

### Practice Problems:

- Write a C program that takes an alphabet and checks whether it is vowel or consonant.
- Implement a program that takes the age of a person as input and prints out a message categorizing them as a child (0-12 years), teenager (13-19 years), adult (20-64 years), or senior (65+ years).
- Implement a menu-driven program that allows the user to choose between performing addition, subtraction, multiplication, or division on two numbers. Take the numbers as input from the user.

### Problem: Vending Machine Simulation with Functions

**Description:** You are tasked with creating a C program that simulates a vending machine. The vending machine offers four different cold drinks: **Coke, Pepsi, Sprite, and 7UP**, each with its own stock and price per drink. The program should take input from the user, including the drink choice and quantity. It should then use functions and conditional statements to check if the requested quantity is available for the selected drink and calculate the total bill for the user. If the requested quantity exceeds the available stock, inform the user that the maximum available quantity has been ordered.

#### Detailed Explanation:

**Initialize Drink Information:** Set up the information for each drink, including total available quantity, and price per drink:

Coke: Total drinks available = 10, Price per drink = \$5

Pepsi: Total drinks available = 15, Price per drink = \$7

Sprite: Total drinks available = 15, Price per drink = \$7

7UP: Total drinks available = 25, Price per drink = \$3

#### Function Definitions:

Define functions to handle different aspects of the vending machine transaction:

**calculateBill:** Calculate the bill for a specific drink based on the quantity and price per drink.

**checkAvailability:** Check if the requested quantity is available for the selected drink.

**updateStock:** Update the available stock of the selected drink after purchase.

**User Input:** Ask the user to input the following:

The drink they want to purchase (Coke, Pepsi, Sprite, or 7UP).

The quantity of drinks they want to buy.

### **Conditional Checks:**

Use the checkAvailability function to check if the requested quantity is available for the selected drink.

If the quantity is not available, inform the user that the maximum available quantity has been ordered.

### **Transaction Execution:**

If the requested quantity is available, use the calculateBill function to calculate the bill for the selected drink.

Use the updateStock function to reduce the available stock of the selected drink by the purchased quantity.

**Output:** Display the bill for the selected drink and the total bill for all items ordered.

Welcome to the Vending Machine!

Available Drinks:

1. Coke (Price: \$5, Available: 10)
2. Pepsi (Price: \$7, Available: 15)
3. Sprite (Price: \$7, Available: 15)
4. 7UP (Price: \$3, Available: 25)

Enter the drink number you want to purchase (1-4): 2

Enter the quantity you want to buy: 3

You have ordered 3 Pepsi(s) for a total of \$21.

Available Drinks:

1. Coke (Price: \$5, Available: 10)
2. Pepsi (Price: \$7, Available: 12)
3. Sprite (Price: \$7, Available: 15)
4. 7UP (Price: \$3, Available: 25)

Total Bill: \$21