



C# Start

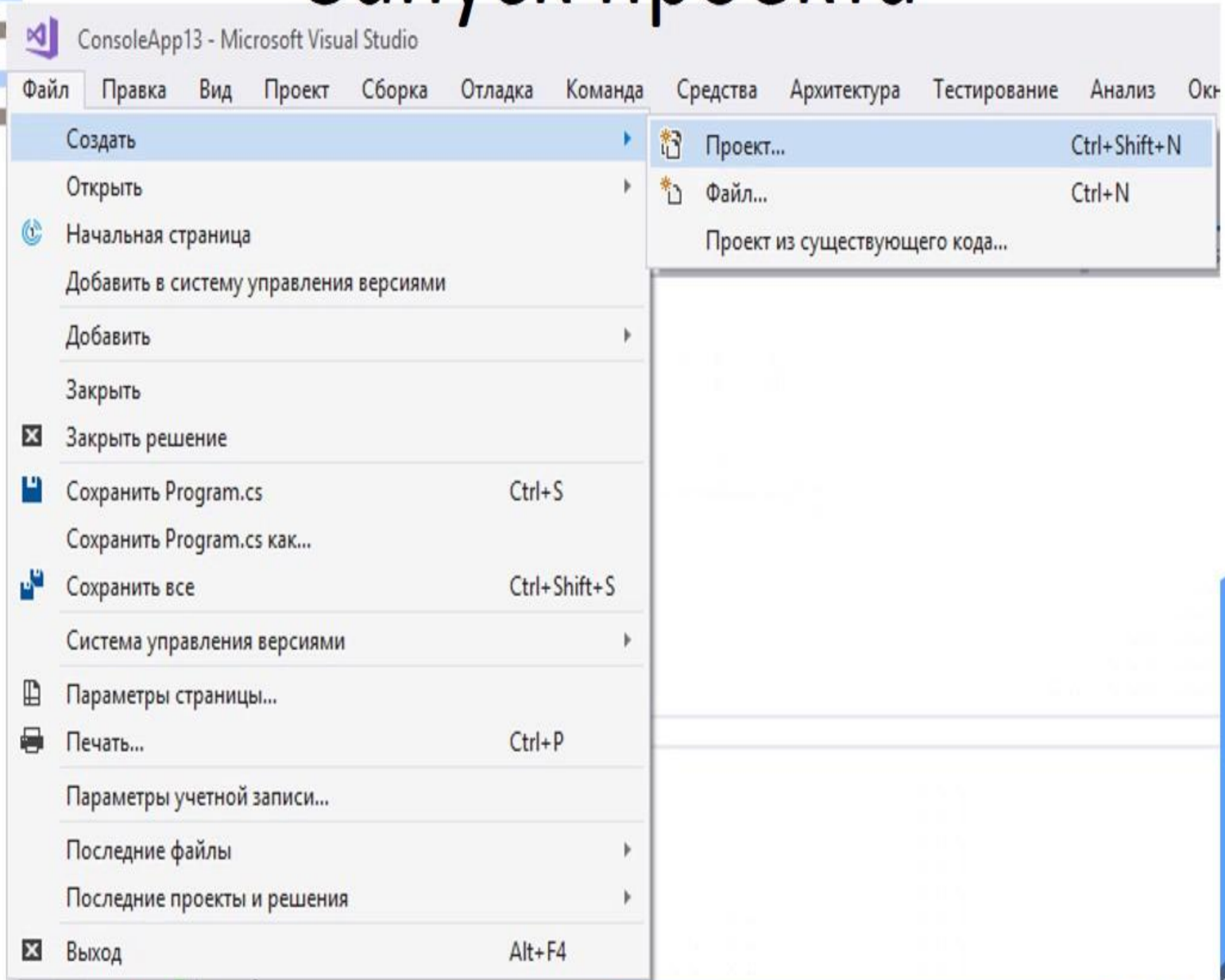
Занятие 7

Проверка знаний

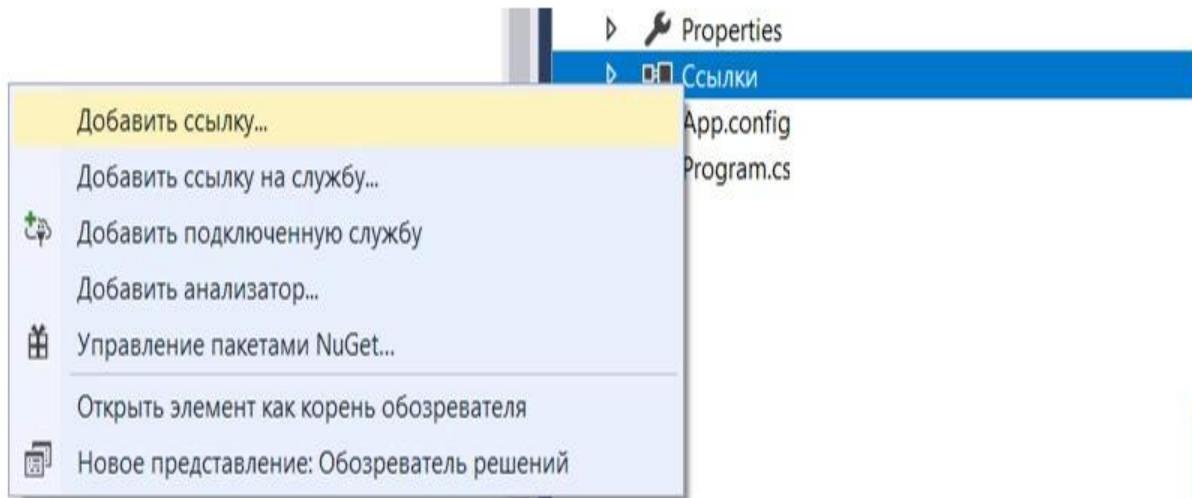
- Что делает метод BrushColor?
- Для чего нужен класс Random?

