

Introduction to Programming and Computer Science/Electronics

Lesson 73



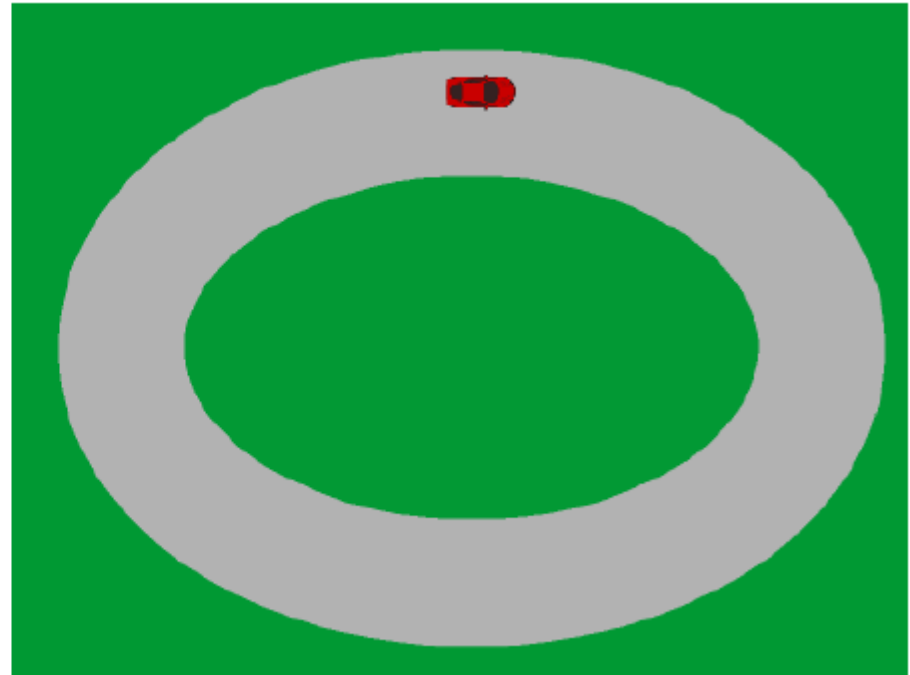
DRIVING GAME

Driving Game

<http://o.ooli.ca/en/scratchgames/car>

Drive around a track in your fast red car!

The game uses an oval race track as the background. There is one sprite in the program, a red car. If you click on the red car sprite, you will see that there is already code for turning the car to the right when you press the right arrow key on the keyboard. Try it out. Click on the green flag to start the program, and then press the right arrow key. The car will turn.



DRIVING GAME

Useful blocks for this exercise

Motion

move steps

turn  degrees

Sensing

key pressed?

touching color

Data

set speed to

change speed by

speed

Events

when  clicked

Control

forever 

if then 

Operators

and

<

DRIVING GAME

1. Driving

EASY Right now, the car can turn but it doesn't go anywhere. Change the program so that the car always moves forward slowly.

Now the car moves forward, and you can press the right arrow key to turn right. Can you drive around the race track?

Try changing the program so that when you press the left arrow key, the car turns to the left. Then you can turn in both directions.

Now change the program so that the car doesn't move forward all the time. Have it only move forward when you press the up arrow key.

2. No Shortcuts

MEDIUM Right now, you don't have to stay on the road. You can drive over the grass as a shortcut. This is unfair. Can you make it so that the car moves forward more slowly if it is touching the green area?

DRIVING GAME

Try It: Different Tracks

EASY The race track doesn't need to be an oval. You can change it. Click on the "stage" on the right of the screen. Then click on the backdrop tab. Try changing to a different race course background.

Try It: Multiplayer

MEDIUM You can change your program so that two people can drive cars at the same time. Make a copy of the car and paint this new car to look different. Then change the controls for this new car so that it uses different keyboard buttons for moving. Now try racing against a friend to see who is fastest.

DRIVING GAME

Try It: Speed and Brakes

HARD

Your car only has one speed. It can move forward or it can stop. Let's change the program so that you can go different speeds.

First, create a variable called "speed" (only for this sprite). A variable is a number that you can change. Instead of the car always moving forward by the same number steps every time, you can change that number.

Then, in your code, whenever you move forward, replace the number of steps you move forward by the "speed" variable. If the "speed" variable contains a bigger number, then the car will move forward by a bigger amount, and the car will go faster. If the "speed" variable contains a smaller number, then the car will move forward by a smaller amount, and the car will move slower.

Change your program so that when you press the up arrow key, the car goes faster. Also change it so that when you press the down arrow key, the car goes slower.

Does the car still move slowly when you drive on the grass? What is the fastest you can drive around the track? Can you make the car drive backwards?