



ภาคผนวก

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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ตารางที่ ก แสดงกฎพื้นฐาน

	D_0	S_e	Ea	En	rule1 70:30	rule2 50:50	rule3 60:40
1	H	H	H	G	D	D	D
2	H	H	M	G	D	D	D
3	H	H	L	G	D	D	D
4	H	H	H	M	D	B	D
5	H	H	M	M	D	D	D
6	H	H	L	M	D	D	D
7	H	H	H	B	B	B	B
8	H	H	M	B	D	B	D
9	H	H	L	B	D	D	D
10	H	H	H	VB	B	U	B
11	H	H	M	VB	B	B	B
12	H	H	L	VB	D	B	D
13	H	M	H	G	D	D	D
14	H	M	M	G	D	D	D
15	H	M	L	G	D	D	D
16	H	M	H	M	D	D	D
17	H	M	M	M	D	D	D
18	H	M	L	M	D	D	D
19	H	M	H	B	D	B	D
20	H	M	M	B	D	D	D
21	H	M	L	B	D	D	D
22	H	M	H	VB	D	B	B
23	H	M	M	VB	D	B	D
24	H	M	L	VB	D	D	D
25	H	L	H	G	D	D	D
26	H	L	M	G	D	D	D

	D_0	S_e	Ea	En	rule1 70:30	rule2 50:50	rule3 60:40
27	H	L	L	G	D	D	D
28	H	L	H	M	D	D	D
29	H	L	M	M	D	D	D
30	H	L	L	M	D	D	D
31	H	L	H	B	D	D	D
32	H	L	M	B	D	D	D
33	H	L	L	B	D	D	D
34	H	L	H	VB	D	B	D
35	H	L	M	VB	D	D	D
36	H	L	L	VB	D	D	D
37	M	H	H	G	B	B	B
38	M	H	M	G	D	D	D
39	M	H	L	G	D	D	D
40	M	H	H	M	B	B	B
41	M	H	M	M	B	B	B
42	M	H	L	M	D	D	D
43	M	H	H	B	B	U	B
44	M	H	M	B	B	B	B
45	M	H	L	B	B	B	B
46	M	H	H	VB	U	U	U
47	M	H	M	VB	B	U	B
48	M	H	L	VB	B	B	B
49	M	M	H	G	D	D	D
50	M	M	M	G	D	D	D
51	M	M	L	G	D	D	D
52	M	M	H	M	D	B	D
53	M	M	M	M	D	D	D

	D_0	S_e	Ea	En	rule1 70:30	rule2 50:50	rule3 60:40
54	M	M	L	M	D	D	D
55	M	M	H	B	B	B	B
56	M	M	M	B	D	B	D
57	M	M	L	B	D	D	D
58	M	M	H	VB	B	U	B
59	M	M	M	VB	B	B	B
60	M	M	L	VB	D	B	D
61	M	L	H	G	D	D	D
62	M	L	M	G	D	D	D
63	M	L	L	G	D	D	D
64	M	L	H	M	D	D	D
65	M	L	M	M	D	D	D
66	M	L	L	M	D	D	D
67	M	L	H	B	D	B	D
68	M	L	M	B	D	D	D
69	M	L	L	B	D	D	D
70	M	L	H	VB	D	B	B
71	M	L	M	VB	D	B	D
72	M	L	L	VB	D	D	D
73	L	H	H	G	B	B	B
74	L	H	M	G	B	B	B
75	L	H	L	G	B	D	D
76	L	H	H	M	U	U	U
77	L	H	M	M	B	B	B
78	L	H	L	M	B	B	B
79	L	H	H	B	U	U	U
80	L	H	M	B	U	U	U

	D_0	S_e	Ea	En	rule1 70:30	rule2 50:50	rule3 60:40
81	L	H	L	B	B	B	B
82	L	H	H	VB	U	UU	U
83	L	H	M	VB	U	U	U
84	L	H	L	VB	U	U	U
85	L	M	H	G	B	B	B
86	L	M	M	G	D	D	D
87	L	M	L	G	D	D	D
88	L	M	H	M	B	B	B
89	L	M	M	M	B	B	B
90	L	M	L	M	D	D	D
91	L	M	H	B	B	U	B
92	L	M	M	B	B	B	B
93	L	M	L	B	B	B	B
94	L	M	H	VB	U	U	U
95	L	M	M	VB	B	U	B
96	L	M	L	VB	B	B	B
97	L	L	H	G	D	D	D
98	L	L	M	G	D	D	D
99	L	L	L	G	D	D	D
100	L	L	H	M	D	B	D
101	L	L	M	M	D	D	D
102	L	L	L	M	D	D	D
103	L	L	H	B	B	B	B
104	L	L	M	B	D	B	D
105	L	L	L	B	D	D	D
106	L	L	H	VB	B	B	B
107	L	L	M	VB	B	B	B

	D_0	S_e	Ea	En	rule1 70:30	Rule2 50:50	rule3 60:40
108	L	L	L	VB	D	B	D
109	N	H	H	G	U	U	U
110	N	H	M	G	U	B	B
111	N	H	L	G	U	B	B
112	N	H	H	M	U	U	U
113	N	H	M	M	U	U	U
114	N	H	L	M	U	B	B
115	N	H	H	B	UU	UU	UU
116	N	H	M	B	U	U	U
117	N	H	L	B	U	U	U
118	N	H	H	VB	UU	UU	UU
119	N	H	M	VB	UU	UU	UU
120	N	H	L	VB	U	U	U
121	N	M	H	G	B	B	B
122	N	M	M	G	B	B	B
123	N	M	L	G	B	D	D
124	N	M	H	M	U	U	U
125	N	M	M	M	B	B	B
126	N	M	L	M	B	B	B
127	N	M	H	B	U	U	U
128	N	M	M	B	U	U	U
129	N	M	L	B	B	B	B
130	N	M	H	VB	U	UU	U
131	N	M	M	VB	U	U	U
132	N	M	L	VB	U	U	U
133	N	L	H	G	B	B	B
134	N	L	M	G	D	D	D

	D_0	S_e	Ea	En	rule1 70:30	rule2 50:50	rule3 60:40
135	N	L	L	G	D	D	D
136	N	L	H	M	B	B	B
137	N	L	M	M	B	B	B
138	N	L	L	M	D	D	D
139	N	L	H	B	B	B	B
140	N	L	M	B	B	B	B
141	N	L	L	B	B	B	B
142	N	L	H	VB	B	B	B
143	N	L	M	VB	B	B	B
144	N	L	L	VB	B	B	B