Запуск проекта

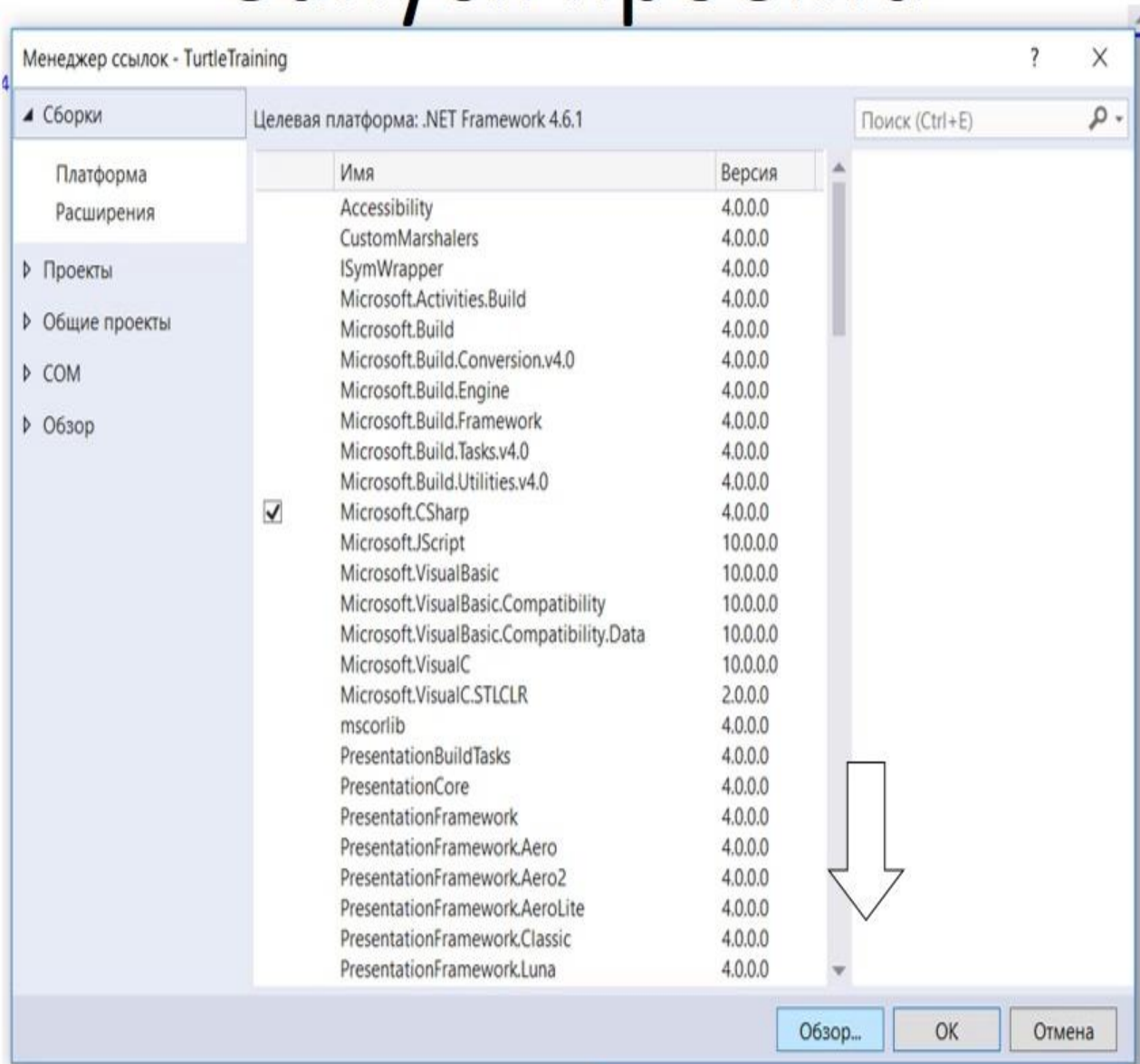
3



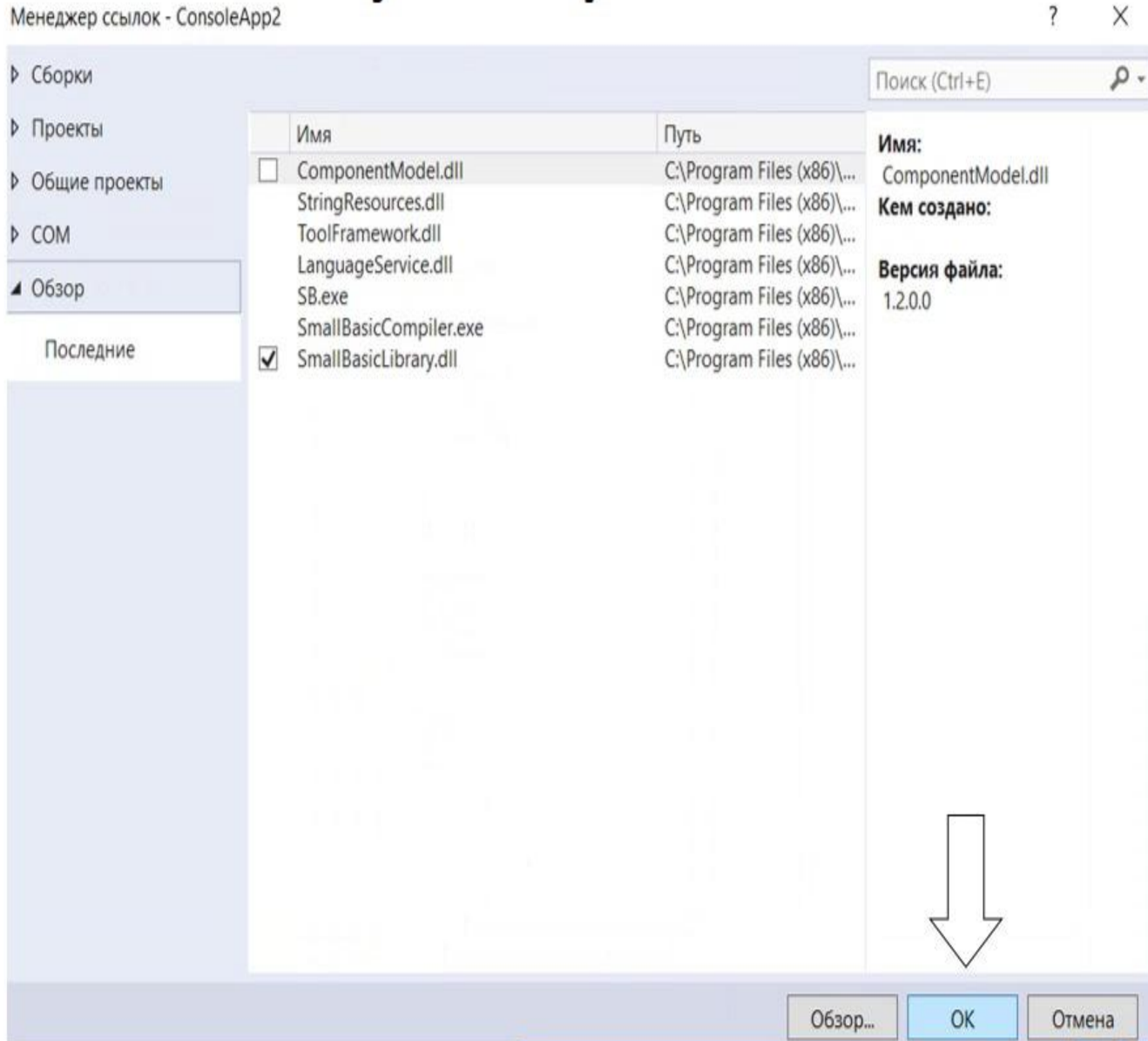
Запуск проекта



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Запуск проекта



Запуск проекта

```
using System;  
using System.Collections.Generic;  
using System.Linq;  
using System.Text;  
using System.Threading.Tasks;  
using Microsoft.SmallBasic.Library;
```

