Swinburne University of Technology

Object Oriented Programming (2022 S1)

Doubtfire Submission

Task 2.2P: Drawing Program - A Basic Shape

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2022/04/15 14:03

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April 15, 2022

```
using System;
using SplashKitSDK;

namespace ShapeDrawer
{
    public class Program
    {
        public static void Main()
        {
            new Window("Shape Drawer", 800, 600);
            Shape myShape = new Shape(); //new shape object, assign a local
             ↪  variable to it

            do
            {
                SplashKit.ProcessEvents();
                SplashKit.ClearScreen();

                myShape.Draw(); // call the Draw method

                if (SplashKit.MouseClicked(MouseButton.LeftButton) == true) // when
                 ↪  the user left clicks it will change the position of the shape
                {
                    myShape.X = SplashKit.MouseX(); //change shape X
                    myShape.Y = SplashKit.MouseY();//change shape Y
                }
                // when the user presses the spacebar while the mouse is over the
                 ↪  shape it will change color.
                if (myShape.IsAt(SplashKit.MousePosition())) // Checks if the mouse
                 ↪  is over the shape
                {
                    if (SplashKit.KeyTyped(KeyCode.SpaceKey) == true) // checks if
                     ↪  the user enters the spacebar
                    {
                        myShape.Color = SplashKit.RandomColor(); // when user
                         ↪  enters the spacebar the shape changes to a random color.
                    }
                }
                SplashKit.RefreshScreen();
            } while (!SplashKit.WindowCloseRequested("Shape Drawer")); //end of the
             ↪  loop
        }
    }
}
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using SplashKitSDK;
using System.Threading.Tasks;


namespace ShapeDrawer
{
    public class Shape
    {
        private Color _color; // field variable to assign a color for the shape
        private float _x, _y; //field variable to assign the position of the shape
        private int _width, _height; //field variable to assign the size of the
        ↪  shape

        public Shape() // The Shape Constructor
        {
            _color = Color.Black; //set shape color to black

            _x = 0; //set position for the shape
            _y = 0;

            _width = 100; // set shape size
            _height = 100;
        }

        public Color Color //set Color property
        {
            get { return _color; } //returns the value from the _color field
            set { _color = value; } //sets a value to the _color field
        }

        public float X //set position X property
        {
            get { return _x; }
            set { _x = value; }
        }

        public float Y //set position Y property
        {
            get { return _y; }
            set { _y = value; }
        }

        public int Width //set Width Value property
        {
            get { return _width; }
            set { _width = value; }
        }

        public int Height //set Height Value property
```

```
53          {
54              get { return _height; }
55              set { _height = value; }
56          }
57
58          public void Draw() // Draw method
59          {
60              SplashKit.FillRectangle(_color,_x, _y, _width, _height);
61          }
62
63          public bool IsAt(Point2D pt) //IsAt method
64          {
65              if ( (pt.X >= _x) && (pt.X <= _width) && (pt.Y >= _y) && (pt.Y <= (_y +
                ↪  _height)) )
66                  return true;
67              else
68                  return false;
69          }
70
71      }
72
73
74  }
```

Default shape colour is black

When User press space while hovering the mouse over the shape and when the user left clicks the shape changes its position