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คำสั่งในการเขียนโปรแกรม
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Text;
using System.Windows.Forms;
namespace WindowsApplication1
{
    public partial class Form1 :
    Form
    {
        public Form1()
        {
            InitializeComponent();
        }
        double factor1;
        double factor2;
        double factor3;
        double factor4;
        string[,] listLing = new
string[20, 5];
        double[,] listLingVal = new
double[20, 5];
        string[,] ling = new string[5,
5];
        double[,] lingVal = new
double[5, 5];
        string[] list = new string[20];
        double[] minRule = new
double[20];
        string[] outputT1 = new
string[20];
        string[] outputT2 = new
string[20];
        string[] outputT3 = new
string[20];
        double d1, d2, d3;
        double b1, b2, b3;
        double u1, u2, u3;
        double uu1, uu2, uu3;
        private void checkFactor()
        {
            if (factor1 < -20 || factor1 >
100)
            {
                MessageBox.Show(" ค่าที่ใส่ไม่อยู่
ในช่วงที่ฟังก์ชันที่คำนวณได้ จากปัจจัยที่ 1 ", "Input
ไม่อยู่ในช่วงการคำนวณ");
                return;
            }
            else if (factor2 < 0 || factor2 >
1500)
            {
                MessageBox.Show(" ค่าที่ใส่ไม่อยู่
ในช่วงที่ฟังก์ชันที่คำนวณได้ จากปัจจัยที่ 2 ", "Input
ไม่อยู่ในช่วงการคำนวณ");
                return;
            }
            else if (factor3 < 0 || factor3 > 1)
            {
                MessageBox.Show(" ค่าที่ใส่ไม่อยู่
ในช่วงที่ฟังก์ชันที่คำนวณได้ จากปัจจัยที่ 3 ", "Input
ไม่อยู่ในช่วงการคำนวณ");
                return;
            }
            else if (factor4 < 0 || factor1 > 400)
            {
                MessageBox.Show(" ค่าที่ใส่ไม่อยู่
ในช่วงที่ฟังก์ชันที่คำนวณได้ จากปัจจัยที่ 4 ", "Input
ไม่อยู่ในช่วงการคำนวณ");
                return;
            }
        }
        private void cartesianProduct()
        {
            #region ผลคูณคาร์ทีเซียนของภาษาและ
สมาชิก
            for (int i = 1; i <= 16; i++)
            {
                if (i <= 8)
                {
                    listLing[i, 1] = ling[1, 1];
                    listLingVal[i, 1] = lingVal[1,
1];
                }
            }
        }
    }
}

```



```

mem21.Text = listLingVal[2, 1].ToString(); ;
mem22.Text = listLingVal[2, 2].ToString(); ;
mem23.Text = listLingVal[2, 3].ToString(); ;
mem24.Text = listLingVal[2, 4].ToString(); ;

mem31.Text = listLingVal[3, 1].ToString(); ;
mem32.Text = listLingVal[3, 2].ToString(); ;
mem33.Text = listLingVal[3, 3].ToString(); ;
mem34.Text = listLingVal[3, 4].ToString(); ;

mem41.Text = listLingVal[4, 1].ToString(); ;
mem42.Text = listLingVal[4, 2].ToString(); ;
mem43.Text = listLingVal[4, 3].ToString(); ;
mem44.Text = listLingVal[4, 4].ToString(); ;

mem51.Text = listLingVal[5, 1].ToString(); ;
mem52.Text = listLingVal[5, 2].ToString(); ;
mem53.Text = listLingVal[5, 3].ToString(); ;
mem54.Text = listLingVal[5, 4].ToString(); ;

mem61.Text = listLingVal[6, 1].ToString(); ;
mem62.Text = listLingVal[6, 2].ToString(); ;
mem63.Text = listLingVal[6, 3].ToString(); ;
mem64.Text = listLingVal[6, 4].ToString(); ;

mem71.Text = listLingVal[7, 1].ToString(); ; mem72.Text = listLingVal[7, 2].ToString(); ;
mem73.Text = listLingVal[7, 3].ToString(); ; mem74.Text = listLingVal[7, 4].ToString(); ;

mem81.Text = listLingVal[8, 1].ToString(); ; mem82.Text = listLingVal[8, 2].ToString(); ;
mem83.Text = listLingVal[8, 3].ToString(); ; mem84.Text = listLingVal[8, 4].ToString(); ;

mem91.Text = listLingVal[9, 1].ToString(); ; mem92.Text = listLingVal[9, 2].ToString(); ;
mem93.Text = listLingVal[9, 3].ToString(); ; mem94.Text = listLingVal[9, 4].ToString(); ;

mem101.Text = listLingVal[10, 1].ToString(); ; mem102.Text = listLingVal[10, 2].ToString(); ;
mem103.Text = listLingVal[10, 3].ToString(); ; mem104.Text = listLingVal[10, 4].ToString(); ;

mem111.Text = listLingVal[11, 1].ToString(); ; mem112.Text = listLingVal[11, 2].ToString(); ;
mem113.Text = listLingVal[11, 3].ToString(); ; mem114.Text = listLingVal[11, 4].ToString(); ;

mem121.Text = listLingVal[12, 1].ToString(); ; mem122.Text = listLingVal[12, 2].ToString(); ;
mem123.Text = listLingVal[12, 3].ToString(); ; mem124.Text = listLingVal[12, 4].ToString(); ;

mem131.Text = listLingVal[13, 1].ToString(); ; mem132.Text = listLingVal[13, 2].ToString(); ;

```

```

        mem133.Text =
listLingVal[13, 3].ToString(); ;
        mem134.Text = listLingVal[13,
4].ToString(); ;

        mem141.Text =
listLingVal[14, 1].ToString(); ;
        mem142.Text = listLingVal[14,
2].ToString(); ;
        mem143.Text =
listLingVal[14, 3].ToString(); ;
        mem144.Text = listLingVal[14,
4].ToString(); ;

        mem151.Text =
listLingVal[15, 1].ToString(); ;
        mem152.Text = listLingVal[15,
2].ToString(); ;
        mem153.Text =
listLingVal[15, 3].ToString(); ;
        mem154.Text = listLingVal[15,
4].ToString(); ;

        mem161.Text =
listLingVal[16, 1].ToString(); ;
        mem162.Text = listLingVal[16,
2].ToString(); ;
        mem163.Text =
listLingVal[16, 3].ToString(); ;
        mem164.Text = listLingVal[16,
4].ToString(); ;
    }
    private void findMin()
    {
        for (int i = 1; i <= 16; i++)
        {
            minRule[i] = 0;
        }
        double buff;
        for (int i = 1; i <= 16; i++)
        {
            for (int j = 1; j <= 3; j++)
            {
                for (int k = j + 1; k <=
4; k++)
                    if (listLingVal[i, j] >
listLingVal[i, k])
                    {
                        buff = listLingVal[i, j];
                        listLingVal[i, j] =
listLingVal[i, k];
                        listLingVal[i, k] = buff;
                    }
            }
        }
    }
    private void showmin()
    {
        txtMin1.Text = listLingVal[1,
1].ToString();
        txtMin2.Text = listLingVal[2,
1].ToString();
        txtMin3.Text = listLingVal[3,
1].ToString();
        txtMin4.Text = listLingVal[4,
1].ToString();
        txtMin5.Text = listLingVal[5,
1].ToString();
        txtMin6.Text = listLingVal[6,
1].ToString();
        txtMin7.Text = listLingVal[7,
1].ToString();
        txtMin8.Text = listLingVal[8,
1].ToString();
        txtMin9.Text = listLingVal[9,
1].ToString();
        txtMin10.Text = listLingVal[10,
1].ToString();
        txtMin11.Text = listLingVal[11,
1].ToString();
        txtMin12.Text = listLingVal[12,
1].ToString();
        txtMin13.Text = listLingVal[13,
1].ToString();
        txtMin14.Text = listLingVal[14,
1].ToString();
        txtMin15.Text = listLingVal[15,
1].ToString();
        txtMin16.Text = listLingVal[16,
1].ToString();
    }
}

```

