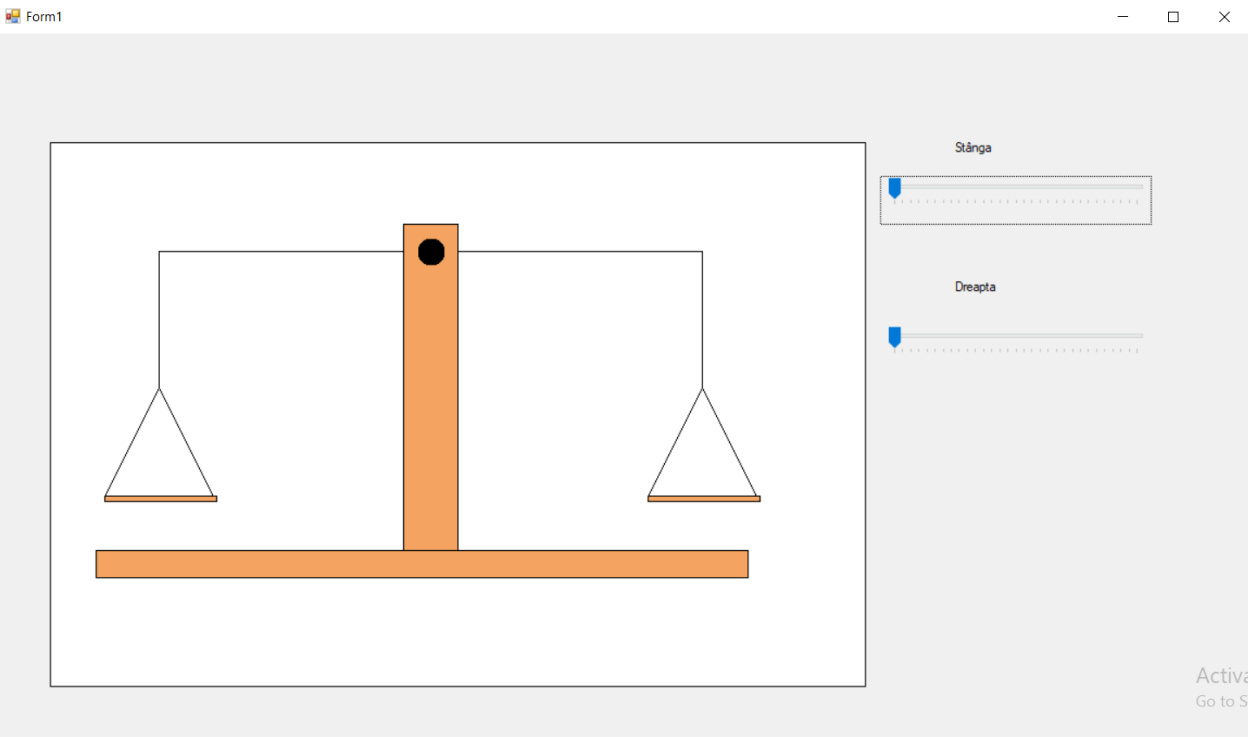
Lucrare finală

Prezentarea aplicației

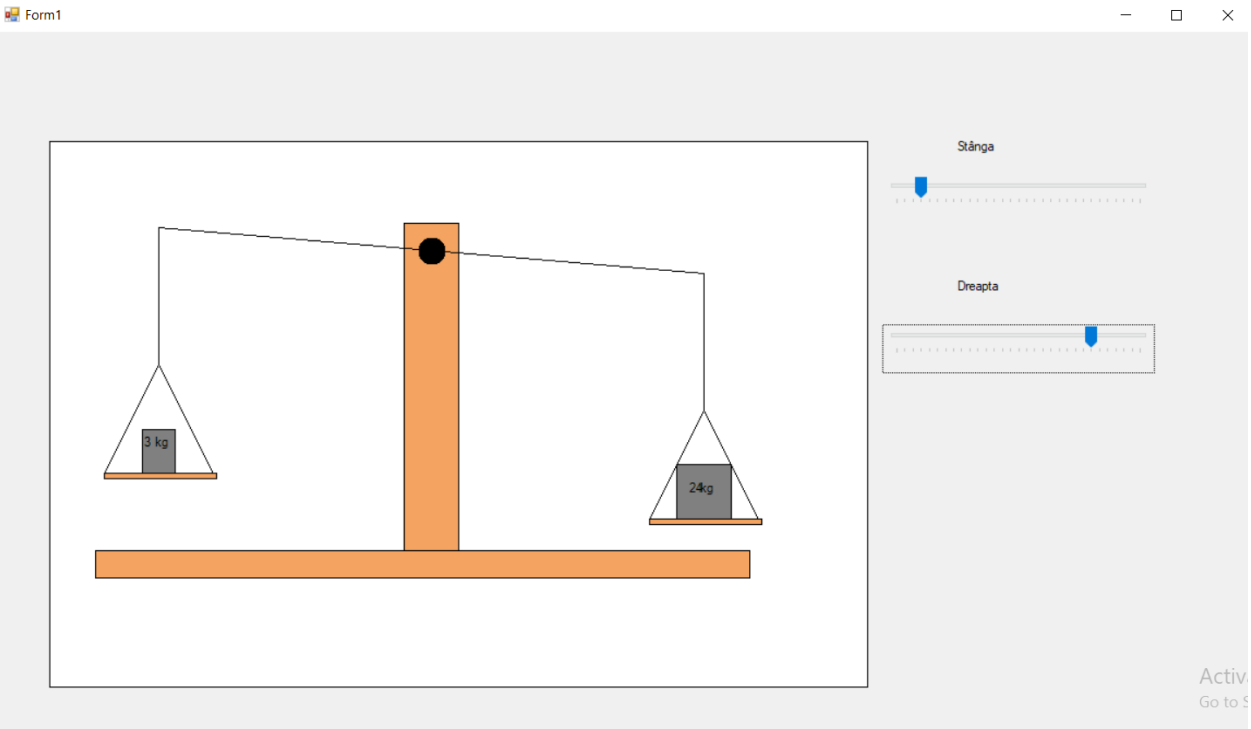
În ceastă aplicație , realizată în Visual Studio 2022, folosind limbajul de programare C# , am