```c
// calculul randamentului si puterii pentru un fir conectat la un generator de cc
#include <stdio.h>
#include <conio.h>
#include <math.h>

void main(void)
{
// incepe zona declarare variabile

int e,ri,l,s,imax;
float r,pext,eta,i,g;
//sfirsit  zona declarare variabile

// incepe zona citire date de intrare
clrscr();
printf("\nTensiunea gen. E=");
scanf("%d",&e);
printf("\nRez. interna gen. ri=");
scanf("%d",&ri);
printf("\nLungimea fir L=");
scanf("%d",&l);
printf("\nSectiunea fir S=");
scanf("%d",&s);
printf("\nCurentul maxim admis Imax=");
scanf("%d",&imax);
printf("\nConductivitatea gama=");
scanf("%f",&g);
// sfirsit  zona citire date de intrare

//incepe zona de calcul conform algoritmului
        r=l/(g*s);
        i=e/(r+ri);
        pext=r*sqrt(i);
        eta=pext/(e*i);
// sfirsit zona de calcul conform algoritmului

//incepe zona afisarii rezultatelor
printf("\nPext=%3.8f",pext);
printf("\nRandament=%3.8f",eta);
if(i<imax) printf("\nI=%3.8f < Imax",i);
else printf("\nI=%2.8f >Imax",i);
//sfirsit zona afisarii rezultatelor

printf("\nApasati orice tasta ca sa terminati programul");
getch();
}
```

```
/*********************************************************************
**********************************************************************
**************************/
//exemplu de calcul a unei functii cu mai multe ramuri;
#include <stdio.h>
#include <conio.h>

void main(void)
{
int x,f;

clrscr();
printf("x=");
scanf("%d",&x);

if(x<-5)f=x-1;
else
        if(x==-5)f=-6;
        else f=2*x+4;

printf("\nf(x)=%d",f);
getch();
}
/*********************************************************************
**********************************************************************
**************************/
// repetarea de un numar specificat de ori a calcului
// pentr o functie_multipla;
#include <stdio.h>
#include <conio.h>

void main(void)
{
int x,n,f,i;

begin
clrscr;
printf("Numarul de repetari a calculului functiei f n=");
scanf("%d",&n);

for(i:=0;i<n;i++)
{
clrscr();
printf("x=");
scanf("%d",&x);
if(x<-5)f=x-1;
else
        if(x==-5)f=-6;
        else f=2*x+4;

printf("\nf(x)=%d",f);
}
getch();
}

/************************************************************************
*************************************************************************
***************************/
// exemplu de lucru cu sirurile de caractere
#include <stdio.h>
#include <conio.h>
#include <string.h>

void main(void)
{
char s[10],a,c;
int i,b,d;

clrscr();
printf("Introduceti sirul de prelucrat s=");
gets(s);

a=s[0];
b=strlen(s);
c=s[b-1];

if ((a>='A')&&(a <='Z'))
        {
        s[0]+=32;
        s[b-1]+=32;
        }
else
        {
        s[0]-=32;
        s[b-1]-=32;
        }
printf("\nprima litera %c",a);
printf("\nultima litera %c",c);
printf("\nsirul prelucrat %s",s);
getch();
```

```
//obs programul nu ia in calcul situatia in care in sir de litere apar si cifre
}
/**********************************************************************
***********************************************************************
**************************/
// program care implementeaza functia de stergere a unui caracter
#include <stdio.h>
#include <conio.h>
#include <string.h>

int strdel(char s[], int pos);
void main(void)
{
char s[20];
int n;
clrscr();
printf("Dati sirul s=");
gets(s);
printf("dati pozitia de eliminare ");
scanf("%d",&n);
if(strdel(s,n))puts("Eroare, pozitia este in afara sirului ");
else printf("\n Noul sir este=%s",s);
getch();
}
int strdel(char s[], int pos)
{
if(pos>=strlen(s))return -1;// eroare de apelare
pos--;
while(s[pos]!='\0')
        {
        s[pos]=s[pos+1];
        pos++;
        }
return 0;// functia s-a terminat corect
}
/**********************************************************************
***********************************************************************
**************************/
// program care implementeaza functia de stergere a unui caracter
// existenta in pascal
#include <stdio.h>
#include <conio.h>
#include <string.h>

int strdelpas(char s[], int pos, int nrcars);
void main(void)
```

```
{
char s[20];
int n,nrc;
clrscr();
printf("Dati sirul s=");
gets(s);
printf("dati pozitia de eliminare ");
scanf("%d",&n);
printf("dati nr de caractere ce se vor sterge ");
scanf("%d",&nrc);

if(strdelpas(s,n,nrc))puts("Eroare, pozitia este in afara sirului");
else printf("\n Noul sir este=%s",s);
getch();
}
int strdelpas(char s[], int pos, int nrcars)
{
if(pos>=strlen(s))return -1;// eroare de apelare
pos--;
while(s[pos]!='\0')
        {
        s[pos]=s[pos+nrcars];
        pos++;
        }
return 0;// functia s-a terminat corect
}
/***********************************************************************
************************************************************************
***************************/
//program pentru eliminarea caracterelor indentice;
#include <stdio.h>
#include <conio.h>
#include <string.h>
void main(void)
{
char s[25];
int i=0,j,n,pos;

clrscr();
printf("Introduceti sirul de prelucrat s=");
scanf("%s",s);

n=strlen(s);

do
{
        j=i+1;
                do
                {
                        if(s[i]==s[j])
                                {
                     pos=j;
                     while(s[pos]!='\0')
                             {
                             s[pos]=s[pos+1];
                             pos++;
                             }


                                n--;
                                }
                        else j++;
                }while (j<n);
        i++;
}while (i<n);

printf("Sirul rezultat este s=%s",s);
getch();
}
/***************************************************************************
****************************************************************************
****************************/
//program pentru eliminarea caracterelor indentice folosind functii;
// transfer de parametri in vechea maniera de programare
#include <stdio.h>
#include <conio.h>
#include <string.h>

int strdel(char s[], int pos);
void main(void)
{
char s[25];
int i=0,j,n,pos;

clrscr();
printf("Introduceti sirul de prelucrat s=");
scanf("%s",s);

n=strlen(s);

do
{
        j=i+1;
                do
                {
                        if(s[i]==s[j])
                                {
                                strdel(s,j);
                                n--;
                                }
                        else j++;
                }while (j<n);
        i++;
}while (i<n);

printf("Sirul rezultat este s=%s",s);
getch();
}
int strdel(char s[], int pos)
{
if(pos>=strlen(s))return -1;// eroare de apelare
while(s[pos]!='\0')
        {
        s[pos]=s[pos+1];
        pos++;
        }
return 0;// functia s-a terminat corect
}
/***********************************************************************
************************************************************************
***************************/

// program pentru ordonarea unui vector
// algoritm FOARTE lent pentru valori mari ale lui n
#include <stdio.h>
#include <conio.h>

void main(void)
{
float v[100],temp;
int i,n,j;

clrscr();

printf("Introduceti dimensiunea vectorului n=");
scanf("%d",&n);

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

