

**O'ZBEKISTON RESPUBLIKASI RAQAMLI
TEXNOLOGIYALARI VAZIRLIGI**

**TOSHKENT AXBOROT TEXNOLOGIYALARI
UNIVERSITETI**



MUSTAQIL ISHI-1

Bajardi: PRG003-GURUH TALABASI GIYOSDDINOV JAVOXIR
TEKSHIRDI: Qurbonov Nozim Muxammadrashitovich

1. Chiziqli jarayonlarni dasturlash (Ixtiyoriy tanlangan 2-3 ta topshiriq – 1 ball).

1.1:berilgan int soning teskarisiga chiqaradigan dastur
tuzung(123-321)

DASTUR KODI:

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int a;
```

```
    cout<<"a ni kirintg\n";
```

```
    cin>>a;
```

```
    int bosh,ort,oxr;
```

```
    bosh=a/100;
```

```
    ort=(a/10)%10;
```

```
    oxr=a%10;
```

```
    cout<<"natija = "<<oxr<<ort<<bosh<<endl;
```

```
    return 0;
```

```
}
```

DASTUR NATIJASI:

C:\-шёъ (D)\projekt\maruza mustaqil ish.exe

```
a ni kirintg
123
natija = 321
```

```
-----
Process exited after 4.454 seconds with return value 0
Для продолжения нажмите любую клавишу . . .
```

1.2: berilgan 3 ta r qarshilikni parallel ulaydigan dastur tuzing

DASTUR KODI:

```
#include <iostream>

#include <cmath>

using namespace std;

int main()
{
    int r1,r2,r3;

    cout<<"r1 = ";
    cin>>r1;

    cout<<"r2 = ";
    cin>>r2;

    cout<<"r3 = ";
    cin>>r3;
```

```

float ru;

ru=pow((1/r1+1/r2+1/r3),-1);


cout<<"natija >>> "<<ru<<endl;

return 0;

}

```

DASTUR NATIJASI:

 C:\-шёь (D)\projekt\maruza mustaqil ish.exe

```

r1 = 1
r2 = 1
r3 = 1
natija >>> 0.333333
-----
Process exited after 1.769 seconds with return value 0
Для продолжения нажмите любую клавишу . . .

```

1.3:uchburchakni uchta nuqtasini kordinatalari berilgan shu uchburchakni peremetiri va yuzasini topadigan dastur tuzing

DASTUR KODI:

```

#include <iostream>

#include <cmath>

using namespace std;

int main()

{

    float x1,x2,x3;

```

```
float y1,y2,y3;
```

```
cout<<"x1 = ";
```

```
cin>>x1;
```

```
cout<<"y1 = ";
```

```
cin>>y1;
```

```
cout<<"x2 = ";
```

```
cin>>x2;
```

```
cout<<"y2 = ";
```

```
cin>>y2;
```

```
cout<<"x3 = ";
```

```
cin>>x3;
```

```
cout<<"y3 = ";
```

```
cin>>y3;
```

```
float a,b,c;
```

```
a=sqrt(pow(x1-x2,2)+pow(y1-y2,2));
```

```
b=sqrt(pow(x2-x3,2)+pow(y2-y3,2));
```

```
c=sqrt(pow(x1-x3,2)+pow(y1-y3,2));
```

```
float yuza,p;
```

```
p=(a+b+c)/2;
```

```
yuza=p*(p-a)*(p-b)*(p-c);
```

```

cout<<"uchburchakni yuzasi >>> "<<sqrt(yuza)<<endl;

cout<<"uchburchakni peremetiri >>> "<<p*2<<endl;

return 0;

}

```

DASTUR NATIJASI:

```

C:\-шѐъ (D)\projekt\maruza mustaqil ish.exe
x1 = 1
y1 = 23
x2 = 21
y2 = 3
x3 = 2
y3 = 12
uchburchakni yuzasi >>> 100
uchburchakni peremetiri >>> 60.3534

-----
Process exited after 7.296 seconds with return value 0
Для продолжения нажмите любую клавишу . . .

```

2. Tarmoqlanuvchi jarayonlarni dasturlash (Ixtiyoriy tanlangan 2-3 ta topshiriq – 1 ball).

2.1:berilgan (1-999) soni sozlarda ifodalovchi dsatur tuzing

DASTUR KODI:

```

#include <iostream>

using namespace std;

int main()