```

        minMum1.Text =
listLingVal[1, 1].ToString();
        minMum2.Text =
listLingVal[2, 1].ToString();
        minMum3.Text =
listLingVal[3, 1].ToString();
        minMum4.Text =
listLingVal[4, 1].ToString();
        minMum5.Text =
listLingVal[5, 1].ToString();
        minMum6.Text =
listLingVal[6, 1].ToString();
        minMum7.Text =
listLingVal[7, 1].ToString();
        minMum8.Text =
listLingVal[8, 1].ToString();
        minMum9.Text =
listLingVal[9, 1].ToString();
        minMum10.Text =
listLingVal[10, 1].ToString();
        minMum11.Text =
listLingVal[11, 1].ToString();
        minMum12.Text =
listLingVal[12, 1].ToString();
        minMum13.Text =
listLingVal[13, 1].ToString();
        minMum14.Text =
listLingVal[14, 1].ToString();
        minMum15.Text =
listLingVal[15, 1].ToString();
        minMum16.Text =
listLingVal[16, 1].ToString();
    }
    private void showOUTPUT()
    {
        textBox246.Text =
outputT1[1];
        textBox245.Text =
outputT1[2];
        textBox244.Text =
outputT1[3];
        textBox243.Text =
outputT1[4];
        textBox242.Text =
outputT1[5];
        textBox241.Text =
outputT1[6];
        textBox240.Text = outputT1[7];
        textBox239.Text = outputT1[8];
        textBox238.Text = outputT1[8];
        textBox237.Text = outputT1[10];
        textBox236.Text = outputT1[11];
        textBox235.Text = outputT1[12];
        textBox234.Text = outputT1[13];
        textBox233.Text = outputT1[14];
        textBox232.Text = outputT1[15];
        textBox231.Text = outputT1[16];
        textBox262.Text = outputT2[1];
        textBox261.Text = outputT2[2];
        textBox260.Text = outputT2[3];
        textBox259.Text = outputT2[4];
        textBox258.Text = outputT2[5];
        textBox257.Text = outputT2[6];
        textBox256.Text = outputT2[7];
        textBox255.Text = outputT2[8];
        textBox254.Text = outputT2[8];
        textBox253.Text = outputT2[10];
        textBox252.Text = outputT2[11];
        textBox251.Text = outputT2[12];
        textBox250.Text = outputT2[13];
        textBox249.Text = outputT2[14];
        textBox248.Text = outputT2[15];
        textBox247.Text = outputT2[16];
        textBox278.Text = outputT3[1];
        textBox277.Text = outputT3[2];
        textBox276.Text = outputT3[3];
        textBox275.Text = outputT3[4];
        textBox274.Text = outputT3[5];
        textBox273.Text = outputT3[6];
        textBox272.Text = outputT3[7];
        textBox271.Text = outputT3[8];
        textBox270.Text = outputT3[8];
        textBox269.Text = outputT3[10];
        textBox268.Text = outputT3[11];
        textBox267.Text = outputT3[12];
        textBox266.Text = outputT3[13];
        textBox265.Text = outputT3[14];
        textBox264.Text = outputT3[15];
        textBox263.Text = outputT3[16];
    }
    private void FindMaxOutput()
    {

```

```

#region ค่าสูงสุดของ output
แบบที่ 1
for (int i = 1; i <= 16; i++)
{
    if (outputT1[i] == "D")
    {
        if (listLingVal[i, 1] >
d1)
        {
            d1 = listLingVal[i,
1];
        }
    }
    if (outputT1[i] == "B")
    {
        if (listLingVal[i, 1] >
b1)
        {
            b1 = listLingVal[i,
1];
        }
    }
    if (outputT1[i] == "U")
    {
        if (listLingVal[i, 1] >
u1)
        {
            u1 = listLingVal[i,
1];
        }
    }
}
}
if (outputT1[i] == "UU")
{
    if (listLingVal[i, 1] >
uu1)
    {
        uu1 = listLingVal[i,
1];
    }
}
}
}
#endregion

#region ค่าสูงสุดของ output
แบบที่ 2
for (int i = 1; i <= 16; i++)
{
    if (outputT2[i] == "D")
    {
        if (listLingVal[i, 1] > d2)
        {
            d2 = listLingVal[i, 1];
        }
    }
    if (outputT2[i] == "B")
    {
        if (listLingVal[i, 1] > b2)
        {
            b2 = listLingVal[i, 1];
        }
    }
    if (outputT2[i] == "U")
    {
        if (listLingVal[i, 1] > u2)
        {
            u2 = listLingVal[i, 1];
        }
    }
    if (outputT2[i] == "UU")
    {
        if (listLingVal[i, 1] > uu2)
        {
            uu2 = listLingVal[i, 1];
        }
    }
}
}
}
#endregion

#region ค่าสูงสุดของ output แบบที่ 3
for (int i = 1; i <= 16; i++)
{
    if (outputT3[i] == "D")
    {
        if (listLingVal[i, 1] > d3)
        {
            d3 = listLingVal[i, 1];
        }
    }
}
}
if (outputT3[i] == "B")
{
    if (listLingVal[i, 1] > b3)
    {
        b3 = listLingVal[i, 1];
    }
}
}
}

```

