

CSCE 206 Fall 2019 Lab: Assignment #2

Submission Deadline: 23:59, Oct 06, 2019, Sunday.

- 1. Follow the [submission guideline](#) to submit the assignment through eCampus.**
- 2. Add comments to your code, including your name, UIN and the class section you are in with the block comments to the head of your code file.**

Question 1. Geometry Calculator (50 points)

Write a program to calculate surface area and volume of a sphere (ball). The program will ask user to input radius (meter(s)) of a sphere and return its area and volume (output should round to three decimal places). Use macro **#define** for value of π (suppose $\pi = 3.1415927$). Learn to use **pow** function for evaluating square and cubic in **math.h** of C programming library (Google "pow c programming"). You can use **scanf** function and **double** type for radius input. Name your program file Hw2_q1_code.c.

Example input and output: (purple texts are what the program should print on the screen to instruct the user, the black texts are what the user types in or results output.)

Please input a radius (meter(s)) for a sphere: 11.32

Surface area (square meter(s)): 1610.285, Volume (m³): 6076.142

```
Please input a radius (meter(s)) for a sphere: 11.32
Surface area (square meter(s)): 1610.285, Volume (m^3): 6076.142
```

When using GCC to compile Question 1, Lab2, please add **-lm** to the end of command to avoid error return.

Like: "gcc filename.c -o outputfilename -lm"

Question 2. Sorting (50 points)

For random input of three numbers, design a C program to store these three numbers and sort them and then output your results from smallest to largest. You can use **scanf** function and use **double** type for numbers input. Name your program file Hw2_q2_code.c.

Example input and output: (purple texts are what the program should print on the screen to instruct the user, the black texts are what the user types in or results output.)

Please input three numbers: 112.38 43.77 5.91

Sorting smallest to largest: 5.91 43.77 112.38

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```
Please input three numbers: 112.38 43.77 5.91
Sorting smallest to largest: 5.910000 43.770000 112.380000
```

```
Please input three numbers: 43.77 5.91 112.38
Sorting smallest to largest: 5.910000 43.770000 112.380000
```

```
Please input three numbers: 43.77 112.38 5.91
Sorting smallest to largest: 5.910000 43.770000 112.380000
```

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Please input three numbers: 5.91 43.77 112.38
Sorting smallest to largest: 5.910000 43.770000 112.380000
```

Hint: Use the method you learned from Problem 2 of Lab 1.