{

    int a;

```

```
cout<<"sonni kiritng (1-999) >>> ";  
cin>>a;  
switch(a/100){  
    case 1: cout<<"yuz "; break;  
    case 2: cout<<"ikki yuz "; break;  
    case 3: cout<<"uch yuz "; break;  
    case 4: cout<<"tort yuz "; break;  
    case 5: cout<<"besh yuz "; break;  
    case 6: cout<<"olti yuz "; break;  
    case 7: cout<<"yetti yuz "; break;  
    case 8: cout<<"sakkiz yuz "; break;  
    case 9: cout<<"toqiz yuz "; break;  
}  
switch((a/10)%10){  
    case 1: cout<<"on "; break;  
    case 2: cout<<"yigirma "; break;  
    case 3: cout<<"ottiz "; break;  
    case 4: cout<<"qirq "; break;  
    case 5: cout<<"ellik "; break;  
    case 6: cout<<"oltmish "; break;  
    case 7: cout<<"yetmish "; break;  
    case 8: cout<<"sakson "; break;
```


```

        case 9: cout<<"toqson "; break;
    }
    switch(a%10){
        case 1: cout<<"bir "; break;
        case 2: cout<<"ikki "; break;
        case 3: cout<<"uch "; break;
        case 4: cout<<"tort "; break;
        case 5: cout<<"besh "; break;
        case 6: cout<<"olti "; break;
        case 7: cout<<"yetti "; break;
        case 8: cout<<"sakkiz "; break;
        case 9: cout<<"toqqiz "; break;
    }

    return 0;
}

```

DASTUR NATIJASI:

 C:\-шёъ (D)\projekt\maruza mustaqil ish.exe

```
sonni kiritng (1-999) >>> 432
```

```
tort yuz ottiz ikki
```

```
-----
```

```
Process exited after 3.981 seconds with return value 0
```

```
Для продолжения нажмите любую клавишу . . .
```


2.2:kvadrat tenglamaning a , b va c lari berilgan uning yechimlarini chiqaradigan dastur tuzing

DASTUR KODI:

```
#include <iostream>

#include <cmath>

using namespace std;

int main()

{

    cout<<" ax^2+bx+c "<<endl;

    float a,b,c;

    cout<<"a = ";

    cin>>a;

    cout<<"b = ";

    cin>>b;

    cout<<"c = ";

    cin>>c;

    float d;

    d=pow(b,2)-4*a*c;

    if(d<0){

        cout<<"bosh toplam"<<endl;

    }

    else if(d==0){
```

```

float v;

cout<<"bitta ildizi bor"<<endl;

v=-b/(2*a);

cout<<"ildizi >>> "<<v<<endl;

}

else{

float yechim1,yechim2;

yechim1=(-b+sqrt(d))/2*a;

yechim2=(-b-sqrt(d))/2*a;

cout<<"birinchi ildiz >> "<<yechim1<<endl;

cout<<"ikkinchi ildiz >> "<<yechim2<<endl;

}

return main();

}

```

DASTUR NATIJASI:

```

C:\-шѐъ (D)\projekt\maruza mustaqil ish.exe
ax^2+bx+c
a = -4
b = 3
c = 1
birinchi ildiz >> -4
ikkinchi ildiz >> 16
ax^2+bx+c
a = 1
b = -4
c = 3
birinchi ildiz >> 3
ikkinchi ildiz >> 1
ax^2+bx+c
a = 1
b = 0
c = -4
birinchi ildiz >> 2
ikkinchi ildiz >> -2
ax^2+bx+c
a =

```

2.3:tosh **qaychi qogoz oynini dasturini tuzing**

DASTUR KODI:

```
#include <iostream>
```

```
#include <time.h>
```

```
#include <stdlib.h>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    srand(time(NULL));
```

```
    int a;
```

```
    cout<<"qogoz:0 qaychi:1 tosh:2 >>> "<<endl;
```

```
    cin>>a;
```

```
    int kom;
```

```
    kom=rand()%3+0;
```

```
    if(a==kom){
```

```
        cout<<"durang!!"<<endl;
```

```
    }
```

```
    else if(a==0&&kom==2){
```

```
        cout<<"yutingiz!"<<endl;
```

```
    }
```

```
    else if(a==1&&kom==0){
```

```
        cout<<"yutingiz!"<<endl;
```

```

    }

    else if(a==2&&kom==0){

        cout<<"yutingiz!"<<endl;

