Лаб 3

Сортування литтям

program gena;

 {zluttja}

const n=8;

type mas=array[1..n] of integer;

var x1,x2:mas;

 i:integer;

Function riz(mas:mas):integer;

 var i,j,count:integer;

 begin

 count:=1;

 j:=2;

 while(j<=N) do

 begin

 {j:=i+1;}

 while(j<=N) and (mas[j-1]=mas[j]) do

 inc(j);

 if j>N then break;

 inc(count);

 inc(j);

 end;

 riz:=count

 end;

procedure mrg(var y,x:mas; m,s,r:integer);

var mr,k,i,j,por,obm:integer;

begin

 mr:=m+s;

 i:=m;

 j:=mr;

 for k:=m to m+s+r-1 do

 if i>m+s-1 then

 begin

 x[k]:=y[j];

 j:=j+1;

 end

 else

 if j>mr+r-1 then

 begin

 x[k]:=y[i];

 i:=i+1;

 end

 else if y[i]>y[j] then

 begin

 x[k]:=y[i];

 i:=i+1;

 end

 else

 begin

 x[k]:=y[j];

 j:=j+1;

 end;end;

 procedure Mrg\_rec(var a,b:mas; l,r:integer);

 var m,k:integer;

 begin

 if l>=r then exit;

 m:=(l+r) div 2;

 Mrg\_rec(a,b,l,m);

 Mrg\_rec(a,b,m+1,r);

 mrg(a,b,l,m-l+1,r-m);

 for k:=1 to r do

 a[k]:=b[k];

 end;

begin

for i:=1 to n do

read(x1[i]);

mrg\_rec(X1,X2,1,n);

writeln;

 for i:=1 to n do

 writeln(x1[i]);

 readln; writeln('sortyvannja vukonano!');

 writeln('kilkistj riznuh elementiv: ',riz(x1));

 readln;

end.

Сортування вставкою

#include <stdio.h>

#include <conio.h>

int DifferentEl(int \*mas,int kst);

void selection(int \*array, int length);

int main(void)

{

int mas1[10];

int n,i,j;

puts("sortyvannja vuborom");

puts("vveditj kilkistj elementiv sortyvannja");

scanf("%d",&n);

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

 scanf("%d",&mas1[i]);

selection(mas1,n);

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

printf("%d ",mas1[i]);

printf("\nDifferent elements %d",DifferentEl(mas1,n));

getch();

return 0;

}

int DifferentEl(int \*mas,int kst)

{ int ii,jj,nn=kst;

for(ii=0;ii<kst;ii++)

 {

 for(jj=ii+1;jj<kst;jj++)

 {

 if(mas[ii]==mas[jj])

 {nn--;

 break;}

 }

 }

 return nn;

}

void selection(int \*array, int length)

{

 int max, i, temp;

 while(length > 0) {

 max = 0;

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

 if (array[i] > array[max])

 max = i;

 temp = array[length-1];

 array[length-1] = array[max];

 array[max] = temp;

 length--;

 }

 }

Лаб 4

program talglab4;

var xo,yo,xa,ya,xb,yb : integer ;

a,b,c,s,hor,rez,rezult,l,kyt: real;

p,z,grad:double;

r:byte;

beta:single;

function ArcSin ( s : double ): double;

 begin

 if s = 1.0 then { to avoid division by 0 }

ArcSin := Pi / 2.0

 else

ArcSin := ArcTan ( s / Sqrt ( 1 - s \* s ) );

 end;

begin

writeln('vveditj koordunatu centra kola xo');

readln(xo,yo);

writeln('vveditj koordunatu prjamoji');

readln(xa,ya,xb,yb);

writeln('vveditj radius kola');

readln(r);

 a:=sqrt(sqr(xb-xo)+sqr(yb-yo)); {znahod\*y vidstanj mi\* to4kamu}

 b:=sqrt(sqr(xa-xo)+sqr(ya-yo));

 c:=sqrt(sqr(xb-xa)+sqr(yb-ya));

writeln('Dov\*unu storin trukytnuka',a:10:3,' ',b:10:3,' ',c:10:3);

p:=a\*(sqrt(1-(sqr((b\*b-a\*a-c\*c)/(-2\*a\*c)))));

writeln('dov\*una perpendukyljara',p:10:3);

if p<=r then writeln('prjama le\*utj na koli')

 else writeln('prjama i kolo ne peretunajutsja');

 s:=p/r;

 hor:=(r\*r-2\*r\*p+p\*p)\*2;

 readln;

 rez:=ArcSin(s);

 rezult:=rez\*57.29;

 kyt:=(180-90-rezult)\*2;

 writeln('kyt rivnuj',kyt:10:3);

 writeln('p', p:10:3);

 writeln('radius kola', r);

 writeln('rez:',rez:10:3);

 l:=(2\*3.14\*r\*kyt)/360;

 writeln('dov\*una hordu', l:5:3);

 readln;

end.

Лаба 5

#include <stdio.h>

#include <conio.h>

#define N 5 // Kilkist chysel

int main (void) {

int arr[N]={NULL}; //masyv vvedenyh chysel

int i,j;

int ch=0; //chyslo shcho shukaemo

int per=1; //kilkist perevirok

clrscr();

printf("VVedit %d elementiv masyvu\n",N);

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

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

}

printf("Robymo poshuk doky vvodiat`sia chysla\n");

printf("Shcho shukaemo?\n");

while (scanf("%d",&ch)) {

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

 if (ch==arr[i]) {

 printf("Znajdeno za %d ",per);

 if (per%10==1) printf("perevirku\n");

 else

 if ((per%10>1) && (per%10<5)) printf("perevirky\n");

 else

 if ((per%10>=5) || (per%10==0)) printf("perevirok\n");

 printf("Shcho dali shukaemo?\n");

 per=1;

 if (i>0) {

 ch=arr[0];

 arr[0]=arr[i];

 arr[i]=arr[i-1];

 for(j=i-1; j>0; j--) {

 arr[j+1]=arr[j];

 }

 arr[1]=ch;

 }

 break;

 }

 else per++;

}

 return 0;

}

Лаба 2

uses crt;

var

b : string;

d2,d1,d3,d4,d5:word;

a,pc,ost:word;

s:string;

function DEC\_BIN(x:word):string;

const digits:array [0..1] of char = ('0','1');

var res:string; d:0..1;

begin

 res:='';

 while (x<>0) do begin

 d:=x mod 2; res:=digits[d]+res;

 x:=x div 2;

 end;

 DEC\_BIN:=res;

end;

begin

 writeln('vveditj dovge desjatkove cuslo a= ');

 readln( a );

 writeln( DEC\_BIN(a) );

d1:=a shl 1;

writeln( DEC\_BIN(d1) );

d2:=d1 or a;

writeln( DEC\_BIN(d2) );

d1:=d2 shl 2;

writeln( DEC\_BIN(d1) );

d2:=d1 or d2;

writeln( DEC\_BIN(d2) );

d1:=d2 shl 4;

writeln( DEC\_BIN(d1) );

d2:=d1 or d2;

writeln( DEC\_BIN(d2) );

d3:=d2 shl 1;

writeln( DEC\_BIN(d3) );

d4:=d2 and d3;

writeln( DEC\_BIN(d4) );

d5:=a and d4;

writeln( DEC\_BIN(d5) );

ost:=d5;

writeln ('ost: ',ost);

readln;

end.