCM(int a,int b,int c)
{
	int i,r1,r2,r3,ans,x,smallest;
	if(a<b && a<c)
	{
		smallest=a;
	}
	else if(b<a&& b<c)
	{
		smallest=b;
	}
	else
	{
		smallest=c;
	}
	x=a*b*c;
	for(i=x;i>=1;i--)
	{
		r1=i%a;
		r2=i%b;
		r3=i%c;
		if(r1==0&&r2==0&&r3==0)
		{
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                ans=i;
            }
      }
      return(ans);
}
```

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```
/*13. Write a C program to find area of right angle triangle whose height
and base are input by user also using function.*/
#include<stdio.h>
#include<conio.h>
float areaoftriangle(float ,float);
main()
{
      float h,b,a;
      printf("\nEnter the height of triangle ");
      scanf("%f",&h);
      printf("\nEnter the base of triangle ");
      scanf("%f",&b);
      a=areaoftriangle(h,b);
      printf("\nthe area of triangle=%f",a);
      getch();
}
float areaoftriangle(float h,float b)
{
      float a;
      a=0.5*b*h;
      return (a);
}
```

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/*14. Write a C program to find area of triangle whose 3 sides are input
by user. [Hint: area = sqrt(s*(s-a)(s-b)(s-c)),
where s = (a+b+c)/2 ]*/
#include<stdio.h>
#include<conio.h>
#include<math.h>
float areaoftriangle(float ,float,float);
main()
{
      float side1,side2,side3,a;
      printf("\nEnter the length of the first side of triangle ");
      scanf("%f",&side1);
      printf("\nEnter the length of the second side of triangle ");
      scanf("%f",&side2);
      printf("\nEnter the length of the third side of triangle ");
      scanf("%f",&side3);
      a=areaoftriangle(side1,side2,side3);
      printf("\nthe area of triangle=%f",a);
      getch();
}
float areaoftriangle(float a,float b,float c)
{
      float s,ar;
      s=(a+b+c)/2;
      ar=sqrt(s*(s-a)*(s-b)*(s-c));
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     return (ar);
}
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/*15. Write a C program to read two equation ax2+bx+c = 0 and dx2+ex+f=0
and sum them by using function.*/
#include<stdio.h>
#include<conio.h>
void equation_adder(int, int, int, int, int, int);
main()
{
int a,b,c,d,e,f;
printf("\nEnter values of a, b, c for first equation ax^2+bx+c=0 : ");
scanf("%d %d %d", &a, &b, &c);
printf("\nEnter values of d, e, f for second equation dx^2+ex+f=0 : ");
scanf("%d %d %d", &d, &e, &f);
equation_adder(a, b, c, d, e, f);
getch();
}
void equation_adder(int p, int q, int r, int s, int t, int u)
{
int x, y, z;
x = p + s;
y = q + t;
z = r + u;
printf("\nThe addition of %dx^2+%dx+%d = 0 and %dx^2+%dx+%d = 0 is
%dx^2=%dx+%d = 0",p,q,r,s,t,u,x,y,z);
}
```

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```
/*1)  Write a program to input Roll No., name and address of any 5
students in structure and display the records properly.*/
#include<stdio.h>
#include<conio.h>
main()
{
      //code to design structure
      struct student
      {
            int rn;
            char name[50];
            char adr[60];
      };
      //code to declare structure and other variable
      struct student s[5];
      int i;
      //code to input
      for(i=0;i<5;i++)
      {
            printf("\nEnter the roll no.  :  ");
            scanf("%d",&s[i].rn);
            fflush(stdin);
            printf("\nEnter the name    :     ");
            gets(s[i].name);
            printf("\nEnter the address   :        ");
            gets(s[i].adr);
      }
      //code to display
      printf("\n\nRoll No.\tName\tAddrress");
      for(i=0;i<5;i++)
      {
            printf("\n%d\t%s\t%s",s[i].rn,s[i].name,s[i].adr);
      }
      getch();
      return(0);
}

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........
/*2)  Write a C program to store roll number, name, address and phone
number of 10 students by using union and display the record, see what
happen on display.*/
#include<stdio.h>
#include<conio.h>
main()
{
      //code to design structure
      union student
      {
            int rn;
            char name[50];
            char adr[60];
            char phone[10];
      };
      //code to declare structure and other variable
      union student s[10];
      int i;
      //code to input
      for(i=0;i<5;i++)
```

```
	{
		printf("\nEnter the roll no.  :  ");
		scanf("%d",&s[i].rn);
		fflush(stdin);
		printf("\nEnter the name    :     ");
		gets(s[i].name);
		printf("\nEnter the address   :        ");
		gets(s[i].adr);
	}
	//code to display
	printf("\n\nRoll No.\tName\tAddrress");
	for(i=0;i<5;i++)
	{
		printf("\n%d\t%s\t%s",s[i].rn,s[i].name,s[i].adr);
	}
	getch();
	return(0);
}
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/*3)  Write a program to input roll number, name and age of different
students and sort the record in ascending order on the basis of age.*/
#include<stdio.h>
#include<conio.h>
#define N 500
main()
{
	//code to design structure
	struct student
	{
		int rn;
		char name[50];
		int age;
	};
	//code to declare structure and other variable
	struct student s[N],t;
	int i,j,n;
	//code to input value of n
	printf("\nEnter the value of 'n'  :   ");
	scanf("%d",&n);
	//code to input
	for(i=0;i<n;i++)
	{
		printf("\nEnter the roll no.  :  ");
		scanf("%d",&s[i].rn);
		fflush(stdin);
		printf("\nEnter the name    :     ");
		gets(s[i].name);
		printf("\nEnter the age   :       ");
		gets(s[i].age);
	}
	//code to display before sorting
	printf("\n\nRoll No.\tName\tAge");
	for(i=0;i<n;i++)
	{
		printf("\n%d\t%s\t%s",s[i].rn,s[i].name,s[i].age);
	}
	//code to sort
	for(i=0;i<n;i++)
```

```
	{
		for(j=0;j<n-1;j++)
		{
			if(s[j].age>s[j+1].age)
			{
				t=s[j];
				s[j]=s[j+1];
				s[j+1]=t;
			}
		}
	}
	//code to display after sorting
	printf("\n\nRoll No.\tName\tAge");
	for(i=0;i<n;i++)
	{
		printf("\n%d\t%s\t%s",s[i].rn,s[i].name,s[i].age);
	}

	getch();
	return(0);
}
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........
/*4)  Write a program to input names and addresses of any 50 persons and
sort the records in ascending order on the basis of names.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
	//code to design structure
	struct person
	{
		char name[50];
		char adr[60];
	};
	//code to declare structure and other variable
	struct person p[50],t;
	int i,j;
	//code to input
	for(i=0;i<50;i++)
	{
		printf("\nEnter the name    :     ");
		gets(p[i].name);
		printf("\nEnter the address   :        ");
		gets(p[i].adr);
	}
	//code to display
	printf("\n\nName\tAddrress");
	for(i=0;i<50;i++)
	{
		printf("\n%s\t%s",p[i].name,p[i].adr);
	}
		//code to sort
	for(i=0;i<50;i++)
	{
		for(j=0;j<49;j++)
		{
			if(strcmpi(p[j].name,p[j+1].name)>0)
```

```
                {
                        t=p[j];
                        p[j]=p[j+1];
                        p[j+1]=t;
                }
        }
    }
    //code to display after sorting
    printf("\n\nName\tAddrress");
    for(i=0;i<50;i++)
    {
        printf("\n%s\t%s",p[i].name,p[i].adr);
    }
    getch();
    return(0);
}
```