    }

    else if(3<a){

        cout<<"aka (0-2) oraliqda son tanlang"<<endl;

    }

    else{

        cout<<"maglubiyat!"<<endl;

    }

    return main();

}

```

DASTUR NATIJASI:

C:\-шëб (D)\projekt\maruza mustaqil ish.exe

```

qogoz:0 qaychi:1 tosh:2 >>>
21
aka (0-2) oraliqda son tanlang
qogoz:0 qaychi:1 tosh:2 >>>
1
maglubiyat!
qogoz:0 qaychi:1 tosh:2 >>>
2
yutingiz!
qogoz:0 qaychi:1 tosh:2 >>>
3
maglubiyat!
qogoz:0 qaychi:1 tosh:2 >>>
0
durang!!
qogoz:0 qaychi:1 tosh:2 >>>

```

3. Takrorlanuvchi jarayonlarni dasturlash (Ixtiyoriy tanlangan 2-3 ta topshiriq – 1 ball)

3.1:kompyuter oylagan sonni toppish oynini dasturini tuzing

DASTUR KODI:

```
#include <iostream>
```

```
#include <time.h>
```

```
#include <stdlib.h>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int x=rand()%100+1;
```

```
    cout<<"kompyuter soni oylab boldi"<<endl;
```

```
    while(true){
```

```
        int a;
```

```
        cout<<"oylagan soningizni kiring >>> ";
```

```
        cin>>a;
```

```
        if(a>x){
```

```
            cout<<"katta son oyladingiz"<<endl;
```

```
            continue;
```

```
        }
```

```
        else if(a<x){
```

```
            cout<<"kichik son oyladingiz"<<endl;
```


```

        continue;
    }
    else{
        cout<<"uraa topdingiz!!"<<endl;
        break;
    }
}

return 0;
}

```

DASTUR NATIJASI:

 C:\-шәъ (D)\projekt\maruza mustaqil ish.exe

```

kompyuter soni oylab boldi
oylagan soningizni kiring >>> 12
kichik son oyladingiz
oylagan soningizni kiring >>> 23
kichik son oyladingiz
oylagan soningizni kiring >>> 34
kichik son oyladingiz
oylagan soningizni kiring >>> 55
katta son oyladingiz
oylagan soningizni kiring >>> 45
katta son oyladingiz
oylagan soningizni kiring >>> 34
kichik son oyladingiz
oylagan soningizni kiring >>> 44
katta son oyladingiz
oylagan soningizni kiring >>> 42
uraa topdingiz!!

```

3.2:masiv va tokrorlanivchi operatorlar orqali tarjimon dasturini tuzing

DASTUR KODI:

```

#include <iostream>

#include <string>

using namespace std;

int main()

{

    string ozbek[5]={"mashina","ayiq","qalam","suv","kuchuk"};

    string eng[5]={"car","bear","pen","water","dog"};

    int tanlov;

    cout<<"tilni tanlang ozb:1 eng:2 >>> ";

    cin>>tanlov;

    if(tanlov==1){

        string soz;

        cout<<"tarjima qilmoqchi bolgan sozingizni kirintg >>> ";

        cin>>soz;

        for(int i=0;i<5;i++){

            if(soz==ozbek[i]){

                cout<<soz<<" sozining tarjimasi >>>

" <<eng[i]<<endl;

            }

        }

    }

    else if(tanlov==2){

```

```

string soz;

cout<<"enter the word you want to translate >>> ";

cin>>soz;

for(int i=0;i<5;i++){

    if(soz==eng[i]){

        cout<<"the translation of your word >>>

"<<ozbek[i]<<endl;

    }

}

}

else{

    cout<<"aka men bashqa tillarni bilmayman"<<endl;


}

return main();

}

```

DASTUR NATIJASI:

 C:\-шэб (D)\projekt\maruza mustaqil ish.exe

```

tilni tanlang ozb:1 eng:2 >>> 1
tarjima qilmoqchi bolgan sozingizni kirintg >>> mashina
mashina sozining tarjimasi >>> car
tilni tanlang ozb:1 eng:2 >>> 1
tarjima qilmoqchi bolgan sozingizni kirintg >>> suv
suv sozining tarjimasi >>> water
tilni tanlang ozb:1 eng:2 >>> 2
enter the word you want to translate >>> pen
the translation of your word >>> qalam
tilni tanlang ozb:1 eng:2 >>>

```


3.3: Berilgan sondagi raqamlarining sonini topuvchi dastur tuzing.

DASTUR KODI:

