C H A P T E R 3

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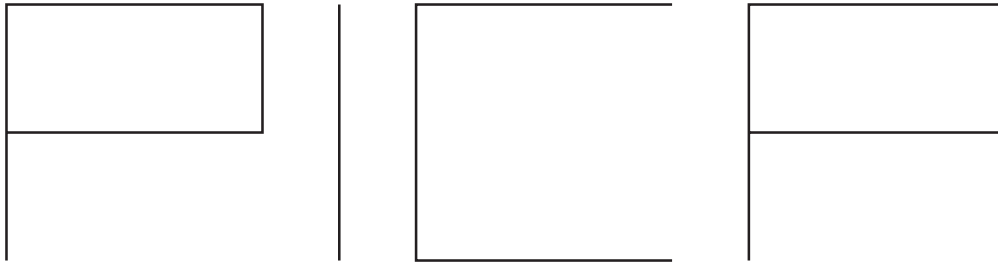
Of Robots and Men

In this chapter I describe the creation of robots and the different types of movements that robots know about and are capable of performing. I offer some simple experiments for you to perform, so that you can practice what you have learned in the previous chapters. I also will show you how robots can change direction along the fixed, or *absolute*, points of the compass.

CHAPTER 4

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Directions and Angles
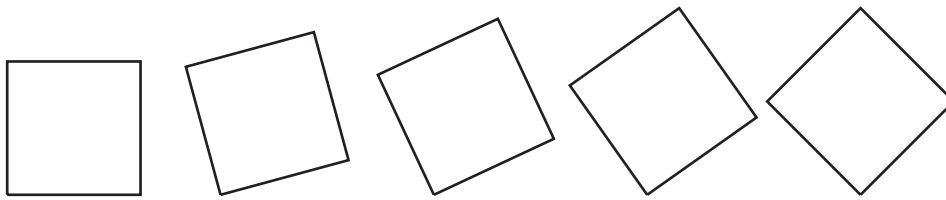
By now, you should be getting tired of drawing figures only in *fixed* directions. In this chapter you will learn how to change the direction in which a robot points, allowing the robot to point in *any* direction, to turn through any angle relative to its current position, and therefore to draw lines in any direction. If you already understand clearly what an angle is and how to measure angles in degrees, you may skip the section "The Right Angle of Things" and then proceed to the examples and experiments in the section "Simple Drawings."

I will begin by presenting the elementary messages for changing direction that robots understand. I am going to hide the robots from the illustrations using the message `beInvisible` so that you can get clearer pictures.

C H A P T E R 7

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Looping
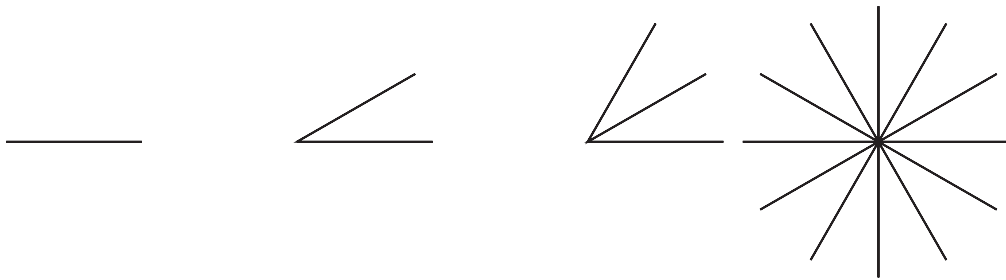
By now, you must think that the job of robot programmer is quite tedious. You probably have a number of ideas for interesting drawings, but you just don't have the heart to write the scripts to draw them, since it appears that the number of lines that you have to type gets larger and larger as the complexity of the drawing increases. In this chapter, you will learn how to use *loops* to reduce the number of expressions given to a robot. Loops allow you to *repeat a sequence of expressions*. With a loop, the script for drawing a hexagon or an octagon is no longer than the script for drawing a square.