Отрисовка GraphicsWindow

```
class Program
{
    static void Main(string[] args)
    {
        GraphicsWindow.Show();
    }
}
```


Отрисовка GraphicsWindow

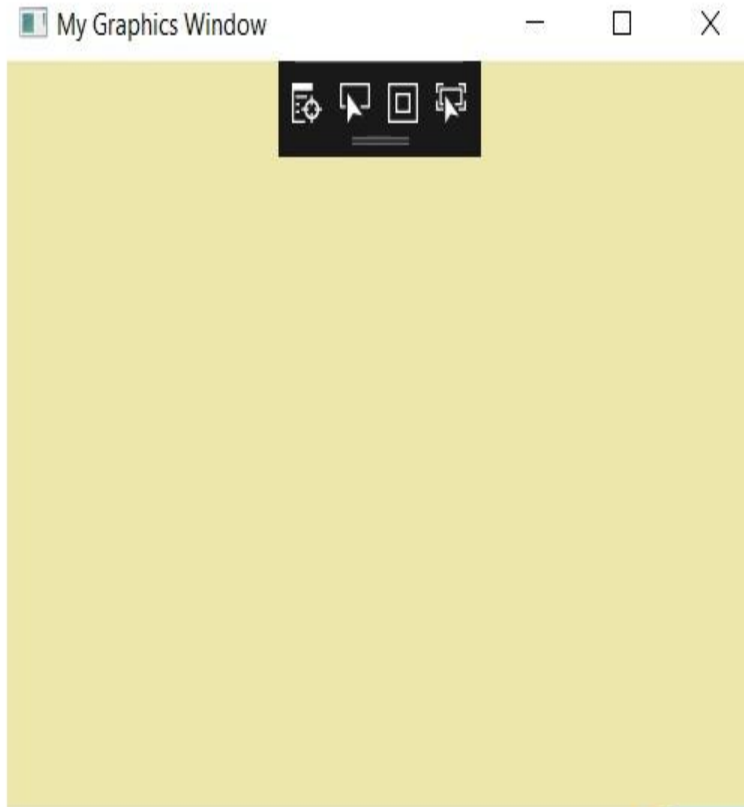
Small Basic Graphics Window



Настройка графического окна

```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "PaleGoldenrod ";
    GraphicsWindow.Title = "My Graphics Window";
    GraphicsWindow.Width = 400;
    GraphicsWindow.Height = 300;
    GraphicsWindow.Show();
}
```

Настройка графического окна



Цвета

Red Colors

IndianRed	#CD5C5C
LightCoral	#F08080
Salmon	#FA8072
DarkSalmon	#E9967A
LightSalmon	#FFA07A
Crimson	#DC143C
Red	#FF0000
FireBrick	#B22222
DarkRed	#8B0000

Pink Colors

Pink	#FFC0CB
LightPink	#FFB6C1
HotPink	#FF69B4
DeepPink	#FF1493
MediumVioletRed	#C71585
PaleVioletRed	#DB7093

Orange Colors

LightSalmon	#FFA07A
Coral	#FF7F50
Tomato	#FF6347
OrangeRed	#FF4500
DarkOrange	#FF8C00
Orange	#FFA500

Yellow Colors

Gold	#FFD700
Yellow	#FFFF00
LightYellow	#FFFFE0
LemonChiffon	#FFFACD
LightGoldenrodYellow	#FAFAD2
PapayaWhip	#FFEFD5
Moccasin	#FFE4B5
PeachPuff	#FFDAB9

PaleGoldenrod	#EEE8AA
Khaki	#F0E68C
DarkKhaki	#BDB76B

Purple Colors

Lavender	#E6E6FA
Thistle	#D8BFD8
Plum	#DDA0DD
Violet	#EE82EE
Orchid	#DA70D6
Fuchsia	#FF00FF
Magenta	#FF00FF
MediumOrchid	#BA55D3
MediumPurple	#9370DB
BlueViolet	#8A2BE2
DarkViolet	#9400D3
DarkOrchid	#9932CC

Цвета

DarkMagenta	#8B008B
Purple	#800080
Indigo	#4B0082
SlateBlue	#6A5ACD
DarkSlateBlue	#483D8B
MediumSlateBlue	#7B68EE

Green Colors

GreenYellow	#ADFF2F
Chartreuse	#7FFF00
LawnGreen	#7CFC00
Lime	#00FF00
LimeGreen	#32CD32
PaleGreen	#98FB98
LightGreen	#90EE90

Blue Colors

Aqua	#00FFFF
Cyan	#00FFFF
LightCyan	#E0FFFF
PaleTurquoise	#AFEEEE
Aquamarine	#7FFFD4
Turquoise	#40E0D0
MediumTurquoise	#48D1CC
DarkTurquoise	#00CED1
CadetBlue	#5F9EA0
SteelBlue	#4682B4
LightSteelBlue	#B0C4DE
PowderBlue	#B0E0E6
LightBlue	#ADD8E6
SkyBlue	#87CEEB

MediumSpringGreen	#00FA9A
SpringGreen	#00FF7F
MediumSeaGreen	#3CB371
SeaGreen	#2E8B57
ForestGreen	#228B22
Green	#008000
DarkGreen	#006400
YellowGreen	#9ACD32
OliveDrab	#6B8E23
Olive	#808000
DarkOliveGreen	#556B2F
MediumAquamarine	#66CDAA
DarkSeaGreen	#8FBC8F
LightSeaGreen	#20B2AA
DarkCyan	#008B8B
Teal	#008080

Цвета

LightSkyBlue	#87CEFA
DeepSkyBlue	#00BFFF
DodgerBlue	#1E90FF
CornflowerBlue	#6495ED
MediumSlateBlue	#7B68EE
RoyalBlue	#4169E1
Blue	#0000FF
MediumBlue	#0000CD
DarkBlue	#00008B
Navy	#000080
MidnightBlue	#191970

Brown Colors

Cornsilk	#FFF8DC
BlanchedAlmond	#FFEBCD
Bisque	#FFE4C4
NavajoWhite	#FFDEAD
Wheat	#F5DEB3
BurlyWood	#DEB887

White Colors

White	#FFFFFF
Snow	#FFFAFA
Honeydew	#F0FFF0
MintCream	#F5FFFA
Azure	#F0FFFF
AliceBlue	#F0F8FF
GhostWhite	#F8F8FF
WhiteSmoke	#F5F5F5
Seashell	#FFF5EE
Beige	#F5F5DC
OldLace	#FDF5E6
FloralWhite	#FFFAF0
Ivory	#FFFFF0
AntiqueWhite	#FAEBD7
Linen	#FAF0E6
LavenderBlush	#FFF0F5
MistyRose	#FFE4E1