```
#include <iostream>

using namespace std;

int main()
{
    long int a;

    cout<<"sonni kiritg >>> ";

    cin>>a;

    int count=0;

    do{

        a/=10;

        count+=1;

    }while(a>0);

    cout<<"natija >>> "<<count<<endl;

    return 0;
```

}DASTUR NATIJASI:

C:\-шѐъ (D)\projekt\maruza mustaqil ish.exe

sonni kiritg >>> 12132231

natija >>> 8

Process exited after 2.943 seconds with return value 0

Для продолжения нажмите любую клавишу . . .

4. Funksiyalar va ular bilan ishlash (Ixtiyoriy tanlangan 2-3 ta topshiriq – 1 ball)

4.1: fibonacci sonninig n-hadini qaytaruvchi rekrusiv funksiya dasturini tozing

DASTUR KODI:

```
#include <iostream>

using namespace std;

int fibonacci(int n);

int main()
{
    int a;

    cout<<"qaytarmoqchi bolgan haddi kiriting >>> ";

    cin>>a;

    cout<<fibonacci(a)<<endl;

    return main();
}

int fibonacci(int n)
{
    if(n==1){
        return 0;
    }

    else if(n==2){
```

```

        return 1;
    }
    else if(n<0){
        cout<<"aka had ham manfiy boladimi";
    }
    else return fibonachi(n-1)+fibonachi(n-2);
}

```

DASTUR NATIJASI:

C:\-шѐъ (D)\projekt\maruza mustaqil ish.exe

```

qaytarmoqchi bolgan haddi kiriting >>> 1
0
qaytarmoqchi bolgan haddi kiriting >>> 12
89
qaytarmoqchi bolgan haddi kiriting >>> 2
1
qaytarmoqchi bolgan haddi kiriting >>> 3
1
qaytarmoqchi bolgan haddi kiriting >>> 13
144
qaytarmoqchi bolgan haddi kiriting >>> 22
10946
qaytarmoqchi bolgan haddi kiriting >>> _

```

4.2: Kvadrat matritsani qabul qilib, uning diagonal elementlarini ekranga chiqaradigan funksiya yozing.

DASTUR KODI: #include <iostream>

#include <iomanip>

using namespace std;

void funk(int a);

```

int main()
{
    int a,b;

    cout<<"a = ";

    cin>>a;

    funk(a);

    return 0;
}

void funk(int a)
{
    int** arr = new int*[a];

    for (int i = 0; i < a; i++) {
        arr[i] = new int[a];
    }

    for(int i=0;i<a;i++){
        for(int j=0;j<a;j++){
            cout<<"arr["<<i<<"]["<<j<<"] = ";

            cin>>arr[i][j];

        }
    }

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

```

```

        for(int j=0;j<a;j++){
            cout<<setw(4)<<arr[i][j];
        }
        cout<<endl;
    }
    for(int i=0;i<a;i++){
        for(int j=0;j<a;j++){
            if(i==j || i+j==a-1){
                cout<<arr[i][j]<<" , ";
            }
        }
    }
}

```

}DASTUR NATIJASI:

C:\-шёъ (D)\projekt\maruza mustaqil ish.exe

```

a = 3
arr[0][0] = 1
arr[0][1] = 2
arr[0][2] = 3
arr[1][0] = 4
arr[1][1] = 5
arr[1][2] = 6
arr[2][0] = 7
arr[2][1] = 8
arr[2][2] = 9

```

```

    1  2  3
    4  5  6
    7  8  9

```

```
1 , 3 , 5 , 7 , 9 ,
```

```
-----
```

Process exited after 6.668 seconds with return value 0

Для продолжения нажмите любую клавишу . . .

4.3 n gacha bolgan toq sonlarni kvadratlar yegindisini hisoblovchi dastur tuzing

DASTUR KODI:

```
#include <iostream>

using namespace std;

int funk(int n);

int main()
{
    int n;

    cout<<"n ni kriting\n";

    cin>>n;

    cout<<"natija >>> "<<funk(n)<<endl;
}

int funk(int n)
{
    int qadam=1,yegindi;

    while(qadam<n){

        yegindi=yegindi+qadam*qadam;

        qadam+=2;