```
        {
         printf("V[%d]=",i);
         scanf("%f",&v[i]);
        }
for(i=0;i<n-1;i++)
        for(j=i+1;j<n;j++)
                if(v[i]>v[j])
                {
                 temp=v[i];
                 v[i]=v[j];
                 v[j]=temp;
                 };
puts("Vectorul ordonat");
for(i=0;i<n;i++)
        printf("%3.3f ",v[i]);
}
/***********************************************************************
************************************************************************
***************************/

//program pentru extragerea unui vector ce contine
//elementele mai mari ca 1 dintr-un matrice;
// se foloseste validarea input-ului
#include <stdio.h>
#include <conio.h>

void main(void)
{
int n,m,i,j,k;
float a[10][10], b[100];

clrscr();
printf("n=");
scanf("%d",&n);
printf("m=");
scanf("%d",&m);

while ((n<0)||(n>10)||(m<0)||(m>10))
        {
        puts("0<m,n<10");
        printf("n=");
        scanf("%d",&n);
        printf("m=");
        scanf("%d",&m);
        }
for(i=0;i<n;i++)
```

```
		for(j=0;j<m;j++)
			{
			printf("m[%d,%d]=",i,j);
			scanf("%f",&a[i][j]);
			};
	k=0;
	for(i=0;i<n;i++)
		for(j=0;j<m;j++)
			if(a[i][j]>1)
				b[k++]=a[i][j];
	if(!k)puts("\nMatricea nu are elemente > 1");
	else
		{
		puts("vectorul elem. >1 este:");
		for(i=0;i<k;i++)printf("%3.2f ",b[i]);
		};
	getch();
	}