Peru	#CD853F
Chocolate	#D2691E
SaddleBrown	#8B4513
Sienna	#A0522D
Brown	#A52A2A
Maroon	#800000

Gray Colors

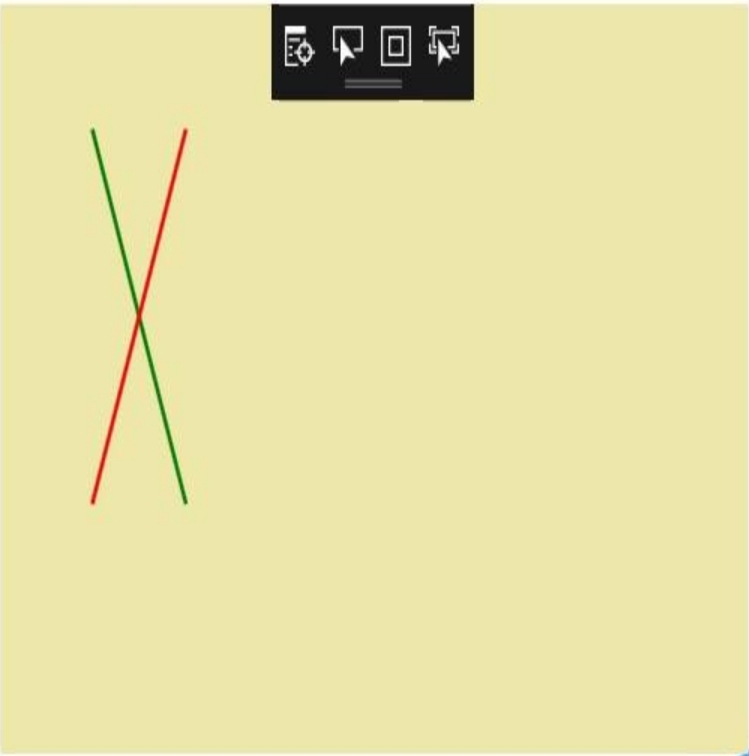
Gainsboro	#DCDCDC
LightGray	#D3D3D3
Silver	#C0C0C0
DarkGray	#A9A9A9
Gray	#808080
DimGray	#696969
LightSlateGray	#778899
SlateGray	#708090
DarkSlateGray	#2F4F4F
Black	#000000

Рисование линий

```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "PaleGoldenrod ";
    GraphicsWindow.Title = "My Graphics Window";
    GraphicsWindow.Width = 400;
    GraphicsWindow.Height = 300;
    GraphicsWindow.Show();

    GraphicsWindow.PenColor = "Green";
    GraphicsWindow.DrawLine(50, 50, 100, 200);
    GraphicsWindow.PenColor = "#FF0000 ";
    GraphicsWindow.DrawLine(50, 200, 100, 50);
}
```

My Graphics Window

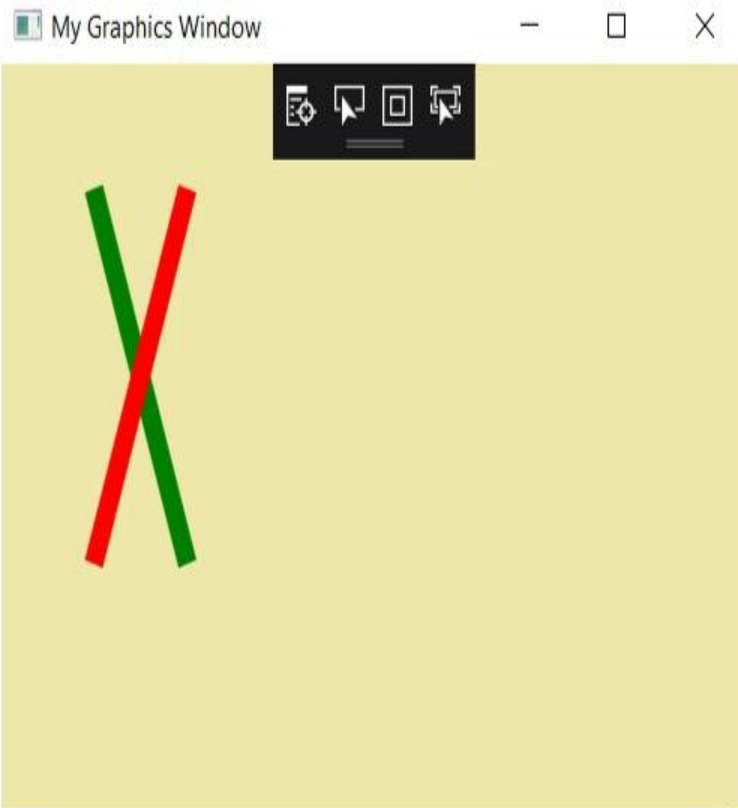


Рисование линий

```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "PaleGoldenrod ";
    GraphicsWindow.Title = "My Graphics Window";
    GraphicsWindow.Width = 400;
    GraphicsWindow.Height = 300;
    GraphicsWindow.Show();

    GraphicsWindow.PenWidth = 10;
    GraphicsWindow.PenColor = "Green";
    GraphicsWindow.DrawLine(50, 50, 100, 200);
    GraphicsWindow.PenColor = "#FF0000 ";
    GraphicsWindow.DrawLine(50, 200, 100, 50);
}
```