```

    }
    }
    if (outputT3[i] == "U")
    {
        if (listLingVal[i, 1] >
u3)
        {
            u3 = listLingVal[i,
1];
        }
    }
    if (outputT3[i] == "UU")
    {
        if (listLingVal[i, 1] >
uu3)
        {
            uu3 = listLingVal[i,
1];
        }
    }
}
#endregion
private void
ShowMaxOutput()
{
    txtD1.Text = d1.ToString();
    txtD2.Text = d2.ToString();
    txtD3.Text = d3.ToString();
    txtB1.Text = b1.ToString();
    txtB2.Text = b2.ToString();
    txtB3.Text = b3.ToString();
    txtU1.Text = u1.ToString();
    txtU2.Text = u2.ToString();
    txtU3.Text = u3.ToString();
    txtUU1.Text =
uu1.ToString();
    txtUU2.Text =
uu2.ToString();
    txtUU3.Text =
uu3.ToString();
}

private void button1_Click(object
sender, EventArgs e)
{
    if (txtVar1.Text == "" ||
txtVar2.Text == "" || txtVar3.Text == "" ||
txtVar11.Text == "" || txtVar12.Text == ""
|| txtVar13.Text == "" || txtVar14.Text ==
"")
    {
        MessageBox.Show("กรุณาป้อน
ข้อมูลให้ครบ", "ตรวจสอบความถูกต้อง");
    }
    else
    {
        double var1 =
double.Parse(txtVar1.Text);
        double var2 =
double.Parse(txtVar2.Text);
        double var3 =
double.Parse(txtVar3.Text);

        double var11 =
double.Parse(txtVar11.Text);
        double var12 =
double.Parse(txtVar12.Text);
        double var13 =
double.Parse(txtVar13.Text);
        double var14 =
double.Parse(txtVar14.Text);

        factor1 = (0.97 * var2 + 0.15 *
var3 + 3.32) - var1;
        txtFac1.Text =
factor1.ToString();
        factor3 = (var12 * var13 * 100) /
var11;
        txtFac3.Text =
factor3.ToString();
        factor4 = var14;
        txtFac4.Text =
factor4.ToString();
        factor2 =
double.Parse(txtVarFac2.Text);
        txtFac2.Text =
factor2.ToString();
    }
    checkFactor();
}

```



```

    }
    private void
button2_Click(object sender,
EventArgs e)
    {
        ling[1, 1] = "z";
        ling[1, 2] = "z";
        ling[2, 1] = "z";
        ling[2, 2] = "z";
        ling[3, 1] = "z";
        ling[3, 2] = "z";
        ling[4, 1] = "z";
        ling[4, 2] = "z";

        lingVal[1, 1] = 0;
        lingVal[1, 2] = 0;
        lingVal[2, 1] = 0;
        lingVal[2, 2] = 0;
        lingVal[3, 1] = 0;
        lingVal[3, 2] = 0;
        lingVal[4, 1] = 0;
        lingVal[4, 2] = 0;

        Factor.fac1(factor1, ref
ling[1, 1], ref ling[1, 2], ref
lingVal[1, 1], ref lingVal[1, 2]);
        Factor.fac2(factor2, ref
ling[2, 1], ref ling[2, 2], ref
lingVal[2, 1], ref lingVal[2, 2]);
        Factor.fac3(factor3, ref
ling[3, 1], ref ling[3, 2], ref
lingVal[3, 1], ref lingVal[3, 2]);
        Factor.fac4(factor4, ref
ling[4, 1], ref ling[4, 2], ref
lingVal[4, 1], ref lingVal[4, 2]);
        #region แสดงภาษาและสมาชิก
        txtFac1Ling1.Text = ling[1,
1].ToString();
        txtFac1Ling2.Text = ling[1,
2].ToString();
        txtFac2Ling1.Text = ling[2,
1].ToString();
        txtFac2Ling2.Text = ling[2,
2].ToString();
        txtFac3Ling1.Text = ling[3,
1].ToString();
        txtFac3Ling2.Text = ling[3,
2].ToString();
        txtFac4Ling1.Text = ling[4,
1].ToString();
        txtFac4Ling2.Text = ling[4,
2].ToString();
        txtFac3Ling2.Text = ling[3,
2].ToString();
        txtFac4Ling1.Text = ling[4,
1].ToString();
        txtFac4Ling2.Text = ling[4,
2].ToString();
        txtFac4Ling1.Text = ling[4,
1].ToString();
        txtFac4Ling2.Text = ling[4,
2].ToString();
        txtFac1Mem1.Text = lingVal[1,
1].ToString();
        txtFac1Mem2.Text = lingVal[1,
2].ToString();
        txtFac2Mem1.Text = lingVal[2,
1].ToString();
        txtFac2Mem2.Text = lingVal[2,
2].ToString();
        txtFac3Mem1.Text = lingVal[3,
1].ToString();
        txtFac3Mem2.Text = lingVal[3,
2].ToString();
        txtFac4Mem1.Text = lingVal[4,
1].ToString();
        txtFac4Mem2.Text = lingVal[4,
2].ToString();
        #endregion
    }
    private void button3_Click(object
sender, EventArgs e)
    {
        #region แสดงภาษาและสมาชิก
        txtFac1Ling1.Text = ling[1,
1].ToString();
        txtFac1Ling2.Text = ling[1,
2].ToString();
        txtFac2Ling1.Text = ling[2,
1].ToString();
        txtFac2Ling2.Text = ling[2,
2].ToString();
        txtFac3Ling1.Text = ling[3,
1].ToString();
        txtFac3Ling2.Text = ling[3,
2].ToString();
        txtFac4Ling1.Text = ling[4,
1].ToString();
        txtFac4Ling2.Text = ling[4,
2].ToString();
    }
}

```

```

        txtFac1Mem1.Text =
lingVal[1, 1].ToString();
        txtFac1Mem2.Text =
lingVal[1, 2].ToString();
        txtFac2Mem1.Text =
lingVal[2, 1].ToString();
        txtFac2Mem2.Text =
lingVal[2, 2].ToString();
        txtFac3Mem1.Text =
lingVal[3, 1].ToString();
        txtFac3Mem2.Text =
lingVal[3, 2].ToString();
        txtFac4Mem1.Text =
lingVal[4, 1].ToString();
        txtFac4Mem2.Text =
lingVal[4, 2].ToString();
        #endregion
        cartesianProduct();
        pluslang();

        #region แสดงกฎและสมาชิก
        rule1.Text =
list[1].ToString();
        rule2.Text =
list[2].ToString();
        rule3.Text =
list[3].ToString();
        rule4.Text =
list[4].ToString();
        rule5.Text =
list[5].ToString();
        rule6.Text =
list[6].ToString();
        rule7.Text =
list[7].ToString();
        rule8.Text =
list[8].ToString();
        rule9.Text =
list[9].ToString();
        rule10.Text =
list[10].ToString();
        rule11.Text =
list[11].ToString();
        rule12.Text =
list[12].ToString();
        rule13.Text = list[13].ToString();
        rule14.Text = list[14].ToString();
        rule15.Text = list[15].ToString();
        rule16.Text = list[16].ToString();
        #endregion
        #region แสดงกฎและ output
        rule1o.Text = list[1].ToString();
        rule2o.Text = list[2].ToString();
        rule3o.Text = list[3].ToString();
        rule4o.Text = list[4].ToString();
        rule5o.Text = list[5].ToString();
        rule6o.Text = list[6].ToString();
        rule7o.Text = list[7].ToString();
        rule8o.Text = list[8].ToString();
        rule9o.Text = list[9].ToString();
        rule10o.Text = list[10].ToString();
        rule11o.Text = list[11].ToString();
        rule12o.Text = list[12].ToString();
        rule13o.Text = list[13].ToString();
        rule14o.Text = list[14].ToString();
        rule15o.Text = list[15].ToString();
        rule16o.Text = list[16].ToString();
        #endregion
        showMemberFromrule();
        findMin();
        showmin();
    }
    private void button4_Click(object
sender, EventArgs e)
    {
        for (int i = 1; i <= 16; i++)
        {
            outputT1[i] = "zz";
            outputT2[i] = "zz";
            outputT3[i] = "zz";
            Rule.ruleType1(list[i], ref
outputT1[i]);
            Rule.ruleType2(list[i], ref
outputT2[i]);
            Rule.ruleType3(list[i], ref
outputT3[i]);
        }
        showOUTPUT();
    }
}

```



