

Java Fundamentals

2-6: Control Statements

Practice Activities

Lesson Objectives:

- Define multiple control statements to control animation timing
- Create an animation that uses a control statement to control animation timing
- Recognize programming constructs to invoke simultaneous movement

Vocabulary:

Identify the vocabulary word for each definition below.

	Executes procedures simultaneously.
	Tells the computer program how to perform the procedure.
	Default control statement in Code editor that executes procedures in sequential order.

Try It/Solve It:

Open the "WhiteRabbitProject" project you saved in the previous lesson. You will use this project for all of the practice activities listed below.

1. Edit arguments.
 - a. Add a magic wand to the scene. Set the properties so that the magic wand is invisible and so that it is placed to the left side of the White Rabbit.
 - b. Program the following animation: The White Rabbit says "Wand appear!" and the magic wand becomes visible.
 - c. Edit the programming instructions so that the duration the SAY command is 2 seconds and the Font Color and Bubble Outline color of the SAY command is purple.
 - d. Save the project.
2. Create simultaneous movement.
 - a. Use a DO TOGETHER control statement the White Rabbit's left hand to rise up with a natural motion before saying "Wand appear!"
 - b. The wand should move to the rabbits hand.
 - c. Save the project.
3. Animate an object riding a vehicle.
 - a. Animate the White Rabbit holding the wand in his hand and acting as the vehicle for the magic wand.
 - b. Animate the White Rabbit to take two hops forwards while carrying the magic wand.
 - c. Save the project.
4. Animate the rider object to stop riding a vehicle.
 - a. Program the following animation: The baby bunny says "Hey!"
 - b. The white rabbit turns to face the bunny" while dropping its arm.
 - c. The bunny says "Magic Wand! Come to ME!" Then the wand moves to the baby bunny.
 - d. The bunny takes 3 hops forward while holding the magic wand in his hand.
 - e. Save the project.

Optional Activities:

Complete the following optional practice activities below to continue practicing the concepts you learned in this lesson.

1. Browse the gallery tab “Gallery by Theme”. Set up an initial scene using the objects in the Fantasy theme. Add a biped object to the scene. You could add a person, or challenge yourself by adding a unique biped object such as a troll.
 - a. Declare a “walk” procedure to program the biped object to walk.
 - b. Test and debug the animation until the biped object walks with lifelike motions.
 - c. Save the project.
2. Create a new project using the snow template. Add an ice mountain and icebergs to the scene. Add a helicopter and person object to the scene.
 - a. Program the person to get inside of the helicopter.
 - b. Then, program the helicopter to fly around the ice mountain and icebergs, carrying the person inside. Hint: Declare a “fly” procedure that makes the helicopter turn its propellers as it flies.
 - c. Program the camera to follow the helicopter as it flies around the scene.
 - d. Save the project.