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```
/*5)  Write a C program to read 20 patients id, name, disease and sort
them on the basis of disease.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
    struct patient
    {
        int pid;
        char name[40];
        char disease[100];
    }p[20],t;
    int i,j;
    //input
    for(i=0;i<20;i++)
    {
        printf("\nEnter the patient id ");
        scanf("%d",&p[i].pid);
        fflush(stdin);
        printf("\nEnter the patient name ");
        gets(p[i].name);
        printf("\nEnter the patient's disease ");
        gets(p[i].disease);
    }
    //sort
    for(i=0;i<20;i++)
    {
        for(j=0;j<19;j++)
        {
            if(strcmpi(p[j].disease,p[j+1].disease)>0)
            {
                t=p[j];
                p[j]=p[j+1];
                p[j+1]=t;
            }
        }
    }
    //display
    printf("\nPatientId\tPatient Name\tDisease");
    for(i=0;i<20;i++)
```

```
	{
		printf("\t%d\t%s\t%s",p[i].pid,p[i].name,p[i].disease);
	}
	getch();
}
```

/*6) Write a program to input name of the months and monthly income and expenditure of an office during last year and
display the records properly. Also calculate the total and average income and expenditure of the office in last year. */

```
#include<stdio.h>
#include<conio.h>
main()
{
	struct office
	{
		char mname[20];
		float inc;
		float exp;
	};
	struct office off[12];
	float tinc,texp;
	int i;
	//code to input
	for(i=0;i<12;i++)
	{
		fflush(stdin);
		printf("\n Enter the name of the month ");
		gets(off[i].mname);
		printf("\nEnter the income amount of this month ");
		scanf("%f",&off[i].inc);
		printf("\nEnter the expenditure amount of this month ");
		scanf("%f",&off[i].exp);
	}
	//code to display
	printf("\nName of Month\tIncome\tExpenditure");
	for(i=0;i<12;i++)
	{
		printf("\n%d\t%s\t%s",off[i].mname,off[i].inc,off[i].exp);
	}
	//code to find total
	tinc=0;
	texp=0;
	for(i=0;i<12;i++)
	{
		tinc=tinc+off[i].inc;
		texp=texp+off[i].exp;
	}
	printf("\n\n\tTotal\tRs. %.2f\tRs. %.2f",tinc,texp);
	getch();
}
```

```c
/*7)  Write a program to input the names and age of any 100 students and
count how many students are in the age group between 15 to 20.*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct student
      {
            char name[50];
            int age;
      };
      struct student s[100];
      int i,c;
      //code to input
      for(i=0;i<100;i++)
      {
            fflush(stdin);
            printf("\nEnter the name    :     ");
            gets(s[i].name);
            printf("\nEnter the age   :       ");
            scanf("%d",s[i].age);
      }
      //code to display
      printf("\n\nRoll No.\tName\tAge");
      for(i=0;i<100;i++)
      {
            printf("\n%s\t%s",s[i].name,s[i].age);
      }
      //code to count
      c=0;
      for(i=0;i<100;i++)
      {
            if(s[i].age>=15 && s[i].age<=20)
            {
                  c++;
            }
      }
      printf("\n The total no. of students in the age group of 15 to 20
years=%d",c);
      getch();
      return(0);
}

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/*7)  Write a program to input the names and age of any 100 students and
count how many students are in the age group between 15 to 20.*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct student
      {
            char name[50];
            int age;
      };
      struct student s[100];
      int i,c;
      //code to input
```

```
      for(i=0;i<100;i++)
      {
            fflush(stdin);
            printf("\nEnter the name    :     ");
            gets(s[i].name);
            printf("\nEnter the age   :       ");
            scanf("%d",s[i].age);
      }
      //code to display
      printf("\n\nRoll No.\tName\tAge");
      for(i=0;i<100;i++)
      {
            printf("\n%s\t%s",s[i].name,s[i].age);
      }
      //code to count
      c=0;
      for(i=0;i<100;i++)
      {
            if(s[i].age>=15 && s[i].age<=20)
            {
                  c++;
            }
      }
      printf("\n The total no. of students in the age group of 15 to 20
years=%d",c);
      getch();
      return(0);
}