Рисование линий

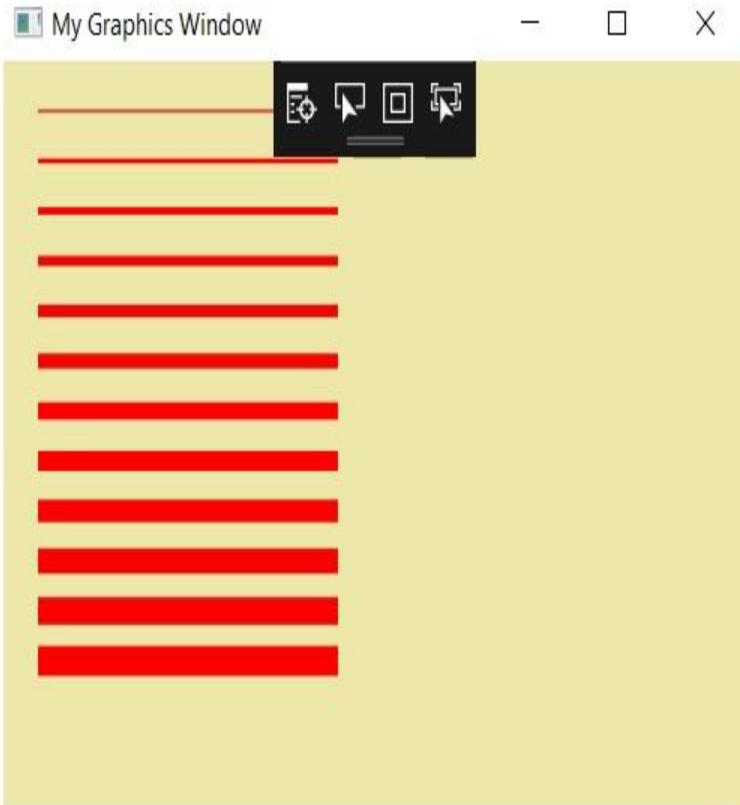


Рисование линий

```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "PaleGoldenrod ";
    GraphicsWindow.Title = "My Graphics Window";
    GraphicsWindow.Width = 400;
    GraphicsWindow.Height = 300;
    GraphicsWindow.Show();

    GraphicsWindow.PenColor = "Red";
    for (int i = 1; i <= 12; i ++)
    {
        GraphicsWindow.PenWidth = i; ;
        GraphicsWindow.DrawLine(20, i * 20, 180, i * 20);
    }
}
```

Рисование линий

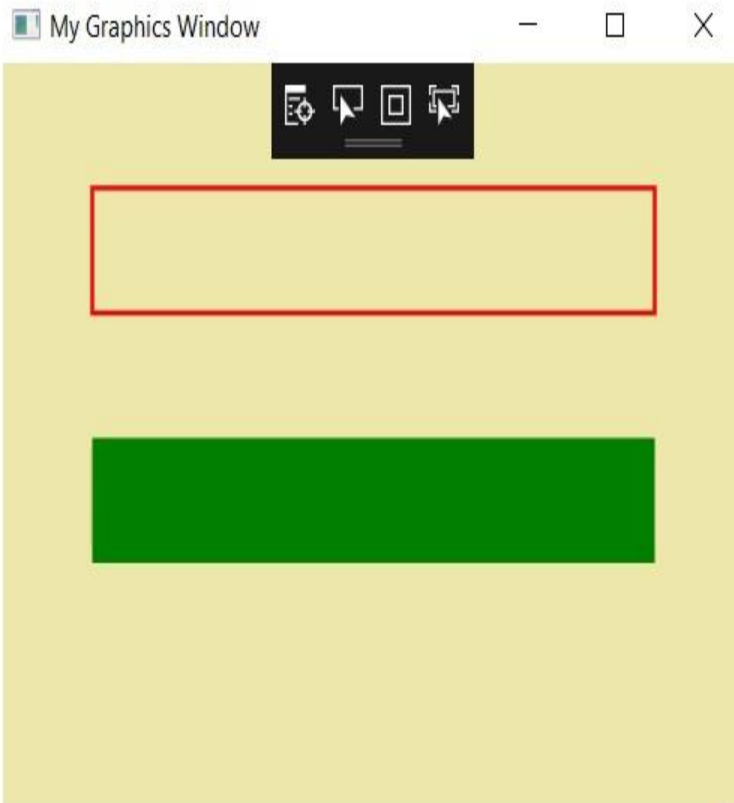


Рисование фигур

```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "PaleGoldenrod ";
    GraphicsWindow.Title = "My Graphics Window";
    GraphicsWindow.Width = 400;
    GraphicsWindow.Height = 300;
    GraphicsWindow.Show();

    GraphicsWindow.PenColor = "Red";
    GraphicsWindow.DrawRectangle(50, 50, 300, 50);
    GraphicsWindow.BrushColor = "Green";
    GraphicsWindow.FillRectangle(50, 150, 300, 50);
}
```

Рисование фигур

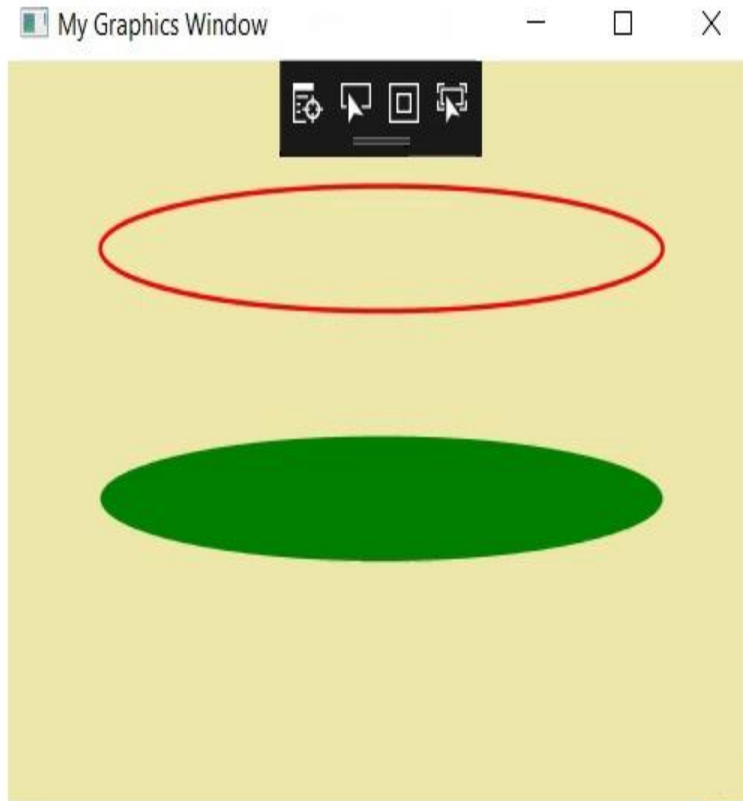


Рисование фигур

```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "PaleGoldenrod ";
    GraphicsWindow.Title = "My Graphics Window";
    GraphicsWindow.Width = 400;
    GraphicsWindow.Height = 300;
    GraphicsWindow.Show();

    GraphicsWindow.PenColor = "Red";
    GraphicsWindow.DrawEllipse(50, 50, 300, 50);
    GraphicsWindow.BrushColor = "Green";
    GraphicsWindow.FillEllipse(50, 150, 300, 50);
}
```