```

private void
button5_Click(object sender,
EventArgs e)
{
    d1 = 0; b1 = 0; u1 = 0; uu1
= 0;
    d2 = 0; b2 = 0; u2 = 0; uu2
= 0;
    d3 = 0; b3 = 0; u3 = 0; uu3
= 0;
    FindMaxOutput();
    ShowMaxOutput();
}
//แบบที่3
private void
button6_Click(object sender,
EventArgs e)
{
    double arae3 = 0;
    double arae3t = 0;
    int chanel =
int.Parse(txtChanal.Text);
    Area.findArea(d3, b3, u3,
uu3, ref arae3, chanel);
    Area d = new Area();
    d.findAreaXX(d3, b3, u3,
uu3, ref arae3t, chanel);
    double z = (arae3t/arae3);
    txtSurface3.Text =
z.ToString();
}
//แบบที่2
private void
button8_Click(object sender,
EventArgs e)
{
    double arae2 = 0;
    double arae2t = 0;
    int chanel =
int.Parse(txtChanal.Text);
    Area.findArea(d2, b2, u2,
uu2, ref arae2, chanel);
    Area d = new Area();
    d.findAreaXX(d2, b2, u2,
uu2, ref arae2t, chanel);
    double z = (arae2t / arae2);

    txtSurface2.Text = z.ToString();
}
//แบบที่1
private void button7_Click(object
sender, EventArgs e)
{
    double arae1 = 0;
    double arae1t = 0;
    int chanel =
int.Parse(txtChanal.Text);
    Area.findArea(d1, b1, u1, uu1, ref
arae1, chanel);
    Area d = new Area();
    d.findAreaXX(d1, b1, u1, uu1, ref
arae1t, chanel);
    double z = (arae1t / arae1);
    txtSurface1.Text = z.ToString();
}
using System;
using System.Collections.Generic;
using System.Text;
namespace WindowsApplication1
{
    class Factor
    {
        public static void fac1(double d0, ref
string ling1, ref string ling2, ref double
ling1Val, ref double ling2Val)
        {
            //1
            if (d0 >= -20 && d0 <= -15)
            {
                ling1 = "N";
                ling2 = "N";
                ling1Val = 1;
                ling2Val = 1;
            }
            //2
            else if (d0 > -15 && d0 <= -10)
            {
                ling1 = "N";

```

```

    ling2 = "L";
    ling1Val = -(d0 + 10) / 5;
    ling2Val = (d0 + 5) / 5;
}
else if (d0 > -10 && d0 <=
4) {
    ling1 = "L";
    ling2 = "M";
    ling1Val = -(d0 - 4) / 14;
    ling2Val = (d0 + 10) / 14;
}
else if (d0 > 4 && d0 <=
10) {
    ling1 = "M";
    ling2 = "H";
    ling1Val = -(d0 - 10) / 6;
    ling2Val = (d0 - 4) / 6;
}
else if (d0 > 10 && d0 <=
20) {
    ling1 = "H";
    ling2 = "H";
    ling1Val = 1;
    ling2Val = 1;
}
}
public static void fac2(double
d0, ref string ling1, ref string ling2,
ref double ling1Val, ref double
ling2Val)
{
    if (d0 >= 0 && d0 <= 1)
    {
        ling1 = "L";
        ling2 = "L";
        ling1Val = 1;
        ling2Val = 1;
    }
}

else if (d0 > 1 && d0 <= 143)
{
    ling1 = "L";
    ling2 = "M";
    ling1Val = -(d0 - 143) / 142;
    ling2Val = (d0 - 1) / 142;
}
else if (d0 > 143 && d0 <= 285)
{
    ling1 = "M";
    ling2 = "H";
    ling1Val = -(d0 - 285) / 142;
    ling2Val = (d0 - 143) / 142;
}
else if (d0 > 285 && d0 <= 1500)
{
    ling1 = "H";
    ling2 = "H";
    ling1Val = 1;
    ling2Val = 1;
}
}
public static void fac3(double d0, ref
string ling1, ref string ling2, ref double
ling1Val, ref double ling2Val)
{
    if (d0 >= 0 && d0 <= 0.002)
    {
        ling1 = "L";
        ling2 = "L";
        ling1Val = 1;
        ling2Val = 1;
    }
    else if (d0 > 0.002 && d0 <= 0.01)
    {
        ling1 = "L";
        ling2 = "M";
        ling1Val = -125 * d0 + 1.25;
        ling2Val = 125 * d0 - 0.25;
    }
    else if (d0 > 0.01 && d0 <= 0.018)

```

```

    {
        ling1 = "M";
        ling2 = "H";
        ling1Val = -(d0 - 200) / 100;
        ling2Val = (d0 - 100) / 100;
    }
    ling1Val = -125 * d0 +
2.25;
    ling2Val = 125 * d0 -
1.25;
}
else if (d0 > 0.018 && d0
<= 1)
    {
        ling1 = "H";
        ling2 = "H";
        ling1Val = 1;
        ling2Val = 1;
    }
    else if (d0 > 300 && d0 <= 400)
    {
        ling1 = "V";
        ling2 = "V";
        ling1Val = 1;
        ling2Val = 1;
    }
}
public static void fac4(double
d0, ref string ling1, ref string ling2,
ref double ling1Val, ref double
ling2Val)
    {
        if (d0 >= 0 && d0 <= 50)
        {
            ling1 = "G";
            ling2 = "G";
            ling1Val = 1;
            ling2Val = 1;
        }
        else if (d0 > 50 && d0 <=
100)
        {
            ling1 = "G";
            ling2 = "M";
            ling1Val = -(d0 - 100) /
50;
            ling2Val = (d0 - 50) / 50;
        }
        else if (d0 > 100 && d0 <=
200)
        {
            ling1 = "M";
            ling2 = "B";
            ling1Val = -(d0 - 200) / 100;
            ling2Val = (d0 - 100) / 100;
        }
        else if (d0 > 200 && d0 <= 300)
        {
            ling1 = "B";
            ling2 = "V";
            ling1Val = -(d0 - 300) / 100;
            ling2Val = (d0 - 200) / 100;
        }
        else if (d0 > 300 && d0 <= 400)
        {
            ling1 = "V";
            ling2 = "V";
            ling1Val = 1;
            ling2Val = 1;
        }
    }
}
using System;
using System.Collections.Generic;
using System.Text;
namespace WindowsApplication1
{
    class Rule
    {
        public static void ruleType1(string
lingSum, ref string output1)
        {
            string output2, output3;
            #region if rule
            if (lingSum == "HHHG")
            {
                output1 = "B";
                output2 = "B";
                output3 = "B";
            }
            else if (lingSum == "HHMG")
            {

```