creat o clasă care simulează funcționarea unui cântar .

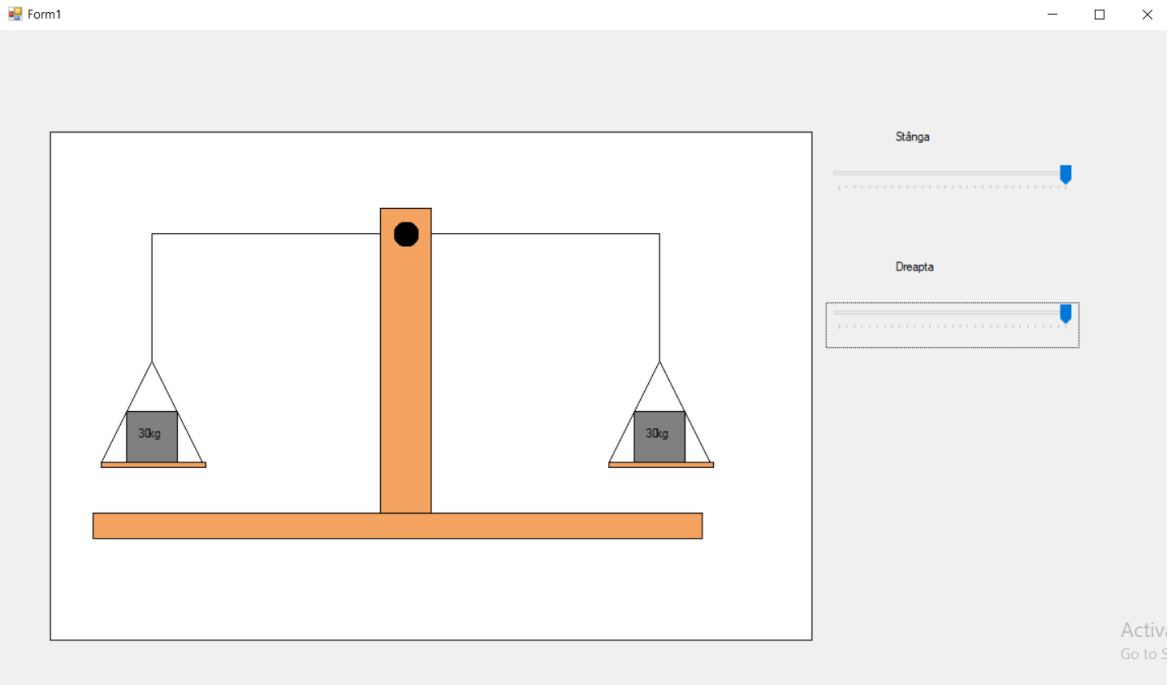
Este ușor de utilizat deoarece . La dreapta se află două TrackBaruri cu care putem regla greutățile pe ambele părți.

