Practice Program 1:

```cpp
//***********************************************************
// a local cable company. The program processes two types of
//Customer: residential and business.
//***********************************************************
#include <iostream>
#include <iomanip>

using namespace std;

const double RES_BILL_PROC_FEES = 4.50;
const double RES_BASIC_SERV_COST = 20.50;
const double RES_COST_PREM_CHANNEL = 7.50;

//Named constants - business customers
const double BUS_BILL_PROC_FEES = 15.00;
const double BUS_BASIC_SERV_COST = 75.00;
const double BUS_BASIC_CONN_COST = 5.00;
const double BUS_COST_PREM_CHANNEL = 50.00;

int main()
{
    int accountNumber;
    char customerType;
    int numOfPremChannels;
    int numOfBasicServConn;
    double amountDue;

    cout << fixed << showpoint; //Step 1
    cout << setprecision(2); //Step 1

    cout << "This program computes a cable "
        << "bill." << endl;
    cout << "Enter account number (an integer): "; //Step 2
    cin >> accountNumber; //Step 3
    cout << endl;

    cout << "Enter customer type: "
        << "R or r (Residential), "
        << "B or b (Business): "; //Step 4
    cin >> customerType; //Step 5
    cout << endl;
```
switch (customerType) {
  case 'r': 
    cout << "Enter the number" 
          << " of premium channels: "; 
    cin >> numOfPremChannels; 
    cout << endl; 
    amountDue = RES_BILL_PROC_FEES 
                + RES_BASIC_SERV_COST 
                + numOfPremChannels * 
                RES_COST_PREM_CHANNEL; 
    cout << "Account number: " 
         << accountNumber 
         << endl; 
    cout << "Amount due: 
         " << amountDue 
         << endl; 
    break; 
  case 'b': 
  case 'B': 
    cout << "Enter the number of basic " 
         << " service connections: "; 
    cin >> numOfBasicServConn; 
    cout << endl; 
    cout << "Enter the number" 
         << " of premium channels: "; 
    cin >> numOfPremChannels; 
    cout << endl; 
    if (numOfBasicServConn <= 10) 
      amountDue = BUS_BILL_PROC_FEES 
                  + BUS_BASIC_SERV_COST 
                  + numOfPremChannels * 
                  BUS_COST_PREM_CHANNEL; 
    else 
      amountDue = BUS_BILL_PROC_FEES 
                  + BUS_BASIC_SERV_COST 
                  + (numOfBasicServConn - 10) * 
                  BUS_BASIC_CONN_COST 
                  + numOfPremChannels * 
                  BUS_COST_PREM_CHANNEL; 
    cout << "Account number: " 
         << accountNumber << endl; 
    cout << "Amount due: "$ << amountDue 
         << endl; 
    break; 
  default: 
    cout << "Invalid customer type." << endl; 
//end switch 
  return 0; 
}

Sample Run: In this sample run, the user input is shaded.
This program computes a cable bill.
Enter account number (an integer): 12345
Enter customer type: R or r (Residential), B or b (Business): b
Enter the number of basic service connections: 16
Enter the number of premium channels: 8
Account number: 12345
Amount due: $520.00
Exercise 1:

Write a program for a fast food restaurant. The program first asks for a choice from list of foods as listed below.
1. Burger (5 Riyals)
2. Chicken Broast (10 Riyals)
3. Piazza (15 Riyals)

Then program asks how many an item a customer wants.

After that program shows the total prices. The program should look like below.

Assignment:

1. The following program finds the maximum of two numbers. Type the following program in the editor of the C++ environment and show the output with different values of a, b.

   ```cpp
   #include<iostream>
   using namespace std;

   int main()
   {
   int a,b,max;
   cout<<"Enter first numebr : ";
   cin>>a;
   cout<<"Enter second numebr : ";
   cin>>b;
   if (a>b)
     max = a;
   else
     max = b;
   cout<<"The maximum is "<<max;
   cout<<"\nThank you. ";
   return 0;
   }
   
   2. Change the above program so that the program prints maximum among three numbers (a, b, c).```
3. Understand and type the following program. Compile the program and run it.

```cpp
#include<iostream>

using namespace std;

int main()
{
    int a,b;
    int c;

    cout << "enter your choice" << endl;
    cout << " 1 - Addition" << endl;
    cout << " 2 - Multiplication" << endl;
    cout << " 3 - Subtraction" << endl;
    cout << " 4 - Division" << endl;
    cin >> c;

    cout << "enter first number: ";
    cin >> a;
    cout << "enter second number: ";
    cin >> b;

    switch(c)
    {
    case 1:
        cout << "sum is " << a+b;
        break;

    case 2:
        cout << "multiplication is " << a*b;
        break;

    case 3:
        cout << "subtraction is " << a-b;
        break;

    case 4:
        cout << "division is " << a/b;
        break;

    default:
        cout << "incorrect choice";
    }
    cout << endl;
    return 0;
}
```

4. Write a program that prompts the user to input three numbers. The program should then output the numbers in ascending order.

5. Write a program that prompts the user to input a number. The program should then output the number and a message saying whether the number is positive, negative, or zero.