```

        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HHHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"HHMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HHLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HHHV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "HHMV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "HHLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HMHG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HMMG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HMLG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum == "HMHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }

```

```

    }
    else if (lingSum ==
"HMMM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HMLM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HMHB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HMMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HMLB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HMHV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"HMMV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HMLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HLHG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HLMG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum == "HLLG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum == "HLHM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HLMM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HLLM")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum == "HLHB")
    {

```

```

        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HLMB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HLLB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HLHV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HLMV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HLLV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"MHHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
        else if (lingSum == "MHMG")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "MHLG")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "MHHM")
        {
            output1 = "B";
            output2 = "U";
            output3 = "B";
        }
        else if (lingSum == "MHMM")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "MHLM")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "MHMB")
        {
            output1 = "B";
            output2 = "U";
            output3 = "B";
        }
        else if (lingSum == "MHMB")
        {
            output1 = "B";
            output2 = "U";
            output3 = "B";
        }
        else if (lingSum == "MHLB")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }

```

```

    }
    else if (lingSum ==
"MHHV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"MHMV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"MHLV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"MMHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MMMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MMLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"MMHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "MMMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMHV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "MMMV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "MMLV")
    {

```



```

        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MLHG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"MLMG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"MLLG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum ==
"MLHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MLMM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"MLLM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
        else if (lingSum == "MLHB")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "MLMB")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "MLLB")
        {
            output1 = "D";
            output2 = "B";
            output3 = "D";
        }
        else if (lingSum == "MLHV")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "MLMV")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "MLLV")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "LHHG")
        {
            output1 = "U";
            output2 = "U";
            output3 = "B";
        }
        else if (lingSum == "LHMG")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }

```



```

    }
    else if (lingSum ==
"LHLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LHHM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"LHMM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LHLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LHHB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"LHMB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"LHLB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "LHHV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHMV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHLV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LMHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LMMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LMLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LMHM")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "LMMM")

```

```

    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LMLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LMHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LMMB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LMLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LMHV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"LMMV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "LMLV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "LLHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LLMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LLLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "LLHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LLMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LLLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LLHB")
    {
        output1 = "B";
        output2 = "B";
    }

```

```

        output3 = "B";
    }
    else if (lingSum ==
"LLMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLHV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLMV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLLVB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NHHG")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"NHMG")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "NHLG")
    {
        output1 = "U";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NHHM")
    {
        output1 = "UU";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "NHMM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "NHLM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "NHHB")
    {
        output1 = "UU";
        output2 = "U";
        output3 = "UU";
    }
    else if (lingSum == "NHMB")
    {
        output1 = "UU";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "NHLB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }

```

```

else if (lingSum ==
"NHHV")
{
    output1 = "UU";
    output2 = "UU";
    output3 = "UU";
}
else if (lingSum ==
"NHMV")
{
    output1 = "UU";
    output2 = "U";
    output3 = "UU";
}
else if (lingSum ==
"NHLV")
{
    output1 = "UU";
    output2 = "U";
    output3 = "U";
}
else if (lingSum ==
"NMHG")
{
    output1 = "U";
    output2 = "U";
    output3 = "B";
}
else if (lingSum ==
"NMVG")
{
    output1 = "B";
    output2 = "B";
    output3 = "B";
}
else if (lingSum ==
"NMLG")
{
    output1 = "B";
    output2 = "B";
    output3 = "B";
}
else if (lingSum ==
"NMHM")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMMM")
{
    output1 = "U";
    output2 = "U";
    output3 = "B";
}
else if (lingSum == "NMLM")
{
    output1 = "B";
    output2 = "B";
    output3 = "B";
}
else if (lingSum == "NMHB")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMVB")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMLB")
{
    output1 = "U";
    output2 = "U";
    output3 = "B";
}
else if (lingSum == "NMHV")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMMV")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMLV")
{
    output1 = "U";
}

```



```

        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HHHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
        else if (lingSum == "HHMB")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "HHLB")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "HHHV")
        {
            output1 = "B";
            output2 = "U";
            output3 = "B";
        }
        else if (lingSum == "HHMV")
        {
            output1 = "B";
            output2 = "U";
            output3 = "B";
        }
        else if (lingSum == "HHLV")
        {
            output1 = "B";
            output2 = "B";
            output3 = "B";
        }
        else if (lingSum == "HMHG")
        {
            output1 = "D";
            output2 = "B";
            output3 = "D";
        }
        else if (lingSum == "HMMG")
        {
            output1 = "D";
            output2 = "B";
            output3 = "D";
        }
        else if (lingSum == "HMLG")
        {
            output1 = "D";
            output2 = "D";
            output3 = "D";
        }

```

```

    }
    else if (lingSum ==
"HMHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HMMM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HMLM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HMHB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HMMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HMLB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HMHV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "HMMV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HMLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HLHG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HLMG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum == "HLLG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum == "HLHM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HLMM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HLLM")
    {

```



```

        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum ==
"HLHB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HLMB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HLLB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HLHV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HLMV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HLLV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "MHHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHHM")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "MHMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "MHMB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }

```



```

    }
    else if (lingSum ==
"MHLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MHHV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"MHMV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"MHLV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"MMHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MMMVG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MMLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MMHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "MMMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MMHV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "MMMV")
    {
        output2 = "B";
        output3 = "D";
    }
}

```

```

        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"MMLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MLHG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"MLMG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"MLLG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum ==
"MLHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"MLMM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "MLLM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "MLHB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MLMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MLLB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "MLHV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MLMV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MLLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LHHG")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }

```

```

    }
    else if (lingSum ==
"LHMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LHLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LHHM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"LHMM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LHLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LHHB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"LHMB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHLB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "LHHV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHMV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHLV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LMHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LMMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LMLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LMHM")

```