La început nu se află greutate pe cântar ,valoarea de laTrackBaruri fiind 0.

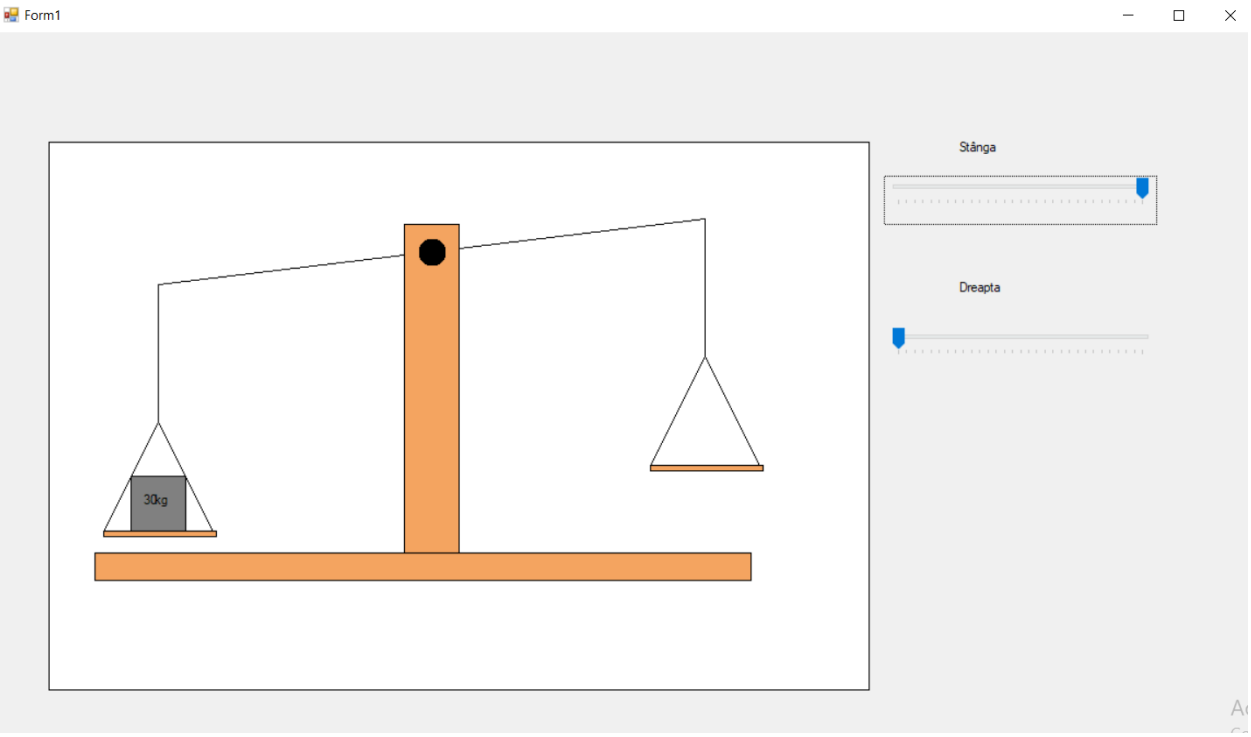


La modificarea TrackBarurilor , apar greutăți de diferite mărimi , în funcție de greutatea lor .În poza de mai jos se vede că partea stângă este mai ușor .