    }

    return yegindi;
}DASYUR NATIJASI:
```

```
n ni kriting
8
natija >>> 85
```

```
-----
Process exited after 2.446 seconds with return value 0
Для продолжения нажмите любую клавишу . . .
```

5. Massivlar va ular bilan ishlash (Ixtiyoriy tanlangan 1-2 ta topshiriq – 1 ball).

Masala: 5.1

Foydalanuvchi ikki o'lchamli massivni o'lchamlarini ($a \times b$) va elementlarini kiritadi. Siz quyidagilarni bajarishingiz kerak:

1. Massivning barcha elementlarining o'rta qiymatini toping (hamma elementlarning yig'indisini elementlar soniga bo'ling).
2. Har bir elementni shu o'rta qiymatdan kattami yoki kichikmi ekanligini aniqlang va quyidagicha massivni yangilang:
 - Agar element o'rta qiymatdan kichik bo'lsa, uni 2 baravar oshiring.
 - Agar element o'rta qiymatdan katta yoki teng bo'lsa, uni 2 ga bo'ling.
3. Natijada hosil bo'lgan massivni chop eting

DASTUR KODI:

```
#include <iostream>
```

```
#include <iomanip>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int a,b;
```

```
    cout<<"a = ";
```

```
    cin>>a;
```

```
    cout<<"b = ";
```

```
cin>>b;
```

```
float yegindi=0;
```

```
int olcham=a*b;
```

```
int arr[a][b];
```

```
for(int i=0;i<a;i++){
```

```
    for(int j=0;j<b;j++){
```

```
        cout<<"arr["<<i<<"]["<<j<<"] = ";
```

```
        cin>>arr[i][j];
```

```
        yegindi=yegindi+arr[i][j];
```

```
    }
```

```
}
```

```
float arr1[a][b];
```

```
float orta=yegindi/olcham;
```

```
for(int i=0;i<a;i++){
```

```
    for(int j=0;j<b;j++){
```

```
        if(arr[i][j]>orta){
```

```
            cout<<"katta >>> "<<arr[i][j]<<"/"<<"2 =
```

```
"<<arr[i][j]/2<<endl;
```

```
            arr1[i][j]=arr[i][j]/2;
```

```
        }
```

```
        else if(arr[i][j]<orta){
```



```

        cout<<"kichik >>> "<<arr[i][j]<<"*"<<"2 =
"<<arr[i][j]*2<<endl;

        arr1[i][j]=arr[i][j]*2;

    }

}

}

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

    for(int j=0;j<b;j++){

        cout<<setw(4)<<arr1[i][j];

    }

    cout<<endl;

}

return 0;

```

} DASTUR NATIJASI:

C:\-шёъ (D)\projekt\maruza mustaqil ish.exe

```

a = 2
b = 2
arr[0][0] = 1
arr[0][1] = 2
arr[1][0] = 3
arr[1][1] = 4
kichik >>> 1*2 = 2
kichik >>> 2*2 = 4
katta >>> 3/2 = 1
katta >>> 4/2 = 2
    2    4
    1    2

```

Process exited after 4.814 seconds with return value 0

Для продолжения нажмите любую клавишу . . . █

5.2

Foydalanuvchi tomonidan kiritilgan bir o'lchovli massivdagi maxsus shartga asoslanib yangi massiv tuzing.

Shartlar quyidagicha:

1. Agar element musbat bo'lsa, elementni ikki baravariga oshiring.
2. Agar element manfiy bo'lsa, elementning modulini oling.
3. Agar element 0 ga teng bo'lsa, uni 1 ga o'zgartiring

DASTUR KODI:

```
#include <iostream>

#include <iomanip>

using namespace std;

int main()

{

    int a;

    cout<<"masiv hadini kirintg >>> ";

    cin>>a;

    int msv[a];

    int msv1[a];

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

        cout<<"msv["<<i<<"] = ";

        cin>>msv[i];

        if(msv[i]>0) msv1[i]=msv[i]*2;

        else if(msv[i]<0){

            msv1[i]=msv[i]*(-1);
```

```

    }

    else msv1[i]=1;

