



LAB 07 Function

Problem 01:

Write a C++ program that displays a menu to the user to choose among four arithmetic operations, gets the operands from the user and finally call the relevant functions to perform that particular operation. After the display of the results.

Problem 02:

Write a program that displays the following menu:

Geometry Calculator

1. Calculate the Area of a Circle
2. Calculate the Area of a Rectangle
3. Calculate the Area of a Triangle
4. Quit

Enter your choice (1-4):

If the user enters 1, the program should ask for the radius of the circle and then display its area (use functions for each category). Use the following formula:

$$A = \pi r^2$$

Use 3.14159 for π and the radius of the circle for r .

- If the user enters 2, the program should ask for the length and width of the rectangle and then display the rectangles area. Use the following formula:
 $\text{area} = \text{length} * \text{width}$
- If the user enters 3 the program should ask for the length of the triangle base and its height, and then display its area. Use the following formula:
 $\text{area} = \text{base} * \text{height} * .5$
- If the user enters 4, the program should end displaying a message.

Input Validation: Display an error message if the user enters a number outside the range of 1 through 4 when selecting an item from the menu. Do not accept negative values for the circles radius, the rectangles length or width, or the triangles base or height.



Problem 03:

A large company pays its salespeople on a commission basis. The salespeople each receive Rs. 2,000 per week plus 9% of their gross sales for that week. For example, a salesperson who sells Rs. 50,000 worth of chemicals in a week receives Rs. 2,000 plus 9% of Rs. 50,000, or a total of Rs. 6500. Develop the algorithm of the program that input salesperson's gross sales for last week and calculates and displays that salesperson's earnings.

Problem 04:

Assume that a customer wants to have a standard size picture and does not want to go to professional studio. Instead he goes to road side photo booth. The machine shows the following menu on the screen:

- **Colored Photograph**
- **Black & White Photograph**
- **Sketch**

The program should be made with if / else structure. Also, use functions for each category of the picture. The user should be able to enter the category, type and quantity of the photograph he / she wants. The program should be able to calculate the total amount which needs to be paid by the customer. Once the menu has been selected, further options can be selected:

Colored Photograph:

- Passport Size Photograph for Rs. 10/-
- 6' x 4' Photograph for Rs. 30/-
- 5' x 11 Photograph for Rs. 50/-

Black & White Photograph:

- Passport Size Photograph for Rs. 12/-
- 6' x 4' Photograph for Rs. 35/-
- 5' x 11' Photograph for Rs. 60/-

Sketch:

- Passport Size Photograph for Rs. 15/-
- 6' x 4' Photograph for Rs. 40/-
- 5' x 11' Photograph for Rs. 80/-

Make a program which can take the user input and can calculate the total amount to be inserted in the machine.