CH9_102

EXERCISE

# SPHERE SEARCH

## Exercise Files

*Starter – ""Kit/gpgt/server/scripts/gpgt/chapter9/exercise_102.cs""*
*Answers – ""Kit/gpgt/server/scripts/gpgt/chapter9/answers/exercise_102_f.cs""*

## Exercise Mission

*Chapter 9: ""102_ContainerRaycasting: Sphere Search""*

# Synopsis

In this exercise, we will test your ability to write the code needed to search for objects in a spherical area, using the built-in sphere searching features discussed in chapter 9.

## Prerequisites

1. *ch1_001.pdf ""Using The Kit""*

## Exercises

1. *Searching a Sphere (pg 2)*

SPHERE SEARCH

# 1 Searching a Sphere

**Goal:** Given the provided code, implement a basic sphere search and feed the resulting ""found objects"" into code that will visually display that an object was ""found"".

**Starter Code:** For this example, all of the functional code, except for the search, has been implemented. Your only job is to modify some marked segments of this code to do the sphere search.

The code you need to modify is located between two markers ""// EXERCISE BEGINS HERE"" and ""// EXERCISE ENDS HERE"".

```
// EXERCISE BEGINS HERE
   //?????

   //while( isObject( %curObject = ?????) ) )
   //{
      //%curObject.setSkinName( "yellow" );
      //%curObject.schedule( 250 , setSkinName , "red" );
   //}
 // EXERCISE ENDS HERE
```

**Steps:**

Please uncomment all of the code in the marked area and modify the two highlighted lines (in the code above) to implement a simple sphere search with the following parameters:

- Only find StaticShapes.
- Search in an area centered on the bot's current location. The ID of the bot is stored in ""%theBot"".
- Search a 10 world-unit radius.

 

# SPHERE SEARCH

**Output Goal:**

When you run the completed exercise, you will see a bot running (randomly) around the area. Additionally, you will see a series of concentric paths. As the bots runs around this area, the provided code (once you have updated it) will select any markers on the paths that are within the current search sphere and change them to yellow. As the bot moves around, the selected markers will change, demonstrating that the search is working. Markers not in the search sphere will stay red or change back to red if they were previously found.

See figure 1 below for a sample of what you'll see.

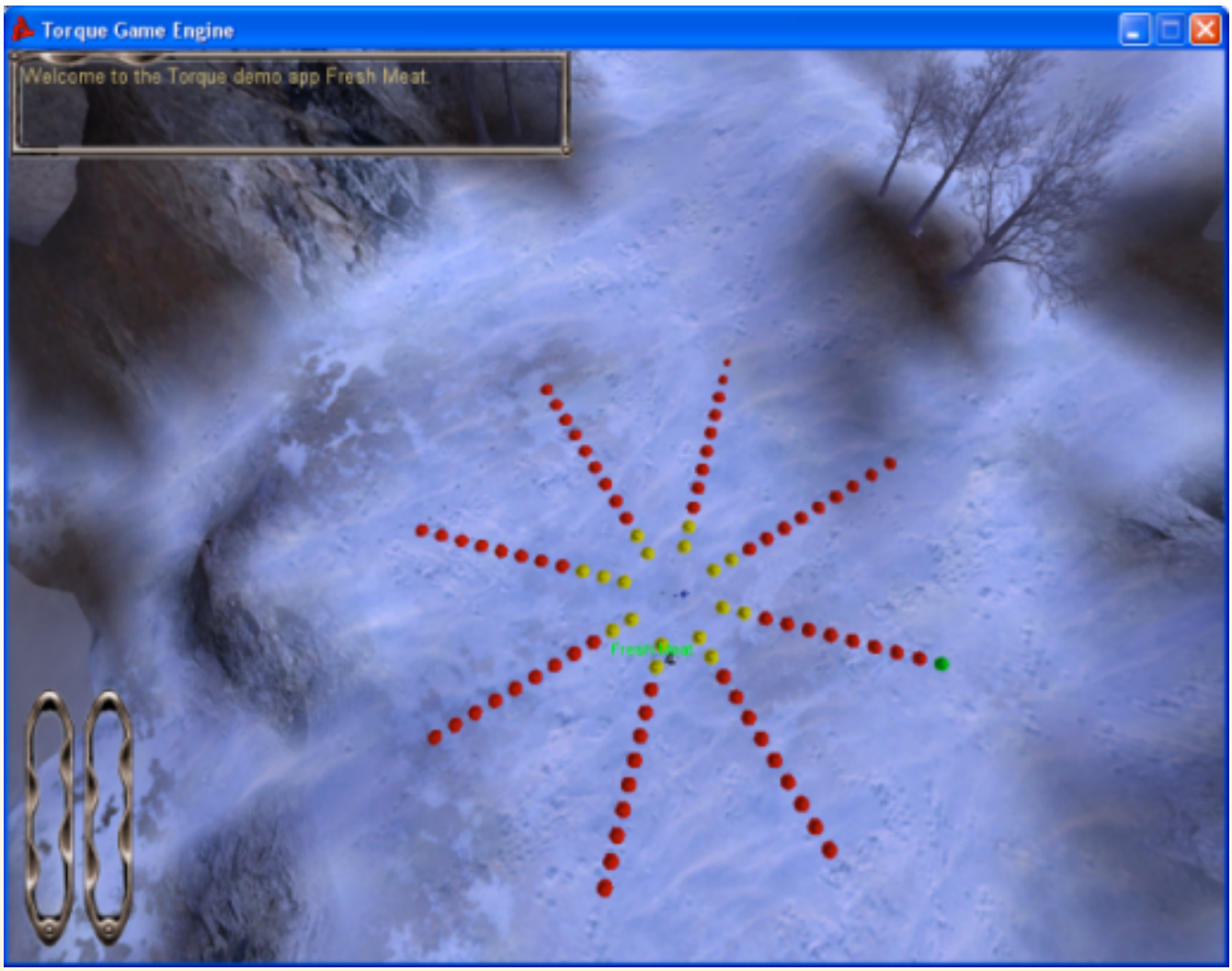


Figure 1. Sphere Search Selection (Yellow Markers)

 