}

cout<<"kiritgan masivingizga ozgartirishlar kiritldi"<<endl;

for(int j=0;j<a;j++){

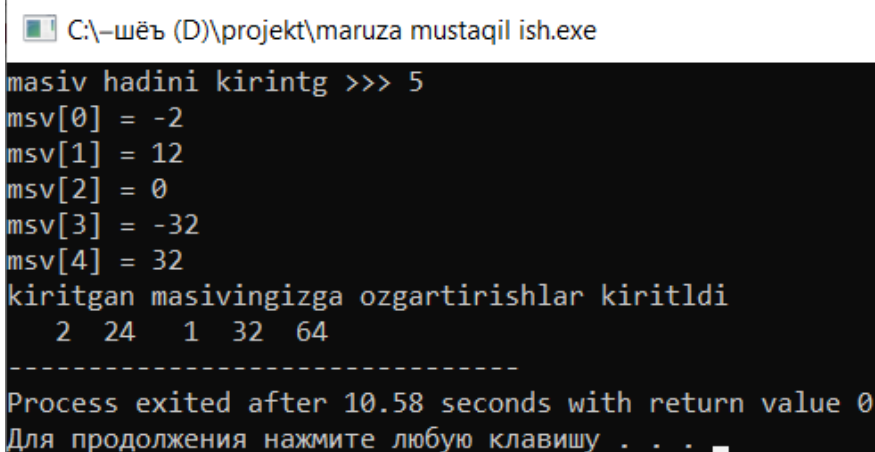
    cout<<setw(4)<<msv1[j];

}

return 0;

```

}DASTUR NATIJASI:



```

C:\-шѐъ (D)\projekt\maruza mustaqil ish.exe
masiv hadini kirintg >>> 5
msv[0] = -2
msv[1] = 12
msv[2] = 0
msv[3] = -32
msv[4] = 32
kiritgan masivingizga ozgartirishlar kiritldi
  2  24  1  32  64
-----
Process exited after 10.58 seconds with return value 0
Для продолжения нажмите любую клавишу . . .

```

6. Ko'rsatkichlar va dinamik xotira bilan ishlash. (Ixtiyoriy tanlangan 1-2 ta topshiriq – 1 ball).

6.1 Berilgan massivda faqat juft sonlarni aniqlang va ularning eng kattasini toping. Barcha hisob-kitoblar faqat pointerlar yordamida bajarilishi kerak

DASTUR KODI:

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```

{

    int n;

    cout<<"masivni elementlar sonini kirintg >>> ";

    cin>>n;

    int max=0;

    int *arr=new int[n];

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

        cout<<"arr["<<i<<" ] >> ";

        cin>>*(arr+i);

        //int max=0;

        if(*(arr+i)%2==0&&*(arr+i)>max) max=*(arr+i);


    }

    cout<<"masivdagi eng katta juft son >>> "<<max<<endl;

    return 0;

} DASTUR NATIJASI:

```

 C:\-шёь (D)\projekt\maruza mustaqil ish.exe

```

masivni elementlar sonini kirintg >>> 6
arr[0] >> 1
arr[1] >> 3
arr[2] >> 22
arr[3] >> -32
arr[4] >> 44
arr[5] >> 22222
masivdagi eng katta juft son >>> 22222

```

```

-----
Process exited after 17.06 seconds with return value 0
Для продолжения нажмите любую клавишу . . .

```

6.2: Berilgan massivning barcha juft indeksli elementlarini boshqa massivga ko'chiring. Yangi massivni hosil qilishda faqat pointerlardan foydalaning. Dastur oxirida har ikkala massivni ham ekranga chiqaradi

DASTUR KODI:

```
#include <iostream>

#include <iomanip>

using namespace std;

int main()
{
    int n;

    cout<<"n ni kiriting >>> ";

    cin>>n;

    int b=0;

    int *arr=new int[n];

    int *arr1=new int[n/2];

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

        cout<<"arr["<<i<<" ] >>> ";

        cin>>*(arr+i);

        if(i%2==0){

            *(arr1+b)=*(arr+i);

            b++;

        }

    }

    cout<<"masivlar saralandi !"<<endl;
```

```

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

    cout<<setw(4)<<*(arr+i);

}

cout<<endl;

for(int j=0;j<n/2;j++){

    cout<<setw(4)<<*(arr1+j);

}


delete []arr;

delete []arr1;

return 0;

```

} DASTUR NATIJASI:

 C:\-шёъ (D)\projekt\maruza mustaqil ish.exe

n ni kiriting >>> 6

arr[0] >>> 1

arr[1] >>> 2

arr[2] >>> 3

arr[3] >>> 4

arr[4] >>> 5

arr[5] >>> 6

masivlar saralandi !

