

Telephone accounts can be divided into three categories: *Local*, *International* (long-distance) and *Mobile* (cellular).

Local telephone accounts, deals with call made within your country and they have the following characteristics:

- **Monthly Subscription Fee** – Fee to pay (in LBP) regardless of the calls made.
(Positive integer. Defaults to **15000** LBP)
- **Number of Minutes** – Total number of minutes of local phone calls.
(Positive integer. Defaults to **0** minute)
- **Minutes Price** – Price of a minute (in LBP) of a local phone call.
(Positive integer. Defaults to **59** LBP)
- **City Tax** – A fixed monthly fee (in LBP) paid to the city.
(Positive integer. Defaults to **2500** LBP)
- **VAT** – The value Added Tax is a percentage (%) applied on the total amount of the bill.
(Positive integer. Defaults to **9** %)

International telephone accounts, deals with call made outside your country and they have the following characteristics:

- **Number of calls** – Number of international calls.
(Positive integer. Defaults to **0** call)
- **Call Fee** – A fixed fee paid (in LBP) per international call.
(Positive integer. Defaults to **2500** LBP)
- **Number of Minutes** – Total number of minutes of international phone calls.
(Positive integer. Defaults to **0** minute)
- **Minutes Price** – Price of a minute (in LBP) of international phone call.
(Positive integer. Defaults to **800** LBP)
- **VAT** – The value Added Tax is a percentage (%) applied on the total amount of the bill.
(Positive integer. Defaults to **9** %)

Mobil telephone accounts, deals with call made using cellular phones and they have the following characteristics:

- **Monthly Subscription Fee** – Fee to pay (in \$) regardless of the calls made.
(Positive decimal. Defaults to **29.0** \$)
- **Number of Minutes** – Total number of minutes of mobile phone calls.
(Positive integer. Defaults to **0** minute)
- **Minutes Price** – Price of a minute (in \$) of a mobile phone call.
(Positive Decimal. Defaults to **0.20** \$)
- **Number of SMS** – Total number of SMS messages.
(Positive integer. Defaults to **0** message)
- **SMS Price** – Price (in \$) of an MSM message.
(Positive decimal. Defaults to **0.25** \$)
- **VAT** – The value Added Tax is a percentage (%) applied on the total amount of the bill.
(Positive integer. Defaults to **9** %)

Design and implement the class(es) to fulfill the above data requirements.

Your design should include:

- A function that prints the information regarding *Taxes* applied on the telephone account.

Example:

```
***** Local Phone Account *****  
City Tax= 3000 LBP  
VAT Rate= 15 %
```

- A function that calculates and prints the bill of a telephone account.

Example:

```
***** Mobile Phone Bill *****  
Monthly Fee= 15.00 $  
Minutes Fee= 4.84 $  
SMS Fee= 0.75 $  
5 % VAT= 1.53 $  
Total Of: 22.12 $
```

- An overloaded insertion (<<) operator that will be used to print all the information of a telephone account.

Note that each *derived* class should have its own version of this function. As well as the *base* class. If needed, the derived class version should call the base class version.

Example:

```
***** International Phone Account *****  
Minute Price= 700 LBP  
Number of Calls= 2  
Call Price= 2000 LBP  
Nbr. of Minutes= 42  
VAT Rate= 10 %
```

- An overloaded += operator that will be used to increment the number of minutes of a telephone account.
- An overloaded ++ (pre-increment) operator that will be used to increment by one the number of SMS messages.

Write a program to test your design as following:

- Declare and initialize three “telephone accounts”; one of each type.
- Test all your functions non-polymorphic behaviors.
- Test all your functions polymorphic behaviors using pointers.
- Test all your functions polymorphic behaviors using references.

Due date: Friday, January 4th, 2008