**Cable Company Billing Program**

**Problem Statement:**

This program demonstrates a program that calculates a customer’s bill for a local cable company. There are two types of customers: residential and business. There are two rates for calculating a cable bill: one for residential customers and one for business customers.

**For residential customers, the following rates apply:**

* Bill processing fee: $4.50
* Basic service fee: $20.50
* Premium channels: $7.50 per channel

**For business customers, the following rates apply:**

* Bill-processing fee: $15.00
* Basic service fee: $75.00 for the first 10 connections; $5.00 for each additional connection
* Premium channels: $50.00 per channel for any number of connections.

The program should ask the user for an account number (an integer) and a customer code. Assume that R or r stands for a residential customer, and B or b stands for a business customer.

**Problem Analysis and Algorithm Design:**

The purpose of this program is to calculate and print the billing amount. To calculate the billing amount, you need to know the customer for whom the billing amount is calculated (whether the customer is residential or business) and the number of premium channels to which the customer subscribes. In the case of a business customer, you also need to know the number of basic service connections. Other data needed to calculate the bill, such as bill-processing fees and the cost of a premium channel are known quantities. The program should print the billing amount to two decimal places, which is standard for monetary amounts. This problem analysis translates into the following algorithm:

1. Prompt the user for the account number and customer type.
2. Determine the number of premium channels and basic service connections, compute the bill, and print the bill based on the customer type:
   1. If the customer type is R or r
      1. Prompt the user for the number of premium channels
      2. Compute the bill
      3. Print the bill
   2. If the customer type is B or b
      1. Prompt the user for the number of basic service connections and number of premium channels
      2. Compute the bill
      3. Print the bill