/*****************************************************************************
******************************************************************************
***************************/
//program inmutire matrici Amn x Bpq;
#include <stdio.h>
#include <conio.h>

void main(void)
{
int m,n,p,q,i,j,k;
float a[10][10], b[10][10],c[10][10];

clrscr();
	printf("m=");
	scanf("%d",&m);
	printf("n=");
	scanf("%d",&n);
	printf("p=");
	scanf("%d",&p);
	printf("q=");
	scanf("%d",&q);

while (n!=p)
	{
	puts("Date eronate, n trebuie sa fie egal cu p");
	printf("m=");
	scanf("%d",&m);
```

```
        printf("n=");
        scanf("%d",&n);
        printf("p=");
        scanf("%d",&p);
        printf("q=");
        scanf("%d",&q);

      }
for(i=0;i<m;i++)
        for(j=0;j<n;j++)
                {
                printf("a[%d,%d]=",i,j);
                scanf("%f",&a[i][j]);
                };
for(i=0;i<p;i++)
        for(j=0;j<q;j++)
                {
                printf("b[%d,%d]=",i,j);
                scanf("%f",&b[i][j]);
                };

for(i=0;i<m;i++)
        for(j=0;j<q;j++)
                {
                c[i][j]=0;
                for(k=0;k<n;k++)
                        c[i][j]=c[i][j]+a[i][k]*b[k][j];
                };
clrscr();
puts("Matricea C=A*B este ");
for(i=0;i<m;i++)
      {
        for(j=0;j<q;j++)
                printf("%3.2f ",c[i][j]);
        puts("");
        }
getch();
}

/*************************************************************************
**************************************************************************
***************************/
// program care generaza vectorul ce contine
// suma elem de pe liniile unei matrici;
#include <stdio.h>
#include <conio.h>
```

```
void main(void)
{
int n,m,i,j,k;
float a[10][10], b[10],s;

clrscr();
printf("n=");
scanf("%d",&n);
printf("m=");
scanf("%d",&m);

for(i=0;i<n;i++)
        for(j=0;j<m;j++)
                {
                printf("m[%d,%d]=",i,j);
                scanf("%f",&a[i][j]);
                };


for(j=0;j<m;j++)
     {
        s=0;
        for(i=0;i<n;i++)
                s+=a[i][j];
                b[j]=s;
        }
for(i=0;i<n;i++)
     {
        for(j=0;j<m;j++)
                printf("%3.2f ",a[i][j]);
        puts("");
        }

puts("Vectorul continind suma elementelor pe fiecare linie este");
for(i=0;i<m;i++)
        printf("%3.2f ",b[i]);
getch();
}
/*********************************************************************************
**********************************************************************************
***************************/
// program exemplu de functie;
#include <stdio.h>
#include <conio.h>
#include <math.h>
```

```
#include <values.h>

float rezolv(float x, float y);

void main(void)
{
float a,b,x;
clrscr();
printf("a=");
scanf("%f",&a);
printf("b=");
scanf("%f",&b);
x=rezolv(a,b);
printf("\nSolutia este %8.3f",x);
getch();
}

float rezolv(float x, float y)
{
float fx,fy,fc,c,eps;
fx=x*sqrt(x)+5*sqrt(x)+2*x-7;
fy=y*sqrt(y)+5*sqrt(y)+2*y-7;
if(fx*fy<0) return MAXDOUBLE; // semnalez o eroare de calcul
do
{
    c=(x+y)/2;
    fc=c*sqrt(c)+5*sqrt(c)+2*c-7;
    if (fx*fc>0)
            {
            fx=fc;
            x=c;
            }
    else y=c;
    eps=abs(x-y);
}while(eps>0.001);
return c;
}

/*
program care realizeaza sumarea a doi vectori de aceeasi
dimensiune, versiune cu for