Dacă careva dintre TrackBaruri este modificat la 0 , greutatea dispare de pe cântar .



Codul sursă

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace lucrareafinala2
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
```

```
        }
        System.Drawing.Graphics desen;
        System.Drawing.SolidBrush pensula_gri;
        System.Drawing.SolidBrush pensula_alb;
        System.Drawing.SolidBrush pensula_n;
        System.Drawing.SolidBrush pensula_maro;
        System.Drawing.Pen creion_negru;
        System.Drawing.SolidBrush pensula_a;
        public echilibru cantar;
        int m, x1 = 150, y1 = 200, x2 = 650, y2 = 200;
        int a, i ,j ,b;

      private void Form1_Paint(object sender, PaintEventArgs e)
        {

        }

        private void Form1_Load(object sender, EventArgs e)
        {
            desen = this.CreateGraphics();
            pensula_gri = new System.Drawing.SolidBrush(System.Drawing.Color.Gray);
            pensula_alb = new System.Drawing.SolidBrush(System.Drawing.Color.White
);
            pensula_n = new System.Drawing.SolidBrush(System.Drawing.Color.Black);
            creion_negru = new System.Drawing.Pen(System.Drawing.Color.Black);
            pensula_maro = new
System.Drawing.SolidBrush(System.Drawing.Color.SandyBrown);
            pensula_a = new
System.Drawing.SolidBrush(System.Drawing.Color.LightBlue);
            cantar= new echilibru();
        }



        private void timer1_Tick(object sender, EventArgs e)
        {
            int x = x2 - x1;
            int y = y2 - y1;
           a = this.trackBar1.Value;
           b = this.trackBar2.Value;

            cantar.sterg(desen, pensula_alb,creion_negru , x1, y1,x);

            if (a < b)
            {
                cantar.sterg(desen, pensula_alb,creion_negru , x1, y1,x);
                cantar.draw(desen,Font,
creion_negru,pensula_maro,pensula_n,pensula_gri  , x1, y1-(b-a), x2, y2+(b-a) ,a,
b,x2-x1,x1,y1);
                cantar.setval(desen, creion_negru, x1, y1, x2, y2, b - a, a, b);
            }
            else
            {
                cantar.sterg(desen, pensula_alb, creion_negru, x1, y1,x);
                cantar.setval(desen, creion_negru, x1, y1 ,x2, y2, a-b, a, b);
                cantar.draw(desen,Font, creion_negru,pensula_maro
,pensula_n,pensula_gri   , x1, y1 + (a - b), x2, y2-(a-b), a,b, x2-x1,x1,y1);
            }
```

```
        }
        public class echilibru
        {
          public void  setval(System.Drawing.Graphics zona_des, Pen creion,int x1,
int y1, int x2, int y2,int m,int a, int b)
          {
                if (a < b)

                        zona_des.DrawLine(creion, x1, y1 - m, x2, y2 + m);

                else

                        zona_des.DrawLine(creion, x1, y1 + m, x2, y2 - m);



            }
            public void sterg (System.Drawing.Graphics zona_des, SolidBrush
pensula,Pen creion,int x1,int y1,int x)
            {
                zona_des.FillRectangle(pensula, x1-x/5, y1-x/5, x+x/2,x);
                zona_des.DrawRectangle(creion, x1 - x / 5, y1 - x / 5, x + x / 2,
x);

            }
            public void draw(System.Drawing.Graphics zona_des, System.Drawing.Font
f, Pen creion,SolidBrush pensulamaro,SolidBrush  pensulan,SolidBrush pensulagri, int
x1, int y1, int x2, int y2, int a, int b,int x,int pozx,int pozy)
            {
                zona_des.DrawLine(creion, x1, y1, x1, y1 + x/4);
                zona_des.DrawLine(creion, x2, y2, x2, y2 + x/4);



                 zona_des.DrawLine(creion, x1 , y1 + x/4, x1-50 , y1 +x/4+100);
                zona_des.DrawLine(creion, x2, y2 + x / 4, x2 - 50, y2 + x / 4 +
100);