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/*9)  Write a program to input the name, address and age of different
persons in a village and display the records who are eligible to cast
vote. [note: the persons who are 18years or above are eligible to cast
vote.]*/
#include<stdio.h>
#include<conio.h>
#define N 500
main()
{
      struct record
      {
            char name[50];
            char adr[60];
            int age;
      };
      struct record r[N];
      int i,n;
      //code to input
      printf("\nEnter the value of 'n'  ");
      scanf("%d",&n);
      for(i=0;i<n;i++)
      {
            fflush(stdin);
            printf("\nEnter the name    :     ");
            gets(r[i].name);
            printf("\nEnter the address :     ");
            gets(r[i].adr);
            printf("\nEnter the age   :       ");
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```
            gets(r[i].age);
      }
      //code to display before sorting
      printf("\n\nThe name list of the persons who are eligible to cast
vote are ");
      printf("\n\nName\tAddress\tAge");
      for(i=0;i<n;i++)
      {
            if(r[i].age>=18)
            {
                  printf("\n%s\t%s\t%d",r[i].name,r[i].adr,r[i].age);
            }
      }
      getch();
      return(0);
}
```

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```
/*10) Write a program to input name, district and phone no. of  the
students in a college and display the students of those students who are
from 'Chitwan' district.*/
#include<stdio.h>
#include<conio.h>
#define N 500
main()
{
      struct student
      {
            char name[50];
            char district[60];
            char ph[13];
      };
      struct student s[N];
      int i,n;
      //code to input
      printf("\nEnter the value of 'n'  ");
      scanf("%d",&n);
      for(i=0;i<n;i++)
      {
            printf("\nEnter the name    :     ");
            gets(s[i].name);
            printf("\nEnter the address :     ");
            gets(s[i].district);
            printf("\nEnter the phone no.   :      ");
            gets(s[i].ph);
      }
      //code to display
      printf("\n\nThe name list of the students who are from Chitwan
district are ");
      printf("\n\nName\tDistrict\tPhone No.");
      for(i=0;i<n;i++)
      {
            if(strcmpi(s[i].district,"Chitwan")==0)
            {
                  printf("\n%s\t%s\t%s",s[i].name,s[i].district,s[i].ph);
            }
      }
      getch();
```

```
      return(0);
}

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/*11) Write a program to input roll no, name and address of different
students and display the records of those students whose first name
begins from the letter 'S'.*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct student
      {
            int rn;
            char name[50];
            char adr[60];
      };
      struct student s[5];
      int i,n;
      //code to input
      printf("Enter the value of 'n' ");
      scanf("%d",&n);
      for(i=0;i<n;i++)
      {
            printf("\nEnter the roll no.  :  ");
            scanf("%d",&s[i].rn);
            fflush(stdin);
            printf("\nEnter the name    :     ");
            gets(s[i].name);
            printf("\nEnter the address   :        ");
            gets(s[i].adr);
      }
      //code to display
      printf("\n The name list of the students whose name begin from the
letter 'S' ");
      printf("\n\nRoll No.\tName\tAddrress");
      for(i=0;i<5;i++)
      {
            if(s[i].name[0]=='S'||s[i].name[0]=='s')
            {
                  printf("\n%d\t%s\t%s",s[i].rn,s[i].name,s[i].adr);
            }
      }
      getch();
      return(0);
}
.....
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```

```c
/*1.  Write a C program to add two values by using pointer.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int x,y,sum;
      int *a,*b;
      printf("Enter the first number : ");
      scanf("%d",&x);
      printf("Enter the second number : ");
      scanf("%d",&y);
      a=&x;
      b=&y;
      sum= *a + *b;
      printf("\n the sum of the two numbers=%d", sum);
      getch();
}
```

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```c
/*2.  Write a C program to show pointer arithmentic.*/
#include<stdio.h>
#include<conio.h>
main()
{
      int a=10,*p1;
      float b=10.5,*p2;
      char c='A',*p3;

      printf("\nThe value of a=%d",a);
      printf("\n the value of b=%f",b);
      printf("\n the value of c=%c",c);
      p1=&a;
      p2=&b;
      p3=&c;
      printf("\n The memory address of p1 before increment=%u",p1);
      printf("\n The memory address of p2 before increment=%u",p2);
      printf("\n The memory address of p2 before increment=%u",p3);
      p1++;
      p2++;
      p3++;
      printf("\n************************");
      printf("\n The memory address of p1 after increment=%u",p1);
      printf("\n The memory address of p2 after increment=%u",p2);
      printf("\n The memory address of p2 after increment=%u",p3);
      getch();
      return(0);
}
```

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```c
/*3.  Write a C program to swap two values by using function.*/
#include<stdio.h>
#include<conio.h>
void swap(int *,int *);
main()
{
      int x,y;
      printf("Enter the first number : ");
      scanf("%d",&x);
      printf("Enter the second number : ");
```

```
	scanf("%d",&y);
	printf("\nThe value of x before swapping =%d ",x);
	printf("\nThe value of y before swapping=%d",y);
	//code to call function
	swap(&x,&y);
	printf("\nThe value of x after swapping =%d ",x);
	printf("\nThe value of y after swapping=%d",y);
	getch();
}
void swap(int *a,int *b)
{
	int t;
	t=*a;
	*a=*b;
	*b=t;
}
```

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```
/*4.  Write a C program to pass a value to a function and check it is
even or odd by using pointer parameter.*/
#include<stdio.h>
#include<conio.h>
char *EvenOdd(int );
main()
{
	int n;
	char *a;
	printf("Enter a number ");
	scanf("%d",&n);
	a=EvenOdd(n);
	printf("\n%s",a);
	getch();
}
char *EvenOdd(int n)
{
	int r;
	char *result;
	r=n%2;
	if(r==0)
	{
		result="It is even number";
	}
	else
	{
		result="It is odd number";
	}
	return(result);
}
```

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.....

```
/*5.  Write a C program to add three numbers by using pointer.*/
#include<stdio.h>
#include<conio.h>
main()
{
	int x,y,z,sum;
	int *a,*b,*c;
```

```
      printf("Enter the first number : ");
      scanf("%d",&x);
      printf("Enter the second number : ");
      scanf("%d",&y);
      printf("Enter the third number : ");
      scanf("%d",&z);
      a=&x;
      b=&y;
      c=&z;
      sum= *a + *b + *c;
      printf("\n the sum of the two numbers=%d", sum);
      getch();
}
```