Рисование фигур

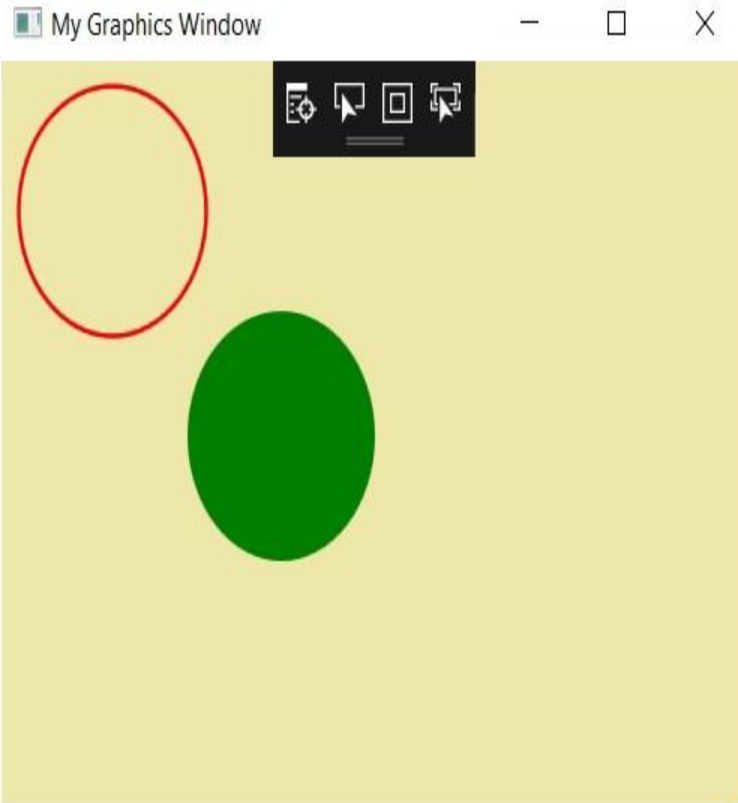


Рисование фигур

```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "PaleGoldenrod ";
    GraphicsWindow.Title = "My Graphics Window";
    GraphicsWindow.Width = 400;
    GraphicsWindow.Height = 300;
    GraphicsWindow.Show();

    GraphicsWindow.PenColor = "Red";
    GraphicsWindow.DrawEllipse(10, 10, 100, 100);
    GraphicsWindow.BrushColor = "Green";
    GraphicsWindow.FillEllipse(100, 100, 100, 100);
}
```

Рисование фигур



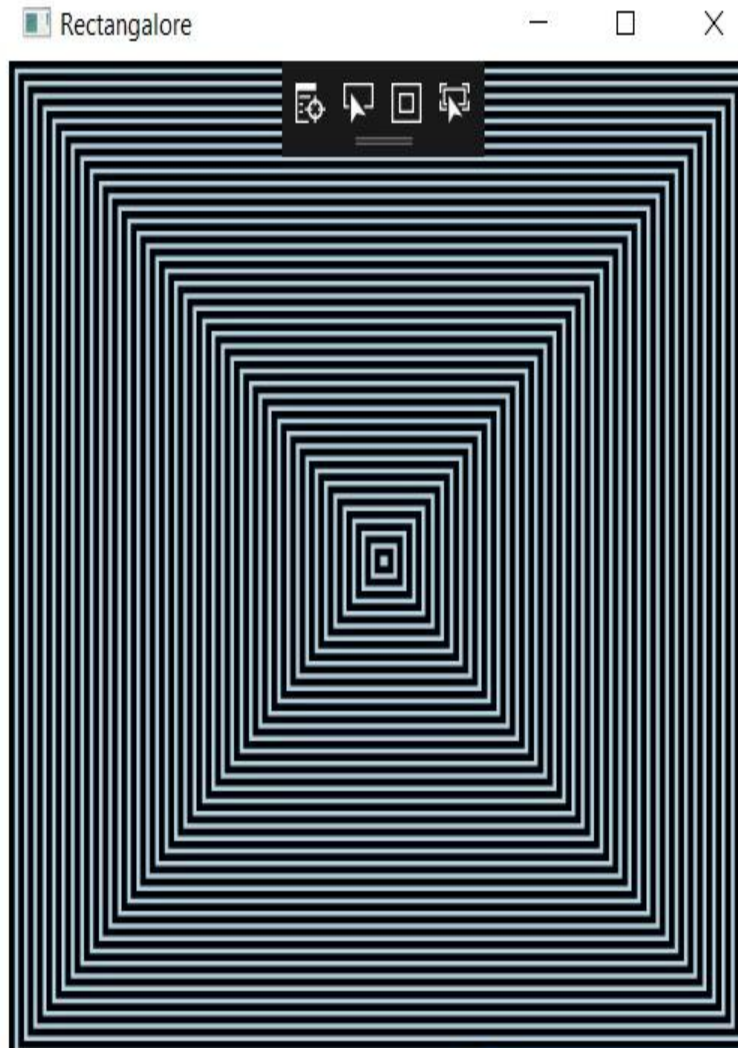
Преобразование фигур

```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "Black";
    GraphicsWindow.Title = "Rectangalore";
    GraphicsWindow.Width = 400;
    GraphicsWindow.Height = 400;
    GraphicsWindow.Show();

    GraphicsWindow.PenColor = "LightBlue";

    for (int i = 1; i <= 200; i+=5) {
        GraphicsWindow.DrawRectangle(200 - i, 200 - i, i * 2, i * 2);
    }
}
```

