

# C# Programming

Pens, brushes and color

# What do pens do?

- In C# a pen allows us to draw lines
- Lines can be joined to create shapes
- Shapes can be things like rectangles, ellipses, straight lines.
- If drawing with a pen, shapes will be outlined and not filled

# How to code a pen

- `Pen pen = new Pen(Color.Blue, 2);`
- Notice that we use the standard object instantiation
- Pen takes two arguments
  - The color
  - The thickness (in pixels)

# How to use a pen

- Once we have instantiated the pen, we only need call it by name to use it in a method
- `G.DrawLine(pen, StartPoint, EndPoint);`

# What does a brush do?

- A brush is used to draw objects that are filled or solid.
- They are created in the same way that a pen is created
- Since a brush creates a fill, there is no need to indicate the width.

# How to code a brush

- `SolidBrush brush=new SolidBrush(Color.Black)`
- Again, notice it is instantiated just like the pen; however, it does not have an argument for size.

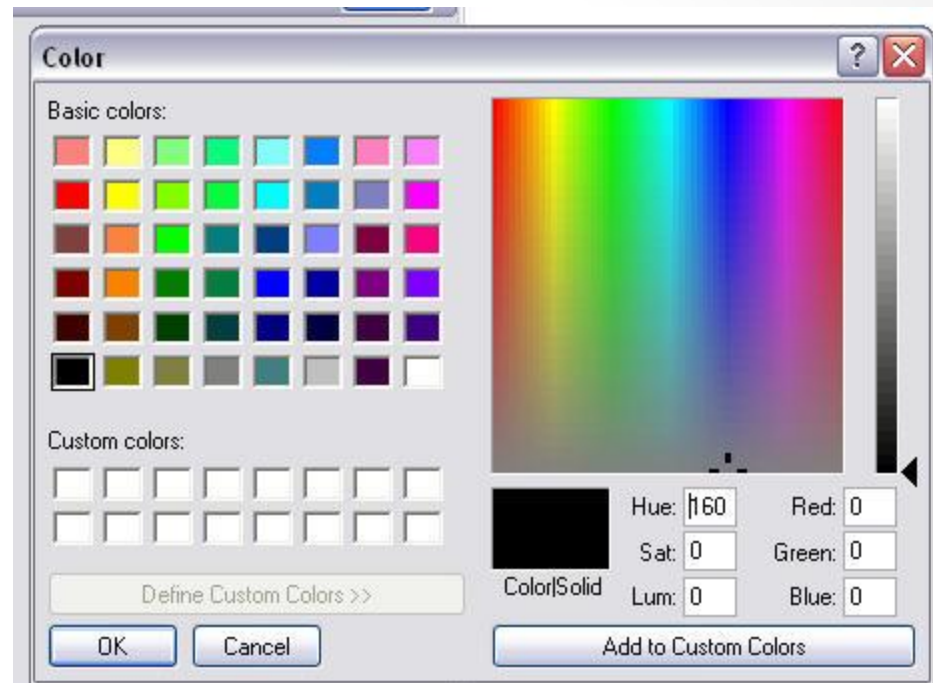
# How to use the brush

- `g.FillEllipse(brush, 10, 10, 200, 300)`
- Again, we call it by name from within a method.
- This draws an ellipse that is 200 px. wide and 300 px high, and it's x and y positions are 10.