.....
.....

```
/*1)  Write a program to input roll no, name and address of different
students and write them in a data file.*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct student
      {
            int rn;
            char name[40];
            char adr[60];
      }s;
      char next='y';
      FILE *fp;
      fp=fopen("student.dat","w");
      if(fp==NULL)
      {
            printf("\nFile creation error ");
            getch();
            exit(0);
      }

      while(next=='y'||next=='Y')
      {
            printf("\nEnter the roll no. ");
            scanf("%d",s.rn);
            fflush(stdin);
            printf("\nEnter the name  ");
            gets(s.name);
            printf("\nEnter the address ");
            gets(s.adr);
            fwrite(&s,sizeof(s),1,fp);
            printf("\n\n Do you want to write the record of next student
(Y/N)?  ");
            next=getche();
      }
      fclose(fp);
      getch();
}
.....................................................................
.....................................................................
.....................
/*2)  Write a program to read the data from the data file created in Q.N.
1 and display the records appropriately on the screen.*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct student
      {
            int rn;
            char name[40];
            char adr[60];
      }s;
      FILE *fp;
      fp=fopen("student.dat","r");
      if(fp==NULL)
      {
            printf("\nFile opening error ");
            getch();
```

```
            exit(0);
      }
      printf("\nRoll No\tName\tAddress");
      while(fread(&s,sizeof(s),1,fp)==1)
      {
            printf("\n%d\t%s\t%s",s.rn,s.name,s.adr);
      }
      fclose(fp);
      getch();
}
```

.....
.....
.....

```
/*3)  Write a program to update the record in the data file created in
Q.N.1.*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct student
      {
            int rn;
            char name[40];
            char adr[60];
      }s;
      int x;
      FILE *fp,*fp1;
      fp=fopen("std.dat","r");
      fp1=fopen("newstd.dat","w");

      if(fp==NULL||fp1==NULL)
      {
            printf("\nFile creation error ");
            getch();
            exit(0);
      }
      printf("\nEnter the roll no. of the student whose record you want
to update ");
      scanf("%d",&x);
      while(fread(&s,sizeof(s),1,fp)==1)
      {
            if(s.rn==x)
            {
                  printf("\nEnter the roll no. ");
                  scanf("%d",s.rn);
                  fflush(stdin);
                  printf("\nEnter the name  ");
                  gets(s.name);
                  printf("\nEnter the address ");
                  gets(s.adr);
                  fwrite(&s,sizeof(s),1,fp1);
            }
            else
            {
                  fwrite(&s,sizeof(s),1,fp1);
            }
      }
      fclose(fp);
```

```
	fclose(fp1);
	remove("std.dat");
	rename("newstd.dat","std.dat");
	getch();
}

.....
.....
.....
/*4)  Write a program to delete record from the data file created in
Q.N.1.*/
#include<stdio.h>
#include<conio.h>
main()
{
	struct student
	{
		int rn;
		char name[40];
		char adr[60];
	}s;
	int x;
	FILE *fp,*fp1;
	fp=fopen("std.dat","r");
	fp1=fopen("newstd.dat","w");

	if(fp==NULL||fp1==NULL)
	{
		printf("\nFile creation error ");
		getch();
		exit(0);
	}
	printf("\nEnter the roll no. of the student whose record you want
to delete ");
	scanf("%d",&x);
	while(fread(&s,sizeof(s),1,fp)==1)
	{
		if(s.rn==x)
		{
			continue;
		}
		else
		{
			fwrite(&s,sizeof(s),1,fp1);
		}
	}
	fclose(fp);
	fclose(fp1);
	remove("std.dat");
	rename("newstd.dat","std.dat");
	getch();
}


.....
.....
.....
/*5)  Write a program to enter employee code, name, post and monthly
salary of different employees and write then in a data file.*/
#include<stdio.h>
```

```
#include<conio.h>
main()
{
      struct employee
      {
            int ecode;
            char name[40];
            char post[30];
            int msal;
      }e;
      char next='y';
      FILE *fp;
      fp=fopen("emp.dat","w");
      if(fp==NULL)
      {
            printf("\nFile creation error ");
            getch();
            exit(0);
      }

      while(next=='y'||next=='Y')
      {
            printf("\nEnter the employee code ");
            scanf("%d",e.ecode);
            fflush(stdin);
            printf("\nEnter the name  ");
            gets(e.name);
            printf("\nEnter the post ");
            gets(e.post);
            printf("\nEnter the monthly salary ");
            scanf("%d",e.msal);
            fwrite(&e,sizeof(e),1,fp);
            printf("\n\n Do you want to write the record of next student
(Y/N)?  ");
            next=getche();
      }
      fclose(fp);
      getch();
}


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/*6)  Write a program to display records of the employees stored in
Q.N.5.*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct employee
      {
            int ecode;
            char name[40];
            char post[30];
            int msal;
      }e;
      FILE *fp;
      fp=fopen("emp.dat","r");
      if(fp==NULL)
```

```
	{
		printf("\nFile opening error ");
		getch();
		exit(0);
	}
	printf("\nEmployeeCode\tName\tPost\tMonthly Salary");
	while(fread(&e,sizeof(e),1,fp)==1)
	{
		printf("\n%d\t\t%s\t%s\t%d",e.ecode,e.name,e.post,e.msal);
	}
	fclose(fp);
	getch();
}

.....
.....
.....
/*7)  Write a program to update the records of the employees stored in
Q.N.5.*/
#include<stdio.h>
#include<conio.h>
main()
{
	struct employee
	{
		int ecode;
		char name[40];
		char post[30];
		int msal;
	}e;
	int x;
	FILE *fp,*fp1;
	fp=fopen("emp.dat","r");
	fp1=fopen("newfp1.dat","w");
	if(fp==NULL)
	{
		printf("\nFile creation error ");
		getch();
		exit(0);
	}
	printf("\nEnter the employee code whose record you want to update
");
	scanf("%d",&x);
	while(fread(&e,sizeof(e),1,fp)==1)
	{
		if(x==e.ecode)
		{
			printf("\nEnter the employee code ");
			scanf("%d",e.ecode);
			fflush(stdin);
			printf("\nEnter the name  ");
			gets(e.name);
			printf("\nEnter the post ");
			gets(e.post);
			printf("\nEnter the monthly salary ");
			scanf("%d",e.msal);
			fwrite(&e,sizeof(e),1,fp1);
		}
		else
		{
```

```
                fwrite(&e,sizeof(e),1,fp1);
            }
      }
      fclose(fp);
      fclose(fp1);
      remove("emp.dat");
      rename("newemp.dat","emp.dat");
      getch();
}
```