1 2 3 4 5 6

1 3 5

Process exited after 6.646 seconds with return value 0

Для продолжения нажмите любую клавишу . . . ■

7. Satrlar va kengaytirilgan belgilar. (Ixtiyoriy tanlangan 1-2 ta topshiriq – 1 ball).

7.1: Foydalanuvchi kiritgan soʻzdagi har bir harfni teskari joylashtiring (masalan, katta harfni kichikka, kichik harfni katta harfga oʻzgartiring).

DASTUR KODI:

```
#include <iostream>
```

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

```
using namespace std;
```

```
int main()
```

```
{
```

```
    string matn;
```

```
    cout<<"matinni kirintg >>> ";
```

```
    getline(cin,matn);
```

```
    for(int i=0;i<matn.size();i++){
```

```
        if(isupper(matn[i])) matn[i]=tolower(matn[i]);
```

```
        else if(islower(matn[i])) matn[i]=toupper(matn[i]);
```

```
    }
```

```
    cout<<"matninigizga ozgartirish kiritildi >>> "<<matn<<endl;
```

```
    return 0;
```

}DASTUR NATIJASI:

C:\-шёъ (D)\projekt\maruza mustaqil ish.exe

```
matinni kirintg >>> salom MENNING ismim JAVOXIR
matninigizga ozgartirish kiritildi >>> SALOM menning ISMIM javoxir
```

```
-----
Process exited after 23.67 seconds with return value 0
```

```
Для продолжения нажмите любую клавишу . . . █
```

7.2: Matnni belgilarga bo'lib, raqamlarni chiqarish va qolgan harflarni katta-kichik qilib almashtirish

DASTUR KODI:

```
#include <iostream>

#include <ctype.h>

using namespace std;

int main()
{
    string raqam;
    string matn;
    cout<<"matinni kirintg >>> ";
    getline(cin,matn);
    for(int i=0;i<matn.size();i++){
        if(isdigit(matn[i])) raqam+=matn[i];
        else if(isupper(matn[i])) matn[i]=tolower(matn[i]);
        else if(islower(matn[i])) matn[i]=toupper(matn[i]);
    }
    cout<<"matinga ozgartirish kiritldi !!"<<endl;
    cout<<"raqamlar >>> "<<raqam<<endl;
    cout<<"harflar >>> "<<matn<<endl;
```

 C:\-шëь (D)\projekt\maruza mustaqil ish.exe

```
matinni kirintg >>> 2323 salom
matinga ozgartirish kiritldi !!
raqamlar >>> 2323
harflar >>> 2323 SALOM
```


8. Fayllar bilan ishlash. (Ixtiyoriy tanlangan 1-2 ta topshiriq – 1 ball)

8.1: • Foydalanuvchi tomonidan kiritilgan 5 ta sonni faylga yozing.

• Fayldan o'qib, ularning yig'indisini hisoblang va ekranga chiqarib bering.

DASTUR KODI:

```
#include <iostream>

#include <fstream>

using namespace std;

int main() {

    ofstream yozuvFayli("sonlar.txt");

    if (!yozuvFayli){

        cout<<"Faylni ochishda xatolik yuz berdi!"<<endl;

        return 1;

    }

    cout << "5 ta son kiriting:"<<endl;

    for (int i=0;i<5;i++){

        int son;

        cin>>son;

        yozuvFayli<<son<<endl;

    }

    yozuvFayli.close();

    ifstream oquvFayli("sonlar.txt");

    if(!oquvFayli){

        cout<<"Faylni ochishda xatolik yuz berdi!"<<endl;

        return 1;
```

```

    }

    int yigindi=0,son;

    while (oquvFayli>>son) {

        yigindi+=son;

    }

    oquvFayli.close();

    cout<<"Kiritilgan sonlarning yig'indisi >>> " <<yigindi<<endl;

    return 0;

}DASTUR NATIJASI:

```

```

5 ta son kiriting:
1
2
3
4
5
Kiritilgan sonlarning yig'indisi >>> 15

-----
Process exited after 4.23 seconds with return value 0
Для продолжения нажмите любую клавишу . . .