```

    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
else if (lingSum ==
"LMMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
else if (lingSum ==
"LMLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
else if (lingSum ==
"LMHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
else if (lingSum ==
"LMMB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
else if (lingSum ==
"LMLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
else if (lingSum ==
"LMHV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
else if (lingSum == "LMMV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
else if (lingSum == "LMLV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
else if (lingSum == "LLHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
else if (lingSum == "LLMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
else if (lingSum == "LLLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "D";
    }
else if (lingSum == "LLHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
else if (lingSum == "LLMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
else if (lingSum == "LLLM")
    {
        output1 = "B";
        output2 = "B";
    }

```



```

else if (lingSum == "NHLB")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NHHV")
{
    output1 = "UU";
    output2 = "UU";
    output3 = "UU";
}
else if (lingSum == "NHMV")
{
    output1 = "UU";
    output2 = "U";
    output3 = "UU";
}
else if (lingSum == "NHLV")
{
    output1 = "UU";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMHG")
{
    output1 = "U";
    output2 = "U";
    output3 = "B";
}
else if (lingSum == "NMMG")
{
    output1 = "B";
    output2 = "B";
    output3 = "B";
}
else if (lingSum == "NMLG")
{
    output1 = "B";
    output2 = "B";
}
else if (lingSum == "output3 = \"B\";
}
else if (lingSum == "NMHM")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMMM")
{
    output1 = "U";
    output2 = "U";
    output3 = "B";
}
else if (lingSum == "NMLM")
{
    output1 = "B";
    output2 = "B";
    output3 = "B";
}
else if (lingSum == "NMHB")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMMB")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMLB")
{
    output1 = "U";
    output2 = "U";
    output3 = "B";
}
else if (lingSum == "NMHV")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMMV")
{
    output1 = "U";
}

```

```

        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"NMLV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"NLHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NLMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NLLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NLHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NLMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLHB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLHV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLMV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
}
#endregion
}

```



```

public static void
ruleType3(string lingSum, ref
string output3)
{
    string output2, output1;
    #region if rule
    if (lingSum == "HHHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HHHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HHLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HHHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "HHMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HHLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HHHV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "HHMV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "HHLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HMHG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HMMG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
}

```



```

    }
    else if (lingSum ==
"HMLG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum ==
"HMHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HMMM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HMLM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HMHB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HMMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HMLB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HMHV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "HMMV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HMLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HLHG")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HLMG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum == "HLLG")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum == "HLHM")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "HLMM")
    {

```

```

        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HLLM")
    {
        output1 = "D";
        output2 = "D";
        output3 = "D";
    }
    else if (lingSum ==
"HLHB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HLMB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HLLB")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum ==
"HLHV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"HLMV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "HLLV")
    {
        output1 = "D";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "MHHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHHM")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "MHMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "MHMB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }

```



```

    }
    else if (lingSum ==
"LHHG")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LHMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LHLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LHHM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"LHMM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LHLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LHHB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHMB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHLB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "LHHV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHMV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LHLV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LMHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LMMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LMLG")

```

```

    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LMHM")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LMMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LMLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LMHB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LMMB")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"LMLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    }
    else if (lingSum == "LMHV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "LMMV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "LMLV")
    {
        output1 = "B";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "LLHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LLMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "LLLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "D";
    }
    else if (lingSum == "LLHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    }
    else if (lingSum == "LLMM")
    {
        output1 = "B";
        output2 = "B";
    }

```

```

        output3 = "B";
    }
    else if (lingSum ==
"LLLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLHB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLHV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLMV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"LLLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NHHG")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "NHMG")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "NHLG")
    {
        output1 = "U";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NHHM")
    {
        output1 = "UU";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "NHMM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum == "NHLM")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum == "NHHB")
    {
        output1 = "UU";
        output2 = "U";
        output3 = "UU";
    }
    else if (lingSum == "NHMB")

```



```

    {
        output1 = "UU";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"NHLB")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"NHHV")
    {
        output1 = "UU";
        output2 = "UU";
        output3 = "UU";
    }
    else if (lingSum ==
"NHMV")
    {
        output1 = "UU";
        output2 = "U";
        output3 = "UU";
    }
    else if (lingSum ==
"NHLV")
    {
        output1 = "UU";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"NMHG")
    {
        output1 = "U";
        output2 = "U";
        output3 = "B";
    }
    else if (lingSum ==
"NMMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
}
else if (lingSum == "NMLG")
{
    output1 = "B";
    output2 = "B";
    output3 = "B";
}
else if (lingSum == "NMHM")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMMM")
{
    output1 = "U";
    output2 = "U";
    output3 = "B";
}
else if (lingSum == "NMLM")
{
    output1 = "B";
    output2 = "B";
    output3 = "B";
}
else if (lingSum == "NMHB")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMMB")
{
    output1 = "U";
    output2 = "U";
    output3 = "U";
}
else if (lingSum == "NMLB")
{
    output1 = "U";
    output2 = "U";
    output3 = "B";
}
}
else if (lingSum == "NMHV")
{
    output1 = "U";
    output2 = "U";

```

```

        output3 = "U";
    }
    else if (lingSum ==
"NMMV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"NMLV")
    {
        output1 = "U";
        output2 = "U";
        output3 = "U";
    }
    else if (lingSum ==
"NLHG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NLMG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NLLG")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NLHM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum ==
"NLMM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLLM")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLHB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLMB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLLB")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLHV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLMV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }
    else if (lingSum == "NLLV")
    {
        output1 = "B";
        output2 = "B";
        output3 = "B";
    }

```



```

if (b < 0.5 && u < 0.5)
{
    if (b >= u)
    {
        Sum = Sum +
Integral.integralConst(b, 5 + 47 *
b, 52 - 47 * b);
        Sum = Sum +
Integral.integral(new
Integral.Function(f3), 52 - 47 * b,
52 - 47 * u, step_number);
    }
    if (b < u)
    {
        Sum = Sum +
Integral.integral(new
Integral.Function(f4), 5 + 47 * b, 5
+ 47 * u, step_number);
        Sum = Sum +
Integral.integralConst(u, 5 + 47 *
u, 52 - 47 * u);
    }
}
if (u >= 0.5 && uu >= 0.5)
{
    Sum = Sum +
Integral.integral(new
Integral.Function(f5), 99 - 47 * u,
75.5, step_number);
    Sum = Sum +
Integral.integral(new
Integral.Function(f6), 75.5, 52 + 47
* u, step_number);
}
if (u >= 0.5 && uu < 0.5)
{
    Sum = Sum +
Integral.integral(new
Integral.Function(f5), 99 - 47 * u,
99 - 47 * uu, step_number);
}
if (u < uu)
{
    Sum = Sum +
Integral.integral(new Integral.Function(f6),
52 + 47 * 6, 52 + 47 * uu, step_number);
    Sum = Sum +
Integral.integralConst(uu, 52 + 47 * uu, 99
- 47 * uu);
}
}
}
//public static void pass(double
dt,double bt,double ut,double uut ,ref
double Sumt,int chanelt)
//{
//}
}

public void findAreaXX(double d,
double b, double u, double uu, ref double
Sum, int chanel)
{
    int step_number = chanel;
    if (d >= 0.5)
    {
        this.a = d;
        Sum = Sum +
Integral.integral(new
Integral.Function(fxcons), 0, 5 - 4 * d,
step_number);
    }
}

```



