

**CS 211 Object Oriented Programming**

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**Lab session - # 1**

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**Topic:**

## Review

## Problem 1.

5 point

*Mailing Address* Create a program that displays your name and complete mailing address formatted in the manner that you would usually see it on the outside of an envelope. Your program does not need to read any input from the user.

## Problem 2.

5 point

*Hello* Write a program that asks the user to enter his or her name. The program should respond with a message that says hello to the user, using his or her name.

### Problem 3.

5 point

*(Area and perimeter of a rectangle)* Write a program that displays the area and perimeter of a rectangle with a width of 4.5 and a height of 7.9 using the following formula:

- $area = width \times height$
- $perimeter = 2 \times (width + height)$

### Problem 4.

5 point

*Compute the volume of a cylinder* Write a program that reads in the radius and length of a cylinder and computes the area and volume using the following formulas:

- $\text{area} = \text{radius} * \text{radius} * \text{Pi}$
- $\text{volume} = \text{area} * \text{length}$

Here is a sample run:

Enter the radius and length of a cylinder: 5.5 12

The area is 95.0331

The volume is 1140.4

### Problem 5.

5 point

*Compute the volume of a triangle* Write a program that reads in the length of sides of an equilateral triangle and computes the area and volume using the following formulas:

$$area = \frac{\sqrt{3}}{4} * side^2$$

$$volume = area * length$$

Here is a simple run:

Enter length of the sides and height of the Equilateral triangle:

3 5

The area is 3.89

The volume of the Triangular prism is 19.48

## Problem 6.

5 point

*Tax and Tip* The program that you create for this exercise will begin by reading the cost of a meal ordered at a restaurant from the user. Then your program will compute the tax and tip for the meal. Use your local tax rate when computing the amount of tax owing. Compute the tip as 18 percent of the meal amount (without the tax). The output from your program should include the tax amount, the tip amount, and the grand total for the meal including both the tax and the tip. Format the output so that all of the values are displayed using two decimal places

## Problem 7.

5 point

*Cost of driving* Write a program that prompts the user to enter the distance to drive, the fuel efficiency of the car in miles per gallon, and the price per gallon then displays the cost of the trip. Here is a sample run:

```
Enter the driving distance: 900.5
Enter miles per gallon: 25.5
Enter price per gallon: 3.55
The cost of driving is $125.36
```



**Problem 8.****5 point**

Develop a program that reads a four-digit integer from the user and displays the sum of the digits in the number. For example, if the user enters 3141 then your program should display  $3+1+4+1=9$ .

## Problem 9.

C point

reate a program that reads three integers from the user and displays them in sorted order (from smallest to largest). Use the min and max functions to find the smallest and largest values. The middle value can be found by computing the sum of all three values, and then subtracting the minimum value and the maximum value.