```

9. Saralash algoritmlari. (Ixtiyoriy tanlangan 1-2 ta topshiriq – 1 ball).

9.1: • Foydalanuvchi tomonidan kiritilgan 7 ta sonni faylga yozing.

- Fayldan sonlarni o'qib, ularni o'sish tartibida saralang.
- Saralangan sonlarni ekranga va yangi faylga yozing

DASTUR KODI:

```

#include <iostream>

#include <fstream>

using namespace std;

```

```
int main() {  
    ofstream yozuvFayli("sonlar.txt");  
    if (!yozuvFayli){  
        cout<<"Faylni ochishda xatolik yuz berdi!"<<endl;  
        return 1;  
    }  
    int sonlar[7];  
    cout<<"7 ta son kiriting:"<<endl;  
    for (int i=0;i<7;i++){  
        cin>>sonlar[i];  
        yozuvFayli<<sonlar[i]<<endl;  
    }  
    yozuvFayli.close();  
    ifstream oquvFayli("sonlar.txt");  
    if(!oquvFayli){  
        cout<<"Faylni ochishda xatolik yuz berdi!"<<endl;  
        return 1;  
    }  
    for (int i=0;i<7;i++){  
        oquvFayli>>sonlar[i];  
    }  
    oquvFayli.close();  
    for (int i=0;i<7-1;i++){
```

```

    for (int j=0;j<7-i-1;j++){
        if (sonlar[j]>sonlar[j+1]){
            int temp = sonlar[j];
            sonlar[j]=sonlar[j+1];
            sonlar[j+1]=temp;
        }
    }
}

ofstream saralanganFayl("saralangan_sonlar.txt");
if (!saralanganFayl){
    cout<<"Saralangan faylni ochishda xatolik yuz berdi!"<<endl;
    return 1;
}

cout << "Saralangan sonlar:" << endl;
for (int i=0;i<7;i++){
    cout<<sonlar[i]<< " ";
    saralanganFayl<<sonlar[i]<<endl;
}

saralanganFayl.close();
return 0;
}

```

DASTUR NATIJASI:

```
7 ta son kiriting:
1
2
23
12
23
54
66
Saralangan sonlar:
1 2 12 23 23 54 66
-----
Process exited after 7.872 seconds with return value 0
Для продолжения нажмите любую клавишу . . .
```

10. Ob'yektga yo'naltirilgan dasturlash. Sinf(class) va ob'yektlar yaratish. (Ixtiyoriy tanlangan 1 ta topshiriq – 1 ball).

10.1:• Talaba nomli sinf (class) yarating.

- **Sinfda talabaga tegishli quyidagi ma'lumotlar bo'lsin:**
 - **Ismi**
 - **Yoshi**
 - **Bahosi**

- **Talabalar haqida ma'lumot kiritish va ekranga chiqarish uchun metodlar (funksiyalar) yarating.**
- **3 ta talabani kiritib, ularning ma'lumotlarini ekranga chiqaring.**

DASTUR KODI:

```
#include <iostream>
```

```
#include <string>
```

```
using namespace std;
```

```
class Talaba {
```

```
private:
```

```
    string ism;
```

```
    int yosh;
```

```


    double baho;

public:
    void setMalumot(string i, int y, double b) {
        ism=i;
        yosh=y;
        baho=b;
    }
    void chiqar()const {
        cout<<"Ism: "<<ism<<"", Yosh: "<<yosh<<"", Bahosi:
"<<baho<<endl;
    }
};

int main() {
    Talaba talaba1, talaba2, talaba3;
    talaba1.setMalumot("Ali", 20, 86.5);
    talaba2.setMalumot("Vali", 21, 92.0);
    talaba3.setMalumot("Dilnoza", 19, 88.3);
    cout << "Talabalar haqida ma'lumot:" << endl;
    talaba1.chiqar();
    talaba2.chiqar();
    talaba3.chiqar();
    return 0;
}

```

DASTUR NATIJASI:

 C:\-шёъ (D)\projekt\maruza mustaqil ish.exe

Talabalar haqida ma'lumot:

Ism: Ali, Yosh: 20, Bahosi: 86.5

Ism: Vali, Yosh: 21, Bahosi: 92

Ism: Dilnoza, Yosh: 19, Bahosi: 88.3

Process exited after 0.04091 seconds with return value 0

Для продолжения нажмите любую клавишу . . .