.....
.....
.....

```
/*8)  Write a program to delete the record of the employee stored in
Q.N.5.*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct employee
      {
            int ecode;
            char name[40];
            char post[30];
            int msal;
      }e;
      int x;
      FILE *fp,*fp1;
      fp=fopen("emp.dat","r");
      fp1=fopen("newfp1.dat","w");
      if(fp==NULL)
      {
            printf("\nFile creation error ");
            getch();
            exit(0);
      }
      printf("\nEnter the employee code whose record you want to delete
");
      scanf("%d",&x);
      while(fread(&e,sizeof(e),1,fp)==1)
      {
            if(x==e.ecode)
            {
                  continue;
            }
            else
            {
                  fwrite(&e,sizeof(e),1,fp1);
            }
      }
      fclose(fp);
      fclose(fp1);
      remove("emp.dat");
      rename("newemp.dat","emp.dat");
      getch();
}
```

.....
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```
/*9)  Write a program to display the following menu and ask the user to
enter his/her choice and do the task accordingly.
a.    Append Record
b.    Read Record
c.    Update Record
d.    Delete Record
e.    Quit
*/
#include<stdio.h>
#include<conio.h>
main()
{
      struct student
      {
            int rn;
            char name[40];
            char adr[60];
      }s;
      int ch,x;
      char next='y';
      FILE *fp,*fp1;
      //to print menu
      printf("\n**********MENU**************");
      printf("\n1. Append Record");
      printf("\n2. Read Record");
      printf("\n3. Update Record");
      printf("\n4. Delete Record");
      printf("\n5. Quit");
      printf("\n\nEnter your choice ");
      scanf("%d",&ch);
      switch(ch)
      {
            case 1:
                  fp=fopen("student.dat","a");
                  if(fp==NULL)
                  {
                        printf("\nFile creation error ");
                        getch();
                        exit(0);
                  }
                  while(next=='y'||next=='Y')
                  {
                        printf("\nEnter the roll no. ");
                        scanf("%d",s.rn);
                        fflush(stdin);
                        printf("\nEnter the name  ");
                        gets(s.name);
                        printf("\nEnter the address ");
                        gets(s.adr);
                        fwrite(&s,sizeof(s),1,fp);
                        printf("\n\n Do you want to write the record of
next student (Y/N)?  ");
                        next=getche();
                  }
                  fclose(fp);
                  break;
            case 2:
                  fp=fopen("student.dat","r");
                  if(fp==NULL)
                  {
```

```
                        printf("\nFile opening error ");
                        getch();
                        exit(0);
                  }
                  printf("\nRoll No\tName\tAddress");
                  while(fread(&s,sizeof(s),1,fp)==1)
                  {
                        printf("\n%d\t%s\t%s",s.rn,s.name,s.adr);
                  }
                  fclose(fp);
                  break;
            case 3:
                  fp=fopen("std.dat","r");
                  fp1=fopen("newstd.dat","w");
                  if(fp==NULL||fp1==NULL)
                  {
                        printf("\nFile creation error ");
                        getch();
                        exit(0);
                  }
                  printf("\nEnter the roll no. of the student whose record
you want to update ");
                  scanf("%d",&x);
                  while(fread(&s,sizeof(s),1,fp)==1)
                  {
                        if(s.rn==x)
                        {
                              printf("\nEnter the roll no. ");
                              scanf("%d",s.rn);
                              fflush(stdin);
                              printf("\nEnter the name  ");
                              gets(s.name);
                              printf("\nEnter the address ");
                              gets(s.adr);
                              fwrite(&s,sizeof(s),1,fp1);
                        }
                        else
                        {
                              fwrite(&s,sizeof(s),1,fp1);
                        }
                  }
                  fclose(fp);
                  fclose(fp1);
                  remove("std.dat");
                  rename("newstd.dat","std.dat");
                  break;
            case 4:
                  fp=fopen("std.dat","r");
                  fp1=fopen("newstd.dat","w");
                  if(fp==NULL||fp1==NULL)
                  {
                        printf("\nFile creation error ");
                        getch();
                        exit(0);
                  }
                  printf("\nEnter the roll no. of the student whose record
you want to delete ");
                  scanf("%d",&x);
                  while(fread(&s,sizeof(s),1,fp)==1)
                  {
```

