#include<iostream.h>

#include<conio.h>

#include<stdio.h>

int length (char a[])

{

 int len=0;

 for(int i=0;a[i]!='\0';i++)

 {

 len++;

 }

 return len;

}

void read(char a[])

{

 puts("Enter the string") ;

 gets(a);

}

void display(char a[])

{

 puts(a);

}

void main()

{

 char a[50];

 read(a);

 display(a);

 int len;

 len=length(a);

 cout<<"The length of the string"<<len;

}



#include<iostream.h>

#include<string.h>

#include<stdio.h>

void revdisplay(char a[])

{

 for(int i=strlen(a)-1;i>=0;i--)

 cout<<a[i];

}

void reverse(char a[])

{

 for(int i=0,j=strlen(a)-1;i<strlen(a)/2;i++,j--)

 {

 char temp;

 temp=a[i];

 a[i]=a[j];

 a[j]=temp;

 }

}

void main()

{

 char a[50];

 puts("Enter the string");

 gets(a);

 revdisplay(a);

 puts("\nReversed string is:");

 puts(a);

 reverse(a);

 puts("\nReversed string is:");

 puts(a);

}



//PROGRAM TO INPUT AND DISPLAY OPERATION ON COMPLEX NUMBER

#include<iostream.h>

#include<stdio.h>

struct complex{int real; int img;};

void input(complex &s);

void add(complex,complex);

void subtract(complex,complex);

void multiply(complex,complex);

void main()

{complex c1,c2; int ch;

cout<<"1st complex no \t";input(c1);

cout<<"2nd complex no \t" ;input(c2);

cout<<"press 1-add, 2-subtract, 3-multiply ";

cin>>ch;

switch(ch)

{case 1:add(c1,c2);break;

case 2:subtract(c1,c1);break;

case 3:multiply(c1,c2);break;

}}

void input(complex &c)

{cout<<"real part ";

cin>>c.real;

cout<<"imaginary ";

cin>>c.img;}

void add(complex x,complex y)

{complex cx;

 cx.real=x.real+y.real;

 cx.img=x.img+y.img;

 cout<<"complex number is "<<cx.real<<"+"<<cx.img ; }

void subtract(complex x,complex y)

{complex cx;

 cx.real=x.real-y.real;

 cx.img=x.img-y.img;

 cout<<"complex number is "<<cx.real<<"+"<<cx.img; }

void multiply(complex x,complex y)

{complex cx;

cx.real=(x.real\*y.real)-(x.img\*y.img);

cx.img=(x.real\*y.img)+(x.img\*y.real);

 cout<<"complex number is "<<cx.real<<"+"<<cx.img;}

OUTPUT:

1st complex no real part 2 imaginary 3

2nd complex no real part 3 imaginary 4

press 1-add, 2-subtract, 3-multiply>> 3

complex number is -6+17

#include<iostream.h>

#include<stdio.h>

#include<string.h>

struct student

{

 int roll, marks;

 char name[50];

};

void read(student s[], int n)

{

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

 {

 cout<<"Enter the roll no, marks and the name of the student "<<i+1<<" ";

 cin>>s[i].roll>>s[i].marks;

 gets(s[i].name);

 }

}

void sort(student a[], int n)

{

 for(int i=n-1;i>0;i--)

 {

 for(int j=0;j<i;j++)

 {

 if(strcmpi(a[j].name,a[i].name)>0)

 {

 student t=a[i];

 a[i]=a[j];

 a[j]=t;

 }

 }

 }

}

void display(student s[],int n)

{

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

 {

 cout<<s[i].roll<<"\t"<<s[i].marks<<"\t";

 puts(s[i].name);

 }

}

void main()

{

 student satan[10];

 cout<<"Enter the no. of students";

 int n;

 cin>>n;

 read(satan,n);

 sort(satan,n);

 cout<<"The sorted array is \n";

 display(satan,n);

}

/\* Output

Enter the no. of students3

Enter the roll no, marks and the name of the student 1 17

76

Suresh

Enter the roll no, marks and the name of the student 2 23

89

Karan

Enter the roll no, marks and the name of the student 3 8

56

Abhi

The sorted array is

8 56 Abhi

23 89 Karan

17 76 Suresh

\*/

#include<iostream.h>

void read(int A[][10], int r, int c)

{ for (int i=0;i<r;++i)

 for(int j=0;j<c;++j)

 cin>>A[i][j];

 }

void display(int A[][10], int r, int c)

{

 for (int i=0;i<r;++i)

 for(int j=0;j<c;++j)

 cout<<A[i][j];

 }

void add(int A[][10],int B[][10],int r1,int c1)

{

int C[10][10];

for(int i=0;i<r1;++i)

for(int j=0;j<c1;++j)

 C[i][j]=A[i][j]+B[i][j];

 display(C,r1,c1);

 }

void main()

{

int A[10][10],B[10][10],C[10][10],r1,c1,c2,r2;

cout<<"enter the dimensions of A \n";

cin>>r1>>c1;

cout<<"enter the dimensions of B \n";

cin>>r2>>c2;

if(r1==r2 && c1==c2)

 {

 read(A,r1,c1);

 display(A,r1,c1);

 read(B,r2,c2);

 display(B,r2,c2);

 add(A,B,r1,c1);

 }

 else

 cout<<"addition not possible";