                zona_des.DrawLine(creion, x1, y1 + x / 4, x1 + 50, y1 + x / 4 +
100);
                zona_des.DrawLine(creion, x2, y2 + x / 4, x2 + 50, y2 + x / 4 +
100);

                zona_des.FillRectangle(pensulamaro, x1 + 50-100, y1 + x / 4 + 100,
103, 5);
                zona_des.FillRectangle(pensulamaro, x2 + 50 - 100, y2 + x / 4 + 100,
103, 5);

                zona_des.DrawRectangle(creion, x1 + 50 - 100, y1 + x / 4 + 100, 103,
5);
                zona_des.DrawRectangle(creion, x2 + 50 - 100, y2 + x / 4 + 100, 103,
5);


                zona_des.FillRectangle(pensulamaro, pozx+x/2-x/20, pozy-x/20, x /
10, x/2+x/10 );
```

```
                zona_des.FillEllipse(pensulan, pozx + x / 2-x/40, pozy-x/40, x / 20,
x / 20);
                zona_des.DrawRectangle(creion, pozx + x / 2 - x / 20, pozy - x / 20,
x / 10, x / 2+x/10);
                zona_des.FillRectangle(pensulamaro, pozx - x / 10-8, pozy + x / 2 -
x / 20 + x / 10, x + x / 5, x / 20);
                zona_des.DrawRectangle(creion, pozx - x / 10 - 8, pozy + x / 2 - x /
20 + x / 10, x + x / 5, x / 20);

                if ((a <= 10) && (a != 0))
                {
                    zona_des.FillRectangle(pensulagri, x1 - 15, y1 + x / 4 + 100 -
40, 30, 40);
                    zona_des.DrawRectangle (creion , x1 - 15, y1 + x / 4 + 100 - 40,
30, 40);
                }

                if ((b <= 10) && (b != 0))
                {
                    zona_des.FillRectangle(pensulagri, x2 - 15, y2 + x / 4 + 100 -
40, 30, 40);
                    zona_des.DrawRectangle(creion, x2 - 15, y2 + x / 4 + 100 - 40,
30, 40);
                }
                if ((a <= 20) && (a >= 10))
                {
                    zona_des.FillRectangle(pensulagri, x1 - 20, y1 + x / 4 + 100 -
50, 40, 50);
                    zona_des.DrawRectangle (creion , x1 - 20, y1 + x / 4 + 100 - 50,
40, 50);
                }
                if ((b <= 20) && (b >= 10))
                {
                    zona_des.FillRectangle(pensulagri, x2 - 20, y2 + x / 4 + 100 -
50, 40, 50);
                    zona_des.DrawRectangle(creion, x2 - 20, y2 + x / 4 + 100 - 50,
40, 50);
                }

                if ((a <= 30) && (a >= 20))
                {
                    zona_des.FillRectangle(pensulagri, x1 - 25, y1 + x / 4 + 100 -
50, 50, 50);
                    zona_des.DrawRectangle (creion, x1 - 25, y1 + x / 4 + 100 - 50,
50, 50);
                }
                if ((b <= 30) && (b >= 20))
                {
                    zona_des.FillRectangle(pensulagri, x2 - 25, y2 + x / 4 + 100 -
50, 50, 50);
                    zona_des.DrawRectangle(creion, x2 - 25, y2 + x / 4 + 100 - 50,
50, 50);


                }
                if(a != 0)
                {
```

```
                    zona_des.DrawString(System.Convert.ToString(a), f, pensulan, x1
- 15, y1 + x / 4 + 100 - 40+5);
                    zona_des.DrawString(System.Convert.ToString("kg"), f, pensulan,
x1 - 15 + 10, y1 + x / 4 + 100 - 40+5);
                }
                if (b != 0)
                {
                    zona_des.DrawString(System.Convert.ToString(b), f, pensulan, x2
- 15, y2 + x / 4 + 100 - 40+5);
                    zona_des.DrawString(System.Convert.ToString("kg"), f, pensulan,
x2 - 15 + 10, y2 + x / 4 + 100 - 40+5);
                }

            }



        }
    }
}
```