# The color dialog box

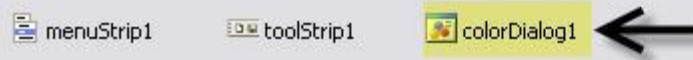
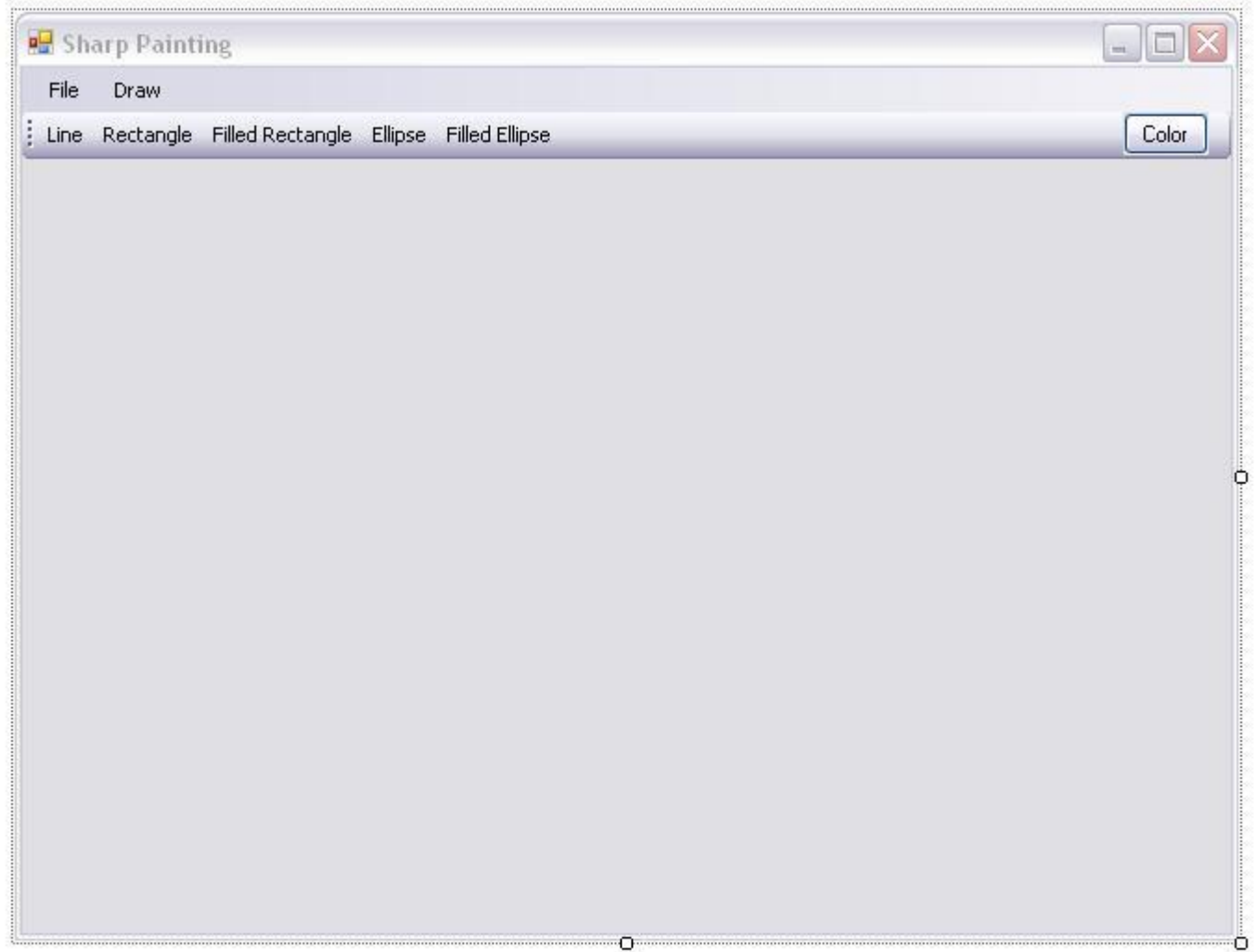
- One of the tools available in C# is the color dialog box.
- It allows you to choose your color either from swatches or from a color wheel.
- Using the color dialog box allows the user to access all colors from inside the program.





# How to use the color dialog box

- First, you need to make it available by dragging the tool onto your form, it will show up at the bottom of the screen.
- Name the dialog box and make note of the name, as you will need to reference it when coding.



# Using the color dialog with a pen

- You will instantiate the pen in the usual manner, but will replace the color with a reference to the color dialog box.
- `Pen pen = new Pen(colorDialog1.Color, 2);`
- Notice that I still need to indicate the width of the pen.

# Using the color dialog with a brush

- This works just like the pen
- SolidBrush Brush = new  
SolidBrush(colorDialog1.Color);
- Again, notice that the brush has only the one  
argument...color.

# Disposing of drawing tools

- Drawing tools such as pens and brushes take up memory.
- Unless you are going to use a pen or brush throughout the program, you dispose of it to free up memory.
- `g.dispose();`