Assignment

Problem:

You are working with a several biologists on a Spotted Owl project. They have been comparing various studies and vegetation types in order to determine the appropriate size of the home range that is required to support a mating pair.

Their modelling tool inputs several environmental factors such as vegetation, climate, proximity to water, etc and outputs a home range stated in hectares. You have the nesting locations stored in the database from a previous study. Before the Spotted Owl reserves are approved they need to know the impact on the timber harvesting land-base. Before one can determine the impact we need a spatial representation of the home range.

Real World PPSP:

- Reword: Determine the buffer distance for a Spotted Owl nesting site
- Inputs: Areas and nesting sites
- Outputs: required distance
- Options, choices special cases: no area for a nesting site, area in hectares
- Repetition: For each area-nesting site combination determine the distance

For this assignment we will write a simple program that converts the area entered in hectares to the required buffer distance in meters that would result in that exact area entered. We will save the repetition for another lab.

Suggest steps:

- Prompt the user for an area in hectares
- Convert the area to square meters by multiplying the number by 10,000
- Reverse the circular area calculation --> square root of (the area in square meters divided by PI)
- Report the required radius to the user

Hints:

- Much of the code from the previous example will work with minor alterations
- Use Math.sqrt(area divided by PI) or Math.pow(area divided by PI, 0.5)

STEP 01	**Open IntelliJ** **Create a new Java Project named: m01_BufferDistance** **Use the template** **Name the base package: bcit.gist7010** **Make sure your place the project in the following folder: H:\var\gist\7010\wksp_dt** **Click Finished**
STEP 02	**Complete and test the assignment**

Marking Guide

Item	Value
The program works	7
Indentation is correct and consistent	2
Comments	1
Total	**10**