 }

 OUTPUT

 enter the dimensions of A

5

6

enter the dimensions of B

7

2

addition not possible

#include <iostream.h>

void main()

{

 int n,i,j,m,q,a;

 cout<<"enter a number";

 cin>>n;

 for(i=n;i>=1;i--)

 {

 cout<<"\n";

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

 cout<<"\*";

 }

 cout<<"\n"; cout<<"\n"; cout<<"\n";

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

 {

 cout<<"\n";

 for(j=i;j>=1;j--)

 cout<<j;

 }

 for(m=1;m<=n-1;m++)

 {

 cout<<"\n";

 for(q=1;q<=n-m;q++)

 cout<<q;

 }

}



#include <iostream.h>

void main()

{

 int i,j,m,q,n;

 cout<<"enter a number";

 cin>>n;

 char ch='a';

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

 {

 ch='a';

 ch+=(i-1);

 cout<<"\n";

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

 {

 cout<<ch;

 ch--;

 }

 }

}



#include<iostream.h>

#include<math.h>

void main()

{

 int num,count=0,digit,sum=0,power,n;

 cout<<"Enter a number";

 cin>>num;

 n=num;

 do{

 num=num/10;

 count++;

 }while(num!=0);

 num=n;

 do{

 digit=num%10;

 num=num/10;

 power=pow(digit,count);

 sum=sum+power ;

 }while(num!=0);

 cout<<"the number of digits of the entered number are"<<sum;

 if(n==sum)

 cout<<"IT IS AN AMSTRONG NUMBER";

 else

 cout<<" GET LOST IT'S A FAKE NUMBER";

}



#include<iostream.h>

void read(int a[],int n)

{

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

 cin>>a[i];

}

void display(int a[],int n)

{

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

 cout<<a[i]<<endl;

}

void insertion(int a[],int n)

{

 for(int i=1;i<n;i++)

 {

 int temp,j;

 temp=a[i] ;

 j=i-1;

 while (temp<a[j] && j>=0)

 {

 a[j+1]=a[j];

 j--;

 }

 a[j+1]=temp;

 }

}

void main()

{

 int n,a[1000];

 cout<<"Enter the size";

 cin>>n;

 read(a,n);

 cout<<"BEFORE SORTING";

 display(a,n);

 insertion(a,n);

 cout<<"The elements after sorting"<<endl;

 display(a,n);

}



#include<iostream.h>

void read(int[],int);

void display(int[],int);

int large (int[],int) ;

void main()

{

 int a[100],n,lar;

 cout<<"enter no. of elements";

 cin>>n;

 read(a,n);

 display(a,n) ;

 lar=large(a,n) ;

 cout<<lar;

}

void read(int a[],int n)

{

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

 {

 cout<<"Enter the "<<(i+1)<<"th element\t";

 cin>>a[i];

 }

}

void display(int a[],int n)

{

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

 cout<<"The"<<(i+1)<<"\t"<<a[i]<<endl;

}

int large (int a[],int n)

{

 int lar = a[0];

 for(int i=1;i<n;i++)

 {

 if(a[i]>lar)

 {

 lar=a[i];

 }

 }

 return lar;

}



#include<iostream.h>

void read(int [],int);

void display(int [],int);

void selection(int [],int);

int bsearch(int [],int,int);

void main()

{

 int a[1000],n,element;

 cout<<"Enter the size";

 cin>>n;

 read(a,n);

 cout<<"Before sorting";

 display(a,n);

 selection(a,n);

 cout<<"After sorting";

 display(a,n);

 int pos;

 cout<<" Enter the search item";

 cin>>element;

 pos=bsearch(a,n,element);

 if(pos==-1)

 {

 cout<<"NOT FOUND ";

 }

 else

 {

 cout<<"found at:"<<pos<<endl;

 }

}

void read(int marks[],int n)

{

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

 cin>>marks[i];

}

void display(int marks[],int n)

{

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

 cout<<marks[i]<<endl;

}

void selection(int a[],int n)

{

 int temp;

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

 {

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

 {

 if(a[j]<a[i])

 {

 temp=a[i];

 a[i]=a[j];

 a[j]=temp;

 }

 }

 }

}

int bsearch(int a[],int n,int element)

{

 int beg=0,mid,last=n-1,p=-1;

 while(beg<=last && p==-1)

 {

 mid=(beg+last)/2;

 if(element==a[mid])

 {

 p=mid+1;

 }

 else if(element>a[mid])

 {

 beg=mid+1;

 }

 else

 {

 last=mid-1;

 }

 }

 return p;

}



#include<iostream.h>

void bubble(int a[],int n)

{

 for(int i=0;i<n-1;i++)

 {

 int temp;

 for(int j=0;j<n-1-i;j++)

 if(a[j+1]<a[j])

 {

 temp=a[j];

 a[j]=a[j+1];

 a[j+1]=temp;

 }

 }

}

void read(int a[],int n)

{

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

 cin>>a[i];

}

void display(int a[],int n)

{

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

 cout<<a[i]<<endl;

}

void main()

{

 int n,a[1000];

 cout<<"Enter the size";

 cin>>n;

 read(a,n);

 cout<<"BEFORE SORTING";

 display(a,n);

 bubble(a,n);

 cout<<"The elements after sorting"<<endl;

 display(a,n);

}