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

```
void main(void)
{
int i,n;
int x[20],y[20],z[20];

clrscr();
printf("n=");
scanf("%d",&n);

for(i=0;i<n;i++)
        {
        printf("x[%d]=",i);
        scanf("%d",&x[i]);
        }

for(i=0;i<n;i++)
        {
        printf("y[%d]=",i);
        scanf("%d",&y[i]);
        }
for(i=0;i<n;i++)
        {
        z[i]=x[i]+y[i];
        }
for(i=0;i<n;i++)
        {
        printf("\nz[%d]=%d",i,z[i]);
        }
getch();
}
/*****************************************************************************
******************************************************************************
***************************/

/*
program care realizeaza sumarea a doi vectori de aceeasi
dimensiune, versiune cu while

*/
#include <stdio.h>
#include <conio.h>

void main(void)
{
int i,n;
int x[20],y[20],z[20];
clrscr();
printf("n=");
scanf("%d",&n);

i=0;
while(i<n)
        {
        printf("x[%d]=",i);
        scanf("%d",&x[i]);
        i++;
        }
i=0;
while(i<n)
        {
        printf("y[%d]=",i);
        scanf("%d",&y[i]);
        i++;
        }
i=0;
while(i<n)
        {
        z[i]=x[i]+y[i];
        i++;
        }
i=0;
while(i<n)
        {
        printf("\nz[%d]=%d",i,z[i]);
        i++;
        }
getch();
}
/**************************************************************************
***************************************************************************
****************************/
/*
program care realizeaza sumarea a doi vectori de aceeasi
dimensiune, versiune cu do..while
Observatie nu este o echivalnta perfecta a for.. pentru ca testul fiind
posterior bucla se executa macar o data !

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

```
void main(void)
{
int i,n;
int x[20],y[20],z[20];

clrscr();
printf("n=");
scanf("%d",&n);

i=0;
do
{
	printf("x[%d]=",i);
	scanf("%d",&x[i]);
}while(i++<n);
i=0;
do
{
	printf("y[%d]=",i);
	scanf("%d",&y[i]);
}while(i++<n);
i=0;
do
{
	z[i]=x[i]+y[i];
}while(i++<n);
i=0;
do
{
	printf("\nz[%d]=%d",i,z[i]);
}while(i++<n);
getch();
}
/***********************************************************************
************************************************************************
***************************/
/*
program care realizeaza scaderea a doi vectori de aceeasi
dimensiune, versiune cu for

*/
#include <stdio.h>
#include <conio.h>

void main(void)
{
```

```
int i,n;
int x[20],y[20],z[20];

clrscr();
printf("n=");
scanf("%d",&n);

for(i=0;i<n;i++)
        {
        printf("x[%d]=",i);
        scanf("%d",&x[i]);
        }

for(i=0;i<n;i++)
        {
        printf("y[%d]=",i);
        scanf("%d",&y[i]);
        }
for(i=0;i<n;i++)
        {
        z[i]=x[i]-y[i];
        }
for(i=0;i<n;i++)
        {
        printf("\nz[%d]=%d",i,z[i]);
        }
getch();
}
/**************************************************************************
***************************************************************************
****************************/
/*
program care realizeaza produsul scalar a doi vectori de aceeasi
dimensiune, versiune cu for

*/
#include <stdio.h>
#include <conio.h>

void main(void)
{
int i,n,s=0;
int x[20],y[20];