```
                        if(s.rn==x)
                        {
                              continue;
                        }
                        else
                        {
                              fwrite(&s,sizeof(s),1,fp1);
                        }
                  }
                  fclose(fp);
                  fclose(fp1);
                  remove("std.dat");
                  rename("newstd.dat","std.dat");
                  break;
            case 5:
                  exit(0);
            default:
                  printf("\nYou entered invalid number for your choice ");
                  printf("\nPlease, enter your choice between 1 to 5 ");
      }
      getch();
}
```

.....
.....
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```
/*1.  Write a program to read a line of text and to convert it into
uppercase. */
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
      char text[200];
      printf("Enter a line of text ");
      gets(text);
      strupr(text);
      printf("The text in Upper case : %s",text);
      getch();
}
```

```
/*2.  Write a program to read a line of text and convert into upper case
without using string/library function.*/
#include<stdio.h>
#include<conio.h>
main()
{
      char text[200];
      int i;
      printf("Enter a line of text ");
      gets(text);
      for(i=0;text[i]!='\0';i++)
      {
            if(text[i]>='a' && text[i]<='z')
            {
                  text[i]=text[i]-32;
            }
      }
      printf("The text in Upper case : %s",text);
      getch();
}
```

```
/*3.  Write a C program to read a line of text and change it to
lowercase.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
      char text[200];
      printf("Enter a line of text ");
      gets(text);
      strlwr(text);
      printf("The text in lower case : %s",text);
      getch();
}
```

```
/*4.  Write a C program to read a line of text and change it to lowercase
without using string/library function.*/
#include<stdio.h>
#include<conio.h>
main()
```

```
{
      char text[200];
      int i;
      printf("Enter a line of text ");
      gets(text);
      for(i=0;text[i]!='\0';i++)
      {
            if(text[i]>='A' && text[i]<='Z')
            {
                  text[i]=text[i]+32;
            }
      }
      printf("The text in lower case : %s",text);
      getch();
}
```

```
/*5.  Write a program to read a line of text and count the length of the
text including blank space and punctuation marks using library
function.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
      char text[200];
      int len;
      printf("Enter a line of text ");
      gets(text);
      len=strlen(text);
      printf("The length of the text= %d",len);
      getch();
}
```

```
/*6.   Write a program to read a line of text and count the length of the
text including blank space and punctuation marks without using library
function.*/
#include<stdio.h>
#include<conio.h>
main()
{
      char text[200];
      int i,len;
      printf("Enter a line of text ");
      gets(text);
      len=0;
      for(i=0;text[i]!='\0';i++)
      {
            len++;

      }
      printf("The length of the text= %d",len);
      getch();
}
```

```
/*7.  Write a program to read a line of text and count only the English
alphabets.
```

```
 [Note: your program should not count the blank space and any punctuation
marsk.]*/
 #include<stdio.h>
#include<conio.h>
main()
{
      char text[200];
      int i,len;
      printf("Enter a line of text ");
      gets(text);
      len=0;
      for(i=0;text[i]!='\0';i++)
      {
            if((text[i]>='A'&& text[i]<='Z')||(text[i]>='a'&&
text[i]<='z'))
            {
                  len++;
            }
      }
      printf("The no. of english alphabets = %d",len);
      getch();
}

.....................................................................
.....................................................................
/*8.  Write a program to read a line of text and count how many times the
letter ‘A’ or ‘a’ has occurred.*/
 #include<stdio.h>
#include<conio.h>
main()
{
      char text[200];
      int i,len;
      printf("Enter a line of text ");
      gets(text);
      len=0;
      for(i=0;text[i]!='\0';i++)
      {
            if(text[i]=='A'|| text[i]=='a')
            {
                  len++;
            }
      }
      printf("The no. of 'a' or 'A' in the given text = %d",len);
      getch();
}

.....................................................................
.....................................................................
/*9.  Write a program to read a line of text and count how many English
vowels alphabets are there.*/
 #include<stdio.h>
#include<conio.h>
main()
{
      char text[200];
      int i,len;
      printf("Enter a line of text ");
      gets(text);
      len=0;
```

```
      for(i=0;text[i]!='\0';i++)
      {
            if(text[i]=='A'|| text[i]=='a'||text[i]=='E'||
text[i]=='e'||text[i]=='I'|| text[i]=='i'||text[i]=='O'||
text[i]=='o'||text[i]=='U'|| text[i]=='u')
            {
                  len++;
            }
      }
      printf("The no. of vowels alphabets = %d",len);
      getch();
}
```

.....
.....

```
/*10. Write a program to read a line of text and count how many English
vowels and consonants alphabets are there.*/
 #include<stdio.h>
#include<conio.h>
main()
{
      char text[200];
      int i,totalphabets, totvowel,totconsonant;
      printf("Enter a line of text ");
      gets(text);
      totalphabets=0;
      for(i=0;text[i]!='\0';i++)
      {
            if((text[i]>='A'&& text[i]<='Z')||(text[i]>='a'&&
text[i]<='z'))
            {
                  totalphabets++;
            }
      }
 totvowel=0;
      for(i=0;text[i]!='\0';i++)
      {
            if(text[i]=='A'|| text[i]=='a'||text[i]=='E'||
text[i]=='e'||text[i]=='I'|| text[i]=='i'||text[i]=='O'||
text[i]=='o'||text[i]=='U'|| text[i]=='u')
            {
                  totvowel++;
            }
      }
      totconsonant=totalphabets-totvowel;
      printf("\n The total no. of vowels alphabets in the given
text=%d",totvowel);
      printf("\n the total no. of consonants alphabets in the given
text=%d",totconsonant);
      getch();
}
```

.....
.....

```
/*11. Write a program to input names of 'n' number of students into 2
dimensional array and sort them in alphabetical order. */
#include<stdio.h>
#include<conio.h>
#include<string.h>
#define N 500
```

```
main()
{
      char name[N][50], t[50];
      int i,j,n;
      printf("Enter the value of 'n'  ");
      scanf("%d",&n);
      fflush(stdin);
      printf("\nEnter the name of the %d students",n);
      for(i=0;i<n;i++)
      {
            gets(name[i]);
      }
      //code to sort
      for(i=0;i<n;i++)
      {
            for(j=0;j<n-1;j++)
            {
                  if(strcmpi(name[j],name[j+1])>0)
                  {
                        strcpy(t,name[j]);
                        strcpy(name[j],name[j+1]);
                        strcpy(name[j+1],t);
                  }
            }
      }
      //code to display after sorting
      printf("\n the name of student in ascending order ");
      for(i=0;i<n;i++)
      {
            printf("\n%s",name[i]);
      }
      getch();
}

.....
.....
/*12. Write a program to input a word and reverse it by using library
function.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
      char text[200];
      printf("Enter a line of text ");
      gets(text);
      strrev(text);
      printf("The text in reverse order : %s",text);
      getch();
}
.....
.....
/*13. Write a C program to check user input word is palindrome or not?
[Palindrome words are same by reading from bother directions. For
example: madam, civic, level, mom, noon, racecar, refer, rotator, rotor
etc.]*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
```

```
{
      char text1[100],text2[100];
      printf("Enter a word ");
      gets(text1);
      strcpy(text2,text1);
      strrev(text1);
      if(strcmpi(text1,text2)==0)
      {
            printf("Yes, the word is palindrome ");
      }
      else
      {
            printf("No, the word is not palindrome ");
      }
      getch();
}

.....
.....
/*14. Write a program to read a word and reverse it without using
string/library function.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
      char text1[200],text2[200];
      int i,j;
      printf("Enter a line of text ");
      gets(text1);
      j=0;
      for(i=strlen(text1)-1;i>=0;i--)
      {
            text2[j]=text1[i];
            j++;
      }
      text2[j]='\0';
      printf("The text in reverse order : %s",text2);
      getch();
}

.....
.....
/*15. Write a program to input any two words and find they are same words
or not.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
      char text1[100],text2[100];
      printf("Enter first word ");
      gets(text1);
      printf("Enter second word ");
      gets(text2);
      if(strcmpi(text1,text2)==0)
      {
            printf("Yes, the words are similar ");
      }
      else
```

```
      {
            printf("No, the words are not similar ");
      }
      getch();
}

.....
.....
/*16. Write a program to input any two words and find they are same words
or not without using string function.*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
main()
{
      char text1[100],text2[100];
      int i;
      char same;
      printf("Enter first word ");
      gets(text1);
      printf("Enter second word ");
      gets(text2);

      if(strlen(text1)==strlen(text2))
      {
            for(i=0;i<strlen(text1);i++)
            {
                  if(text1[i]==text2[i])
                  {
                        continue;
                  }
                  else
                  {
                        same='n';
                        break;
                  }
            }
            if(same=='n')
            {
                  printf("\nNo, the two words are not similar ");
            }
            else
            {
                  printf("\Yes, the words are similar ");
            }

      }
      else
      {
            printf("No, the words are not similar ");
      }
      getch();
}
.....
.....
/*17. Write a C program to  print all ASCII values of all the characters
and display both.*/
#include<stdio.h>
#include<conio.h>
main()
```

```
{
      int i;
      printf("\nASCII value\tCharacter");
      for(i=0;i<=255;i++)
      {
            printf("\n%d\t%c",i,i);
      }
      getch();
}
```

