

Logo Activity 7

Location, Location, Location

In this activity, we will use procedures and subprocedures to position the cursor on the screen. A common way to handle movement is to write a procedure that does the movement. In the following example two new commands (Setx and Sety) are demonstrated.

```
TO RECTANGLE
  REPEAT 2[FD 100 RT 90 FD 70 RT 90]
END
```

```
TO PLACE.RECT
  CS
  PU
  SETX -200
  SETY -100
  PD
END
```

```
TO PICTURE
  PLACE.RECT
  RECTANGLE
END
```

Test the procedure by typing in the procedure's name <PLACE.RECT>. You will notice SETX and SETY are used to move the turtle to the given x and y coordinates. If the procedure does not place the turtle in the lower left corner then edit your procedure until your commands match those listed above. After you are convinced that PLACE.RECT correctly positions your turtle, test the procedures by typing PICTURE.

After the rectangle has been drawn, type HOME to allow the cursor to move back to its home position (the center of the screen). You will notice that there is a line from the last point of the RECTANGLE to the center of the screen. This was done just to demonstrate the use of the HOME command and show the relative position of a negative X and negative Y coordinate.

Another way to write the same thing is to use the SETXY command in place of the two commands. Here is what the modified code looks like.

```
TO PLACE.RECT
  CS
  PU
  SETXY -100 -80
  PD
END
```

Have you noticed that after turning to the right and left it can be confusing keeping track of

the angle of the turtle? Test the following procedure to learn about the HEADING and SETHEADING commands.

```
TO WHICHWAY  
  REPEAT 10 [FD 45 RT RANDOM 360]  
END
```

Test the procedure by typing WHICHWAY. This leaves you very uncertain about the direction the turtle is heading.

If you type PRINT HEADING, the commander will report the turtle's current heading. This heading can be reset using the command SETHEADING 0 to point the turtle up, SETHEADING 270 to point the turtle to the left. SETHEADING command may be used within a procedure set a new direction. Give it a try!

Logo Assignment #7 :Logo Movement

Name_____

- 1) Write a program to display your name on the screen. You must have at least four different letters, and EACH letter must be created by its own procedure. The placement of the letters on the screen is to be done by a PLACE.LETTER procedure using the SetXY and SetHeading commands.

- 2) Preliminary top-down diagrams for any programming problem should be thought out and written down before writing any source code. This is the same principle as in an English class where the outline of a paper should be written before writing the paper. In actual practice, students frequently write their English paper first and then write an outline to match the paper. The result is a method that is less time efficient where the writer's key thoughts in the English papers wander around. Programming in this fashion tends to produce programs that are not concise or as structured as they should be.
 - a) Sketch a picture of a car. Visualize the car in your mind. Include in your picture only car parts that are visible as you look at the car from the outside. YOU MUST USE EACH OF THE COMMANDS discussed in this lesson to get full credit on this problem. You must have a minimum of 5 procedures!

Extra Credit:

- 1) Create each of the 26 letters of the alphabet. Later in another Extra Credit Activity we will make a word processor that will display these letters as you type them from the keyboard. Name this page "LETTERS.LGO". Save the work to your network drive to ensure that the page does not accidentally get erased.