# Assignment #3 Fall 2014 Generating Cell Phone Bills

**Pairs Programming Assignment**

You may work with a partner on this assignment as long as you notify your instructor BEFORE you submit your design work. You can NOT designate a partner after the deadline for submitting the design. Submit only ONE copy of the assignment under one student account. Make sure BOTH names are included in the documentation AT THE TOP of the source code.

**Description**

You work for a new company called Cellnet with provides cell phone services. As a member of the IT department and are responsible for creating the monthly bills.

Cellnet is a simple company that is starting with a single cell phone plan:

|  |  |
| --- | --- |
| Plan Code | Standard |
| Monthly Fee | $15 |
| Minutes (billed by the second) | 50 minutes free and $0.20/minute after that |
| Text messages send | 20 free and $0.10/text after that |
| Text messages received | Always Free |
| System Access Fee | $6.95/month |

All Cellnet users also have to pay the $0.50/month 9-1-1 Emergency Access Fee. Don’t forget that you also need to charge the GST once you have totaled the bill.

You are given a separate data file for each user which details all their account information, calls made, and text messages. Calls are marked in the data file as follows:

|  |  |
| --- | --- |
| Usage Code | Meaning |
| O | Outgoing Call |
| I | Incoming Call |
| T | Outgoing Text |
| X | Incoming Text |

Here is the format of the datafile, please note the < > are just used to identify the various fields and are not included in the actual data file.

<Account Number>  
<Invoice Number>

<Invoice Date>  
<Account holders Name>  
<Address Line>  
<City>  
<Province>  
<Postal Code>

After this the file contains a usage detail for the month that you need to analyse to calculate the monthly bill. The format for EACH line in this file is as follows:

For **incoming and outgoing calls** the file lines will appear as shown below:

<Usage Code><tab><date of call><tab><day of week of call\*1>

<tab><hour time of call><tab><minute time of call><tab><length of call in minutes>

For incoming and outgoing texts the file line will appear as shown below:

<Usage Code><tab><date of text><tab><hour time of text><tab><minute time of text>

Here is a sample data file and its expected output:

5-9934-8732

5-9934-8732-08

Oct 10, 2013

Harvey Wallbanger

123 Main St

Calgary

Alberta

T2C 4D5

T 07-01 16 00

T 07-01 16 12

X 07-01 16 12

T 07-01 16 13

T 07-02 11 12

T 07-02 11 13

T 07-03 23 08

X 07-03 23 09

T 07-03 23 10

X 07-03 23 11

T 07-03 23 12

T 07-03 23 12

T 07-03 23 12

X 07-03 23 13

T 07-03 08 12

T 07-04 08 00

T 07-04 08 01

X 07-04 08 12

T 07-05 08 12

T 07-05 08 12

T 07-05 11 13

T 07-05 23 08

X 07-05 23 09

T 07-05 23 10

X 07-05 23 11

T 07-05 23 12

T 07-05 23 12

T 07-05 23 12

X 07-05 23 13

T 07-06 08 12

T 07-07 08 00

X 07-07 08 02

T 07-07 16 30

X 07-07 16 30

T 07-08 08 00

X 07-08 08 02

T 07-08 16 30

X 07-08 16 30

T 07-09 08 00

X 07-09 08 02

T 07-09 16 30

X 07-09 16 30

I 07-10 11 35 12

O 07-10 12 58 65

I 07-11 11 10 45

T 07-11 11 11

X 07-11 11 12

I 07-13 11 55 33

T 07-15 14 00

X 07-15 14 02

T 07-16 08 10

T 07-16 08 11

X 07-17 19 11

T 07-17 19 12

T 07-18 12 12

T 07-18 12 12

O 07-18 12 12 25

T 07-19 16 00

T 07-19 16 12

X 07-19 16 12

T 07-19 16 13

T 07-19 11 12

T 07-20 11 12

T 07-21 23 08

X 07-21 23 08

T 07-21 23 09

X 07-21 23 10

T 07-21 23 12

T 07-21 23 12

T 07-21 23 12

X 07-21 23 12

T 07-22 08 12

T 07-22 08 12

X 07-22 08 13

T 07-23 08 00

T 07-24 08 01

T 07-24 08 03

X 07-24 08 03

T 07-25 08 12

T 07-25 08 12

T 07-25 08 12

T 07-26 08 12

Sample output based on the previous data file (user input is shown in **bold underline**):

Enter the data filename: **h:/temp/cellphonedata.txt**

Harvey Wallbanger

Cellnet Account Summary: Oct 10, 2013

Account Number: 5-9934-8732

Invoice Number: 5-9934-8732-08

Harvey Wallbanger

123 Main St

Calgary, Alberta

T2C 4D5

Regular charges

Description Cost

Cellnet usage (see below) 29.40

Monthly Fee 15.00

System Access Fee 6.95

9-1-1 Emergency Access Fee 0.50

Total Before Tax 51.85

GST 2.59

Total After Tax 54.44

Cellnet Usage charges

Description Minutes Cost

Regular Minutes included 50 0.00

Minutes over plan 130 26.00

Texts Received 23 0.00

Texts sent - included 20 0.00

Texts send - over 34 3.40

Cellnet usage summary ending Oct 10, 2013

Here is a 2nd datafile for you to run. Please include your sample output from this file as well:

403-220-4918

403-220-4918-08

Oct 12, 2013

I.M. Lonely

344 Rivercrest Circle SE

Calgary

Alberta

T2C 4D6

I 07-10 F 11 35 75

O 07-10 F 12 58 3000

I 07-11 S 11 10 54

T 07-11 S 11 11

X 07-11 S 11 12

I 07-13 M 11 55 33

T 07-15 W 14 00

X 07-15 W 14 02

T 07-16 R 08 10

T 07-16 R 08 11

X 07-17 F 19 11

T 07-17 F 19 12

T 07-18 S 12 12

T 07-18 S 12 12

O 07-18 S 12 12 2103

T 07-19 N 16 00

T 07-19 N 16 12

X 07-19 N 16 12

T 07-19 N 16 13

T 07-19 N 11 12

T 07-20 M 11 12

T 07-21 T 23 08

X 07-21 T 23 08

T 07-21 T 23 09

X 07-21 T 23 10

T 07-21 T 23 12

T 07-21 T 23 12

T 07-21 T 23 12

X 07-21 T 23 12

T 07-22 W 08 12

T 07-22 W 08 12

X 07-22 W 08 13

T 07-23 R 08 00

T 07-24 F 08 01

T 07-24 F 08 03

X 07-24 F 08 03

T 07-25 S 08 12

T 07-25 S 08 12

T 07-25 S 08 12

T 07-26 N 08 12