.....
.....

```
/*Write a C program to add two times in hours, minutes and seconds. */
#include<stdio.h>
#include<conio.h>
main()
{
int h1, m1, s1, h2, m2, s2, h, m, s;
printf("\nEnter first time in hour minute and second : ");
scanf("%d %d %d",&h1,&m1,&s1);
printf("\nEnter second time in hour minute and second : ");
scanf("%d %d %d",&h2,&m2,&s2);
s = (s1 + s2)%60;
m = ((m1 + m2) + (s1 + s2)/60)%60;
h = h1 + h2 + ((m1 + m2)+ (s1 + s2)/60)/60;
printf("\nThe sum of %d hr, %d min, %d sec and %d hr, %d min, %d sec is
%d hour, %d minutes and %d seconds",h1, m1, s1, h2, m2, s2, h, m, s);
getch();
}
```

.....
.....

```
/*Write a C program to demonstrate the use of bitwise AND , OR, NOT, XOR
and shift operators. */
#include<stdio.h>
#include<conio.h>
main()
{
int i=5,j=11;
printf("\nBitwise AND between %d and %d is %d",i,j,i&j);
printf("\nBitwise OR between %d and %d is %d", i,j, i|j);
printf("\nBitwise NOT of %d is %d and Bitwise not of %d is %d", i,
~i,j,~j);
printf("\nBitwise right shift of %d twise is %d",i,i>>2);
printf("\nBitwise left shift of %d thrice is %d",j,j<<3);
getch();
}
```

.....
.....

```
/*Wrie a recursive C program to calculate factorial user inputed number
*/
#include<stdio.h>
#include<conio.h>
int fact(int);
main()
{
int f, n;
printf("\nEnter any number: ");
scanf("%d",&n);
```

```
f=fact(n);
printf("\nThe factorial of %d is %d",n,f);
getch();
}
fact(int p)
{
if(p==0)
return(1);
else if(p==1)
return(1);
else
return(p*fact(p-1));
}

.....
.....
/* Bacteria are known to multiply very rapidly.
If a certain container contains just one bacterium on the first day
 and there are twice as many on the next day. In this manner the number
  of bacteria in the container doubles itself everyday. Assuming that the
  container would be full on the 10th day with 13,312 bacteria,
  find the number of bacteria that was initially in the container on the
first day.
*/
#include<stdio.h>
#include<conio.h>
main()
{
 int x=13312,y;
 y=x/pow(2, 9);
 printf("\nThe total number of bacteria at first day is %d",y);
 getch();
}

.....
.....
/*2) Bacteria are known to multiply very rapidly.
If a certain container contains just one bacterium on
the first day and there are twice as many on the next day.
In this manner the number of bacteria in the container doubles itself
everyday.
Assuming that the container would be full on the 10th day with 13,312
bacteria,
 find the number of bacteria that was initially in the container on the
first day.
*/
#include<stdio.h>
#include<conio.h>
main()
{
 int x=13312,y;
 y=x/pow(2, 9);
 printf("\nThe total number of bacteria at first day is %d",y);
 getch();
}

.....
.....
/* 5) Consider the following number 45*45=2025; 20+25=45.
```

```
Write a program to generate number between 10 and 99 that satisfies the
above property.
*/
#include<stdio.h>
#include<conio.h>
main()
{
int i, e,x,y,c;
printf("\nThe following two digits numbers satisfies the given
condition");
for(i=10;i<=99;i++)
{
 e=i*i;
 x=e/100;
 y=e%100;
 c=x+y;
if(i==c)
printf("\n%d is one value because %d X %d = %d and %d + %02d = %d",i, i,
i, i*i, x, y, x+y);
}
getch();
}

.....................................................................
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/*6) Rita has a money pouch containing Rs.700.
There are equal number of 25 paise coins, 50 paise and one rupee coins.
Write a C program to find how many of each are there?
*/
#include<stdio.h>
#include<conio.h>
main()
{
int r=700,tot;
float c=.50+.25+1;
tot=r/c;
printf("1 RS coins are %d, 50 Paisa coins are %d and 25 Paisa coins are
%d and total amount is %.0f",tot, tot, tot,tot*c);
getch();
}

.....................................................................
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/*10) Write a C program to find a two digit number,
the second digit of which is smaller than its first digit by 4,
and if the number was divided by the digit's sum, the quotient would be
7.
*/
#include<stdio.h>
#include<conio.h>
main()
{
int i, s,f;
for(i=10;i<=99;i++)
{
s=i%10;
f=i/10;
if(((s-4)==f)&&(i%(f+s))==7)
printf("\nthe first numbe of %d is %d which smaller than %d by 4 and
remainder after dividing by %d is 7",i, f, s, f+s);
```

```
}
getch();
}

.....................................................................
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/*There are some goats and ducks in a farm. There are 60 eyes and 86 foot
in total. Write a program to find number of goats and ducks in the
farm.*/
#include<stdio.h>
#include<conio.h>
main()
{
 int eyes = 60, legs = 86, ducks, ships, animals;
animals = eyes /2; //every has two eyes i.e. 30 total
for(ducks = 0; ducks<=30; ducks++)
{
for(ships =0; ships <=30;ships++)
{
if((ducks*2+ships*4 == 86)&&(ducks+ships)*2 == 60)
{
printf("\nThe number of ducks = %d and ships = %d having (%d + %d) * 2 =
%d eyes and %d * 2 + %d * 4 = %d foots", ducks, ships, ducks, ships,
(ducks+ships)*2,ducks, ships, ducks*2+ships*4);
}
}
}
getch();
}

.....................................................................
.....................................................................
/*Write a C program to check user inputed number is palindrome or not.*/
#include<stdio.h>
#include<conio.h>
main()
{
int a,b,c,d;
printf("\nEnter any number to check palindrome or not : ");
scanf("%d",&a);
b=a;
d = 0;
while(a>0)
{
c=a%10;
d = d*10+c;
a = a/10;
}
if(d==b)
printf("\nThe number %d is palindrome",b);
else
printf("\nThe number %d is not palindrome", b);
getch();
}

.....................................................................
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/*What is recurssion? Explain with example*/
#include<stdio.h>
#include<conio.h>
```

```
int i = 0;
main()
{
printf("\nHi Class 12!!!");
if(i<10)
{
i++;
main();
}
getch();
}
```