```

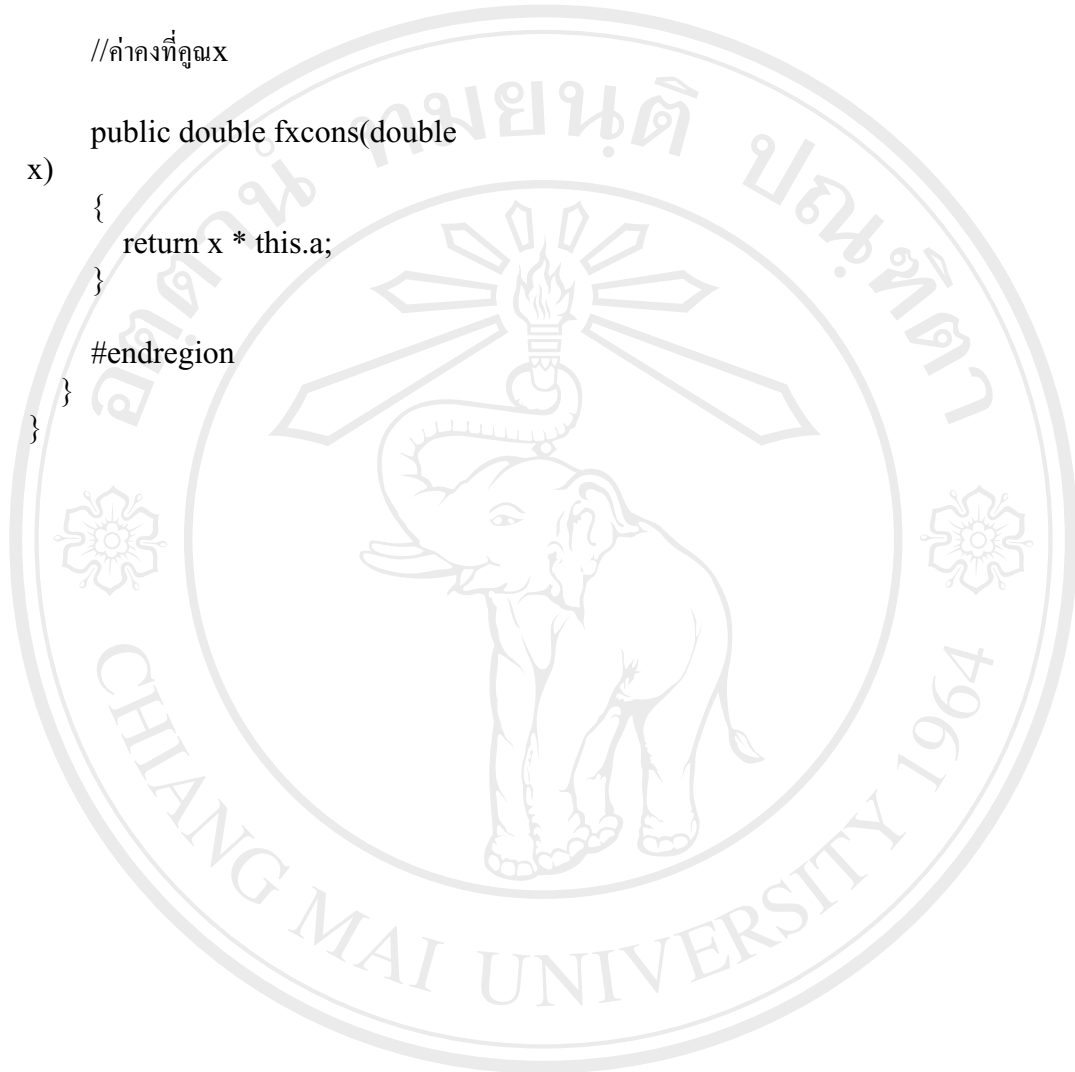
        if (d >= b)
        {
            this.a = d;
            Sum = Sum +
Integral.integral(new
Integral.Function(fxcons), 1 + 4 *
d, 5 - 4 * d, step_number);
            Sum = Sum +
Integral.integral(new
Integral.Function(fx1), 5 - 4 * d, 5
- 4 * b, step_number);
        }
        if (d < b)
        {
            Sum = Sum +
Integral.integral(new
Integral.Function(fx2), 1 + 4 * d, 1
+ 4 * b, step_number);

            this.a = b;
            Sum = Sum +
Integral.integral(new
Integral.Function(fxcons), 1 + 4 *
b, 5 - 4 * b, step_number);
        }
        if (b >= 0.5 && u >= 0.5)
        {
            Sum = Sum +
Integral.integral(new
Integral.Function(fx3), 52 - 47 * b,
28.5, step_number);
            Sum = Sum +
Integral.integral(new
Integral.Function(fx4), 28.5, 5 + 47
* u, step_number);
        }
        if (b >= 0.5 && u < 0.5)
        {
            Sum = Sum +
Integral.integral(new
Integral.Function(fx3), 52 - 47 * b,
52 - 47 * u, step_number);
        }
        if (b < 0.5 && u >= 0.5)
        {
            Sum = Sum +
Integral.integral(new
Integral.Function(fx4), 5 + 47 * b, 5 + 47 *
u, step_number);
        }
        if (b < 0.5 && u < 0.5)
        {
            if (b >= u)
            {
                this.a = b;
                Sum = Sum +
Integral.integral(new
Integral.Function(fxcons), 5 + 47 * b, 52 -
47 * b, step_number);
                Sum = Sum +
Integral.integral(new
Integral.Function(fx3), 52 - 47 * b, 52 - 47
* u, step_number);
            }
            if (b < u)
            {
                Sum = Sum +
Integral.integral(new
Integral.Function(fx4), 5 + 47 * b, 5 + 47 *
u, step_number);
                this.a = u;
                Sum = Sum +
Integral.integral(new
Integral.Function(fxcons), 5 + 47 * u, 52 -
47 * u, step_number);
            }
        }
        if (u >= 0.5 && uu >= 0.5)
        {
            Sum = Sum +
Integral.integral(new
Integral.Function(fx5), 99 - 47 * u, 75.5,
step_number);
            Sum = Sum +
Integral.integral(new
Integral.Function(fx6), 75.5, 52 + 47 * u,
step_number);
        }
    }
}

```



```
{  
    return (x - 52)*x / 47;  
}  
  
//ค่าคงที่คูณx  
  
public double fxcons(double  
x)  
{  
    return x * this.a;  
}  
#endregion  
}
```



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