Преобразование фигур

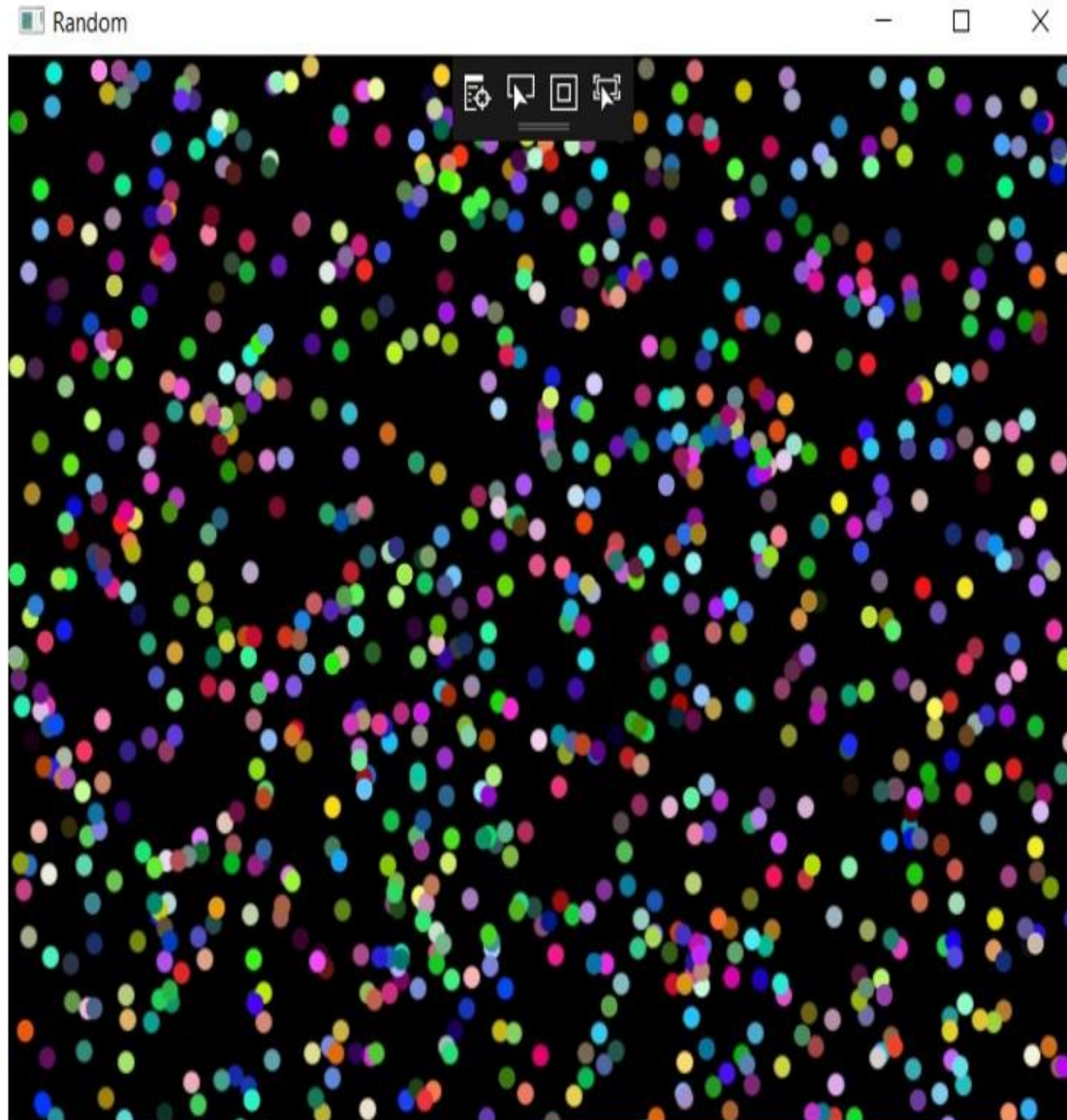


Преобразование фигур

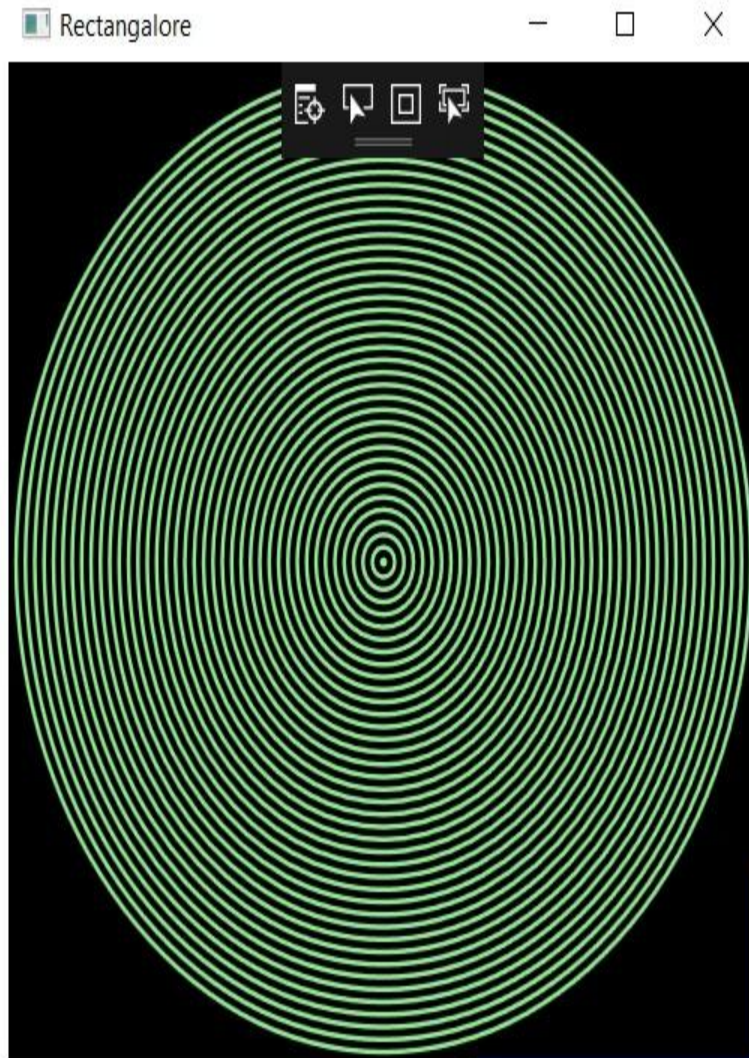
```
static void Main(string[] args)
{
    GraphicsWindow.BackgroundColor = "Black";
    GraphicsWindow.Title = "Random";
    GraphicsWindow.Width = 640;
    GraphicsWindow.Height = 480;
    GraphicsWindow.Show();

    Random rnd = new Random();
    for (int i = 1; i <= 1000; i++) {
        GraphicsWindow.BrushColor = GraphicsWindow.GetRandomColor();
        int x = rnd.Next(640);
        int y = rnd.Next(480);
        GraphicsWindow.FillEllipse(x, y, 10, 10);
    }
}
```