.....
.....

```
/*Write a C program to calculate Simple Interest. */
#include<stdio.h>
#include<conio.h>
main()
{
float p, t, r, si;
printf("\nEnter P, T and R: ");
scanf("%f %f %f", &p, &t, &r);
si = p*t*r/100;
printf("\nThe simple interest is %.2f",si);
getch();
}
```

.....
.....

```
/*Write a C program to Swap (Exchange) two values of the variables */
#include<stdio.h>
#include<conio.h>
main()
{
int a, b, t;
printf("\nEnter two values: ");
scanf("%d %d", &a, &b);
printf("\nBefore swapping values of a = %d and b = %d", a,b);
t=a; //if a = 10 then a = 10, t=10.
a=b; //if b = 20 then a = 20, b=20.
b=t; // here b=10, t=10.
printf("\nAfter swapping values of a = %d and b = %d",a,b);
getch();
}
```

.....
.....

```
/*Write a C program to Swap (Exchange) two values of the variables
without using third variables */
#include<stdio.h>
#include<conio.h>
main()
{
int a,b;
printf("\nEnter two numbers : ");
scanf("%d %d", &a, &b);
printf("\nThe value before swapping is a = %d and b = %d", a,b);
a = a+b; //if a = 10 and b = 20 then a = 30 at last.
b = a-b; //here b = 30-20 = 10.
a = a-b; //here a = 30-10 = 20.
```

```
printf("\nThe value of a = %d and b = %d", a,b);
getch();
}
```

.....
.....

```
/*Write a C program to Swap (Exchange) two values of the variables
without using third variables */
#include<stdio.h>
#include<conio.h>
main()
{
int a,b;
printf("\nEnter two values: ");
scanf("%d %d",&a,&b);
printf("\nBefore swapping a = %d and b = %d",a,b);
a = a^b;
b = b^a;
a = a^b;
printf("\nAfter swapping a = %d and b = %d",a,b);
getch();
}
```

.....
.....

```
/*Calculate the factorial of number recursively.From that calculate the
value of
cos(x)=1-(x2/2!)+(x4/4!)-(....(xn/n!)*/
#include<stdio.h>
#include<conio.h>
#include<math.h>
int rec(int);
main()
{
 int x,n,i,j;
 float sum=0,z,s;
 printf("Enter the value of 'n':");
 scanf("%d",&n);
 printf("Enter the value of x:");
 scanf("%d",&x);
 for(i=1;2*(i-1)<=n;i++)
 {
 z=pow(x,2*(i-1)) * pow(-1,(i-1));
 sum=sum+(float)(z/rec(2*(i-1)));
 }
 printf("\n cos(x)=%f",sum);
getch();
}
int rec(j)
 {
 if(j==0)
 return 1;
 else
 return j* rec(j-1);
 }
.....................................................................
.....................................................................
/*There are some goats and ducks in a farm. There are 60 eyes and 86 foot
in total. Write a program to find number of goats and ducks in the
farm.*/
#include<stdio.h>
#include<conio.h>
main()
{
 int eyes = 60, legs = 86, ducks, ships, animals;
animals = eyes /2; //every has two eyes i.e. 30 total
for(ducks = 0; ducks<=30; ducks++)
{
for(ships =0; ships <=30;ships++)
{
if(ducks*2+ships*4 == 86)
{
printf("\nducks = %d and ships = %d", ducks, ships);
}
}
}
getch();
}

.....................................................................
.....................................................................
/* Write a program to find Fibonacci series */

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

```
main()
{
int n, i, a=1, b=0, f=1;
printf("\nHow many terms: ");
scanf("%d",&n);
for(i=1;i<n;i++)
{
printf("\t%d",f);
a=b;
b=f;
f=a+b;
}
getch();
}
```

.....
.....

\\ Reverse number

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,r,n,x, c=0;
printf("Enter a number ");
scanf("%d",&n);
if(n>0)
{
x=0;
while(n>0)
{
r=n%10;
x=x*10+r;
n=n/10;
c++;
}
printf("\n the reverse number is =%0*d",c,x);
}
else
{
printf("\nIt is not a positive number");
}
getch();
}
```

.....
.....

\\ Reverse with padded

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,r,n,x, c=0;
printf("Enter a number ");
scanf("%d",&n);
if(n>0)
{
x=0;
while(n>0)
```

```
{
r=n%10;
x=x*10+r;
n=n/10;
c++;
}
printf("\n the reverse number is =%0*d",c,x);
}
else
{
printf("\nIt is not a positive number");
}
getch();
}
```

.....
.....

\\ Two digits

```
#include<stdio.h>
#include<conio.h>
main()
{
int i, s,f;
for(i=10;i<=99;i++)
{
s=i%10;
f=i/10;
if(((s-4)==f)&&(i%(f+s))==7)
printf("\n%d",i);
}
getch();
}
```

.....
.....

\\ Type casting

```
#include<stdio.h>
#include<conio.h>
main()
{
int p,t,r,i;
printf("\nEnter principal, time and rate:");
scanf("%d %d %d",&p, &t, &r);
i=p*t*r/100.00;
printf("%d",i);
getch();
}
```

.....
.....