clrscr();
printf("n=");
```

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

for(i=0;i<n;i++)
          {
          printf("x[%d]=",i);
          scanf("%d",&x[i]);
          }

for(i=0;i<n;i++)
          {
          printf("y[%d]=",i);
          scanf("%d",&y[i]);
          }
for(i=0;i<n;i++)
          {
          s+=x[i]*y[i];
          }
printf("\nProd scalar este %d",s);
getch();
}

/**************************************************************************
***************************************************************************
****************************/
/*
program care realizeaza ordonarea descrecatoare
prin "Buble sort" a unui vector de aceeasi dimensiune, versiune cu for

*/
#include <stdio.h>
#include <conio.h>

void main(void)
{
int i,j,n,t;
int x[20];

clrscr();
printf("n=");
scanf("%d",&n);

for(i=0;i<n;i++)
          {
          printf("x[%d]=",i);
          scanf("%d",&x[i]);
          }
```

```
for(i=0;i<n-1;i++)
        {
        for(j=i+1;j<n;j++)
                {
                if(x[i]<x[j])
                        {
                        t=x[i];
                        x[i]=x[j];
                        x[j]=t;
                        }
                }
        }
printf("Vectorul ordonat descrescator este: \n");
for(i=0;i<n-1;i++)
        {
        printf(" %d",x[i]);
        }
getch();
}
/***********************************************************************
************************************************************************
***************************/
/*
program care realizeaza ordonarea crescatoare
prin "Buble sort" a unui vector de aceeasi dimensiune, versiune cu for

*/
#include <stdio.h>
#include <conio.h>

void main(void)
{
int i,j,n,t;
int x[20];

clrscr();
printf("n=");
scanf("%d",&n);

for(i=0;i<n;i++)
        {
        printf("x[%d]=",i);
        scanf("%d",&x[i]);
        }
for(i=0;i<n-1;i++)
        {
```

```
        for(j=i+1;j<n;j++)
                {
                if(x[i]>x[j])
                        {
                        t=x[i];
                        x[i]=x[j];
                        x[j]=t;
                        }
                }
        }
printf("Vectorul ordonat crescator este: \n");
for(i=0;i<n-1;i++)
        {
        printf(" %d",x[i]);
        }
getch();
}
/***********************************************************************
************************************************************************
***************************/
/*
program care realizeaza sumarea a doi vectori de
dimensiuni diferite, evident se considera completat cu zero vectorul de
dimensiune mai mica

*/
#include <stdio.h>
#include <conio.h>

void main(void)
{
int i,n,m,dim;
int x[20],y[20],z[20];

clrscr();
printf("n=");
scanf("%d",&n);
printf("m=");
scanf("%d",&m);

for(i=0;i<n;i++)
        {
        printf("x[%d]=",i);
        scanf("%d",&x[i]);
        }
```

```
for(i=0;i<m;i++)
        {
        printf("y[%d]=",i);
        scanf("%d",&y[i]);
        }
if(n<m)
{
for(i=0;i<m;i++)
        {
        if(i<n)z[i]=x[i]+y[i];
        else z[i]=y[i];
        }
dim=m;
}
else
{
for(i=0;i<n;i++)
        {
        if(i<m)z[i]=x[i]+y[i];
        else z[i]=x[i];
        }
dim=n;
}

for(i=0;i<dim;i++)
        {
        printf("\nz[%d]=%d",i,z[i]);
        }
getch();
}
/*********************************************************************
**********************************************************************
**************************/
/*
program care realizeaza scaderea a doi vectori de
dimensiuni diferite, evident se considera completat cu zero vectorul de
dimensiune mai mica

*/
#include <stdio.h>
#include <conio.h>

void main(void)
{
int i,n,m,dim;
int x[20],y[20],z[20];
```

```
clrscr();
printf("n=");
scanf("%d",&n);
printf("m=");
scanf("%d",&m);

for(i=0;i<n;i++)
        {
        printf("x[%d]=",i);
        scanf("%d",&x[i]);
        }

for(i=0;i<m;i++)
        {
        printf("y[%d]=",i);
        scanf("%d",&y[i]);
        }
if(n<m)
{
for(i=0;i<m;i++)
        {
        if(i<n)z[i]=x[i]-y[i];
        else z[i]=-y[i];
        }
dim=m;
}
else
{
for(i=0;i<n;i++)
        {
        if(i<m)z[i]=x[i]-y[i];
        else z[i]=x[i];
        }
dim=n;
}

for(i=0;i<dim;i++)
        {
        printf("\nz[%d]=%d",i,z[i]);
        }
getch();
}
/***********************************************************************
************************************************************************
***************************/
```

```
/*
program care realizeaza cautarea unei valori intr-un vector,
si anunta prima pozitie pe care este gasita valoarea
*/
#include <stdio.h>
#include <conio.h>

void main(void)
{
int i,n,t,val,pos=-1;
int x[20];

clrscr();
printf("n=");
scanf("%d",&n);

for(i=0;i<n;i++)
	{
	printf("x[%d]=",i);
	scanf("%d",&x[i]);
	}
printf("Valoarea de cautat:");
scanf("%d",&val);
i=0;
while((x[i]!=val)&&(i++<n));
if(i<n)pos=i;
if(pos>0)printf("El se gaseste in pozitia a %d a",pos+1);
else puts("Nu s-a gasit in vector");
getch();
}
```