

## Lab 16 – Racket Graphics

**DrRacket** includes a number of **teachpacks** to supplement programs with additional tools (for example, a **teachpack** might extend the language with a procedure for playing sounds).

We will use the **draw.rkt** teachpack.

You need to be in “**Advanced Student**” (**Language**) mode to use a **teachpack**, and then add the necessary **teachpack**.

### Landscape - Teachpack: draw.rkt

The **draw.rkt** teachpack allows you to draw shapes.

On the top menu select **Language → Add Teachpack...** Select **draw.rkt** from the list of **Preinstalled Teachpacks** and click **OK**. You must click **Run** before you can use the teachpack.

The following is a list of statements that work with the **draw.rkt** teachpack:

- To **open a canvas**
  - > (start 600 600)
- To **draw a line**, you need 3 parameters
  - Coordinates of x and y where the line starts (this is defined by **make-posn**)
  - Coordinates of x and y where the line ends
    - Color: The main colors are **'white 'yellow 'red 'blue 'green 'black**
      - Color names are case **insensitive**

```
> (define p (make-posn 0 0))
> (define q (make-posn 300 300))
> (draw-solid-line p q 'red)
```
- To **draw a hollow circle**, you need 3 parameters
  - Coordinate of x and y, where the center is
  - Length of the radius
  - Color

```
> (draw-circle q 100 'red)
```
- To **draw a solid circle**, you need 3 parameters as if you were drawing a hollow circle

```
> (draw-solid-disk q 100 'blue)
```
- To **draw a rectangle**, you need 4 parameters
  - Coordinates of x and y for the upper-left corner
  - Width
  - Length
  - Color

```
> (draw-solid-rect (make-posn 450 450) 50 100 'green)
```
- To **draw a string**, you need 2 parameters
  - Coordinates of x and y to define where the string starts
  - The string enclosed in quotes

```
> (draw-solid-string (make-posn 10 100) "Hello!")
```

For this lab, you will need to draw something that is recognizable (this means, **NO** abstract art), using the **draw.rkt** **teachpack**. Draw an image that contains different shape types (circle, squares, and/or rectangles of different sizes), **at least 5 different colors**. The **background CANNOT** be white.

The statements above should be sufficient to draw any shape, but you are welcome to browse the Web and find more options.

