Summer Training 2009

Second Year

OOD: design and develop better

Lab2

# Part1: Button for each shape

1. Encapsulate all member variables using PROPERITIES
2. Add toolbar to the form and some buttons on it
3. Add ENUM for the **ShapeName**
4. Set enumeration value "**shapeToBeDrawn**" in "buttonClick" and modify the creation code in "mouseClick"

# Part2: Draw the shape by any size (using 2 mouse clicks)

* 1. Handle the "mouseClick" to identify if it's the first click or the second click
  2. Calculate the correct **TopLeft** point and the **Dimensions** of each shape
  3. Modify the creation code in "mouseClick"

## Hands-on:

Add **Circle** shape and handle its drawing method such that the first click is the circle center and the second click is the circle boundary

(**Hint:** use distance between 2 points equ. To calculate the circle radius)

Focus on the following:

1. Make **Property** for the circle Radius
2. Implement all abstract methods in the **Circle** class
3. Add **CIRCLE** to the **ShapeName** ENUM and handle its setting in "buttonClick" and its checking in "mouseClick"

# Part3: Select the shape and change its properties

1. Add abstract method "**PointInShape**" to the **Shape** class
2. Implement it in each shape
3. Handle the "mouseClick" to identify the **selectedShape**
4. Add menu item to change the shape color
5. Add **colorDialog** to theForm
   1. Handle the "menuClick" to show the **colorDialog** and change the color of the selected shape (make sure that there's a selected shape)

## Hands-on:

Change the scale of the selected shape:

* 1. Create a **scaleForm** to enter the scale factor
  2. Add OK button to the Form and set its **DialogResult** property to **OK**
  3. Add local variable and its property to hold the numerical value of the **scaleFactor** in the **scaleForm**
  4. Handle the OK button of the **scaleForm** to set the numerical value of the **scaleFactor**
  5. Add menu item to scale the selected shape
  6. Handle the "menuClick" to show the **scaleForm** and change the scale of the selected shape (make sure that there's a selected shape)

# TODO Tasks for students:

1. Translate the shape using 2 mouse clicks
2. Translate the shape using drag and drop
3. Draw the shape using drag and drop