Преобразование фигур



Самостоятельная работа



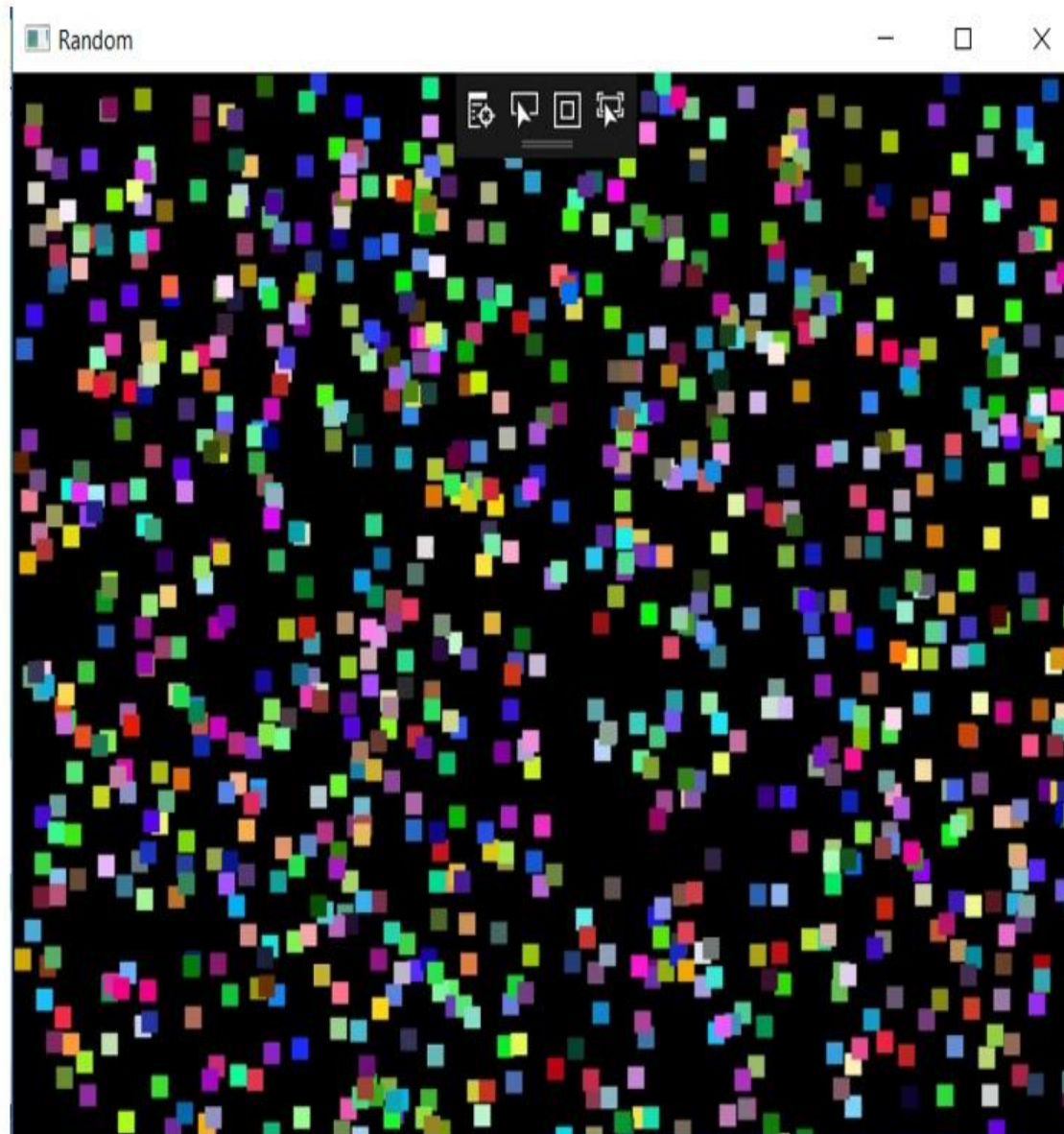
Самостоятельная работа

```
class Program
{
    static void Main(string[] args)
    {
        GraphicsWindow.BackgroundColor = "Black";
        GraphicsWindow.Title = "Rectangalore";
        GraphicsWindow.Width = 400;
        GraphicsWindow.Height = 400;
        GraphicsWindow.Show();

        GraphicsWindow.PenColor = "LightGreen";

        for (int i = 1; i <= 200; i+=5) {
            GraphicsWindow.DrawEllipse(200 - i, 200 - i, i * 2, i * 2);
        }
    }
}
```


Самостоятельная работа

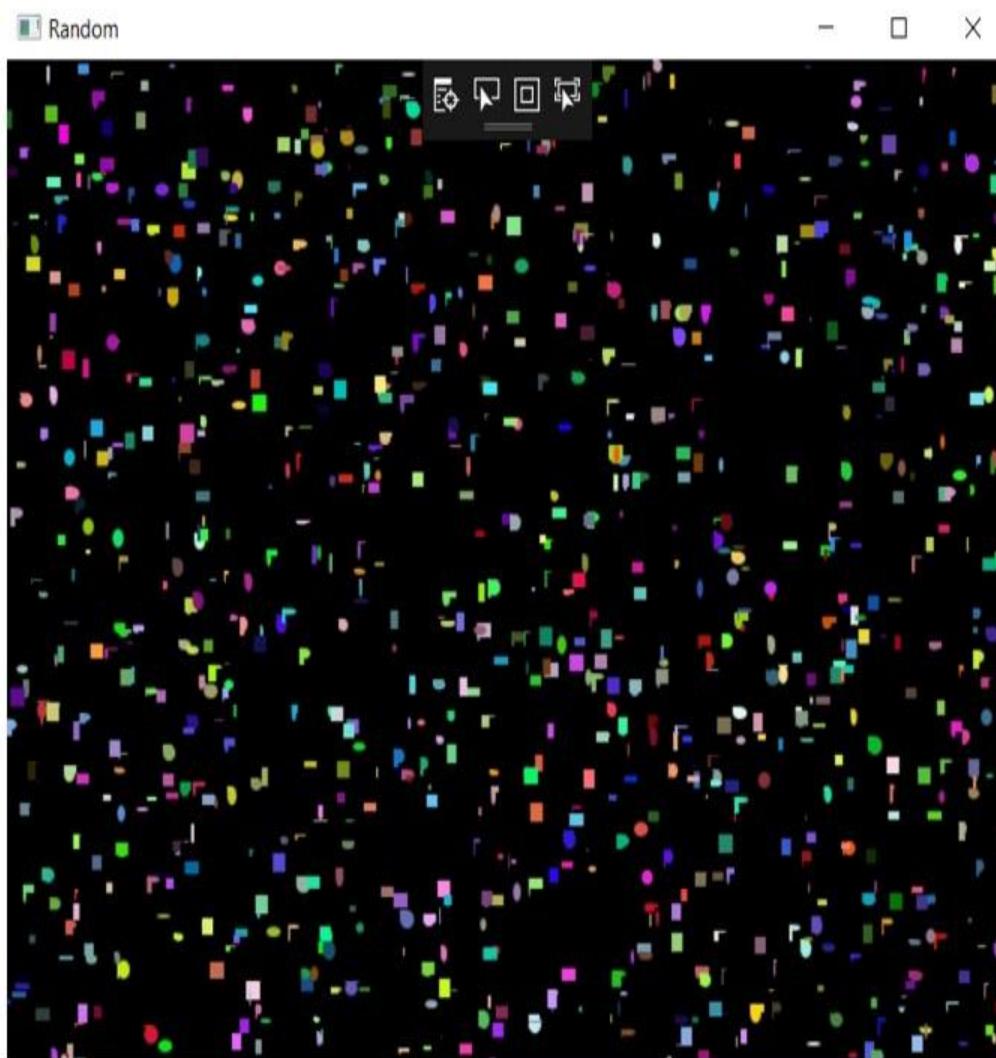


Самостоятельная работа

```
class Program
{
    static void Main(string[] args)
    {
        GraphicsWindow.BackgroundColor = "Black";
        GraphicsWindow.Title = "Random";
        GraphicsWindow.Width = 640;
        GraphicsWindow.Height = 480;
        GraphicsWindow.Show();

        Random rnd = new Random();
        for (int i = 1; i <= 1000; i++) {
            GraphicsWindow.BrushColor = GraphicsWindow.GetRandomColor();
            int x = rnd.Next(640);
            int y = rnd.Next(480);
            GraphicsWindow.FillRectangle(x, y, 10, 10);
        }
    }
}
```

Домашнее задание



Проверка знаний

- Для чего нужен метод `GraphicsWindow.Show()`?
- Что делает этот метод `FillEllipse()`? Какие параметры он принимает?
- Для чего используют `GetRandomColor`?

