Lab 2 - Exercise – All sections

fgets/sscanf, arithmetic operations and the math library

CS 262 – Spring 2022

The main goal of this exercise is to practice using `fgets()` and `sscanf()` to get user input, how to perform basic arithmetic operations, and how to properly include the `math` library with the `gcc` compiler.

Description

Write a C program to calculate the volume of a sphere and use the combination of `fgets()` and `sscanf()` to get user input.

User input ranges from `0 - 100`, so your program ***must return the correct result for all user input***. i.e. declare a suitable data type to store the volume value.

Equation:

$$v = \frac{4}{3}\pi r^3$$

Requirements:

- Define a constant for `pi` with value `3.1415927`
- Define a constant `SIZE` for using it on `fgets()` and `sscanf()`
- Declare an array of characters `inBuf` to get the input user
- Print the result using the scientific format rounded to 2 decimals

Example run 1:

```
**************************************************
This program calculates the volume of a sphere
**************************************************
Enter the Radius: 15.8
The volume is: 1.65e+04
```

Example run 2:

```
**************************************************
This program calculates the volume of a sphere
**************************************************
Enter the Radius: 100
The volume is: 4.19e+06
```