SdPd/Java Lab Exam 2

Objective: Customer Electric Supply Maintenance

Write a java program to maintain customer electric supply records using a sequential text file.

1. **Download** the lab exam 2 **zip** file and extract the folder, **Save** the unzipped folder on the **desktop** (**not** the local C drive, USB or network account)
   – Rename the **LastNameFirstNameLabEx2** folder and starter program as per your own name
   – E.g. **AgnewGerryLabEx2** folder/**AgnewGerryLabEx2**.java program file
   – To be **verified** by your lab supervisor
   – Verify the contents of the input text file **"Electric.dat"** using NotePad (or equivalent)

2. Add your **Program Id, Name & Program Description as comments** at the top of the program

3. Remember to rename the starter **class** as per your java program name and **Save, Compile and Run** the program **before** you write any code
   – Alert your supervisor if the program does not run initially

4. **10%** of the marks are for the Algorithm form (write your name at the top of the first page) which must be submitted at the end of the lab exam

5. **Warning:**
   Marks will be lost for **bad programming practices** such as:
   – Lacking meaningful variable names, white-space, indentation, etc.
   – Ensure redundant code is deleted prior to program submission

6. **File/Record Layout:**
   Each record consists of the following details about each customer:

   – customerId (string max 3) – e.g. agn
   – custFirstName (string max 10) – e.g. Gerry
   – custLastName (string max 10) – e.g. Agnew
   – custType (character) – e.g. b/Business, c/Concess, d/Domestic
   – custStandCharge (double) – e.g. 15.16
   – custUnits (int) * 6 – e.g. 300 (last 6 bi-month units used)

7. **Screenshots:**
   Refer to the attached screenshots to clarify the below requirements

8. **Constants / Variables:**
   Declare 2/3 constants and variables as appropriate with meaningful names and types

9. **Initialise:**
   Initialise any necessary variables

10. **Main Processing / File Input:**
    – Using an EOF controlled **while** loop read each customer record from the file until there are no more records to be processed
    – Read the 6 units used for each customer using an inner **for** loop

11. **Line Output:**
    Display formatted customer electric details: Customer Id, Name, Type, Standing Charge and the 6 Units used including the calculated Average Monthly (÷ 12) Units & Unit Costs as shown

    – Customer name is displayed last name first within a single column
    – Customer type name is displayed with a **switch** based on the customer type character
    – Where: b/B ➔ Business, c/C ➔ Concess, & d/D ➔ Domestic otherwise Pending
    – Where customers with an x/X type are inactive and should not be processed or displayed
    – Where the unit cost of electricity is € 0.10

12. **Header Output:**
    Display the program header including **your name** aligned as specified

13. **Footer Output:**
    After all the Customer records have been processed display the following:

    – Customer, Inactive, Business, Concession, Domestic and Pending counts
    – Least units of electric used (excluding 0 units) including the Customer name and period
    – Most expensive electric cost including the standing charge with Customer name
    – ***3*** new Business records output to the new Electric Business text file (see 15 below)

14. **Output Report:**
    Output the entire screen contents to a report file called “ElectricReport.dat”
    – Located in the same folder to be verified using NotePad (or equivalent)

15. **Output File ElectricBusiness:**
    Write all selected Business records to an output text file called “ElectricBusiness.dat”
    – Using the input file record layout without the units but with Average Units and Unit Costs
    – Located in the same folder to be verified using NotePad (or equivalent)

16. **Close Files:**
    Close all the file objects

17. **Input and Message Dialogues:**
    Write a **second program** called LastNameFirstNameLabEx2Create to create a second seq text file called “Electrical2.dat” with the same record layout using input and message dialogs and the skeleton program provided

    – Get the Customer Id repeatedly from an **Input dialogue**
    – Until “Quit” is entered to stop (case insensitive) involving **string comparison**
    – Using a **while** statement and the **Initial/Subsequent** read approach
    – Get the other customer fields using multiple seeded **Input dialogues** excluding the units
    – Save the record to the Output file using zeroes for the unit fields
    – Output a footer count when finished using a **Message dialogue** with appropriate Title & Icon
    – See the attached input and message dialog screenshots

18. **Save – The End:**
    – When finished Save and Exit TextPad
    – **Zip** (R/click: Send Compressed) ➔ LastNameFirstNameLabEx2 folder
    – **Upload** LastNameFirstNameLabEx2 zip file to the Moodle link provided
    – To be verified by your supervisor before you submit the zip file
    – Backup your lab exam folder to your **root** network account
    – Sign the **attendance sheet** before you exit the lab

Electric - Notepad

File Edit Format View Help

```
agn Gerry       Agnew      d  11.11   101   102   103   104   105   106
blu Barry       Bluey      c  12.99     0     0     0     0     0     0
new News        Mayo       b 200.99  1502  1301  1111  2222  5555  2222
bbb Bb          Bbbbbb     x  30.99    10    50    70    11    33    55
mur Mary        Murphy     D 100.00  1000   900   800  1100   700   888
ddd D           Dddddddd   X  11.99    10    10    10    10    10    10
aut Autos       Galway     B 300.99  1201  1501  1201  1401  1801  1901
rly Paddy       Reilly     d  55.00   500   400   300   200   100     0
mty More        Meaty      b  19.99     1     2     3     4     5     6
why Willie      Whitey     C  66.88    12   100     0   450    90    11
new Name        No         p   0.00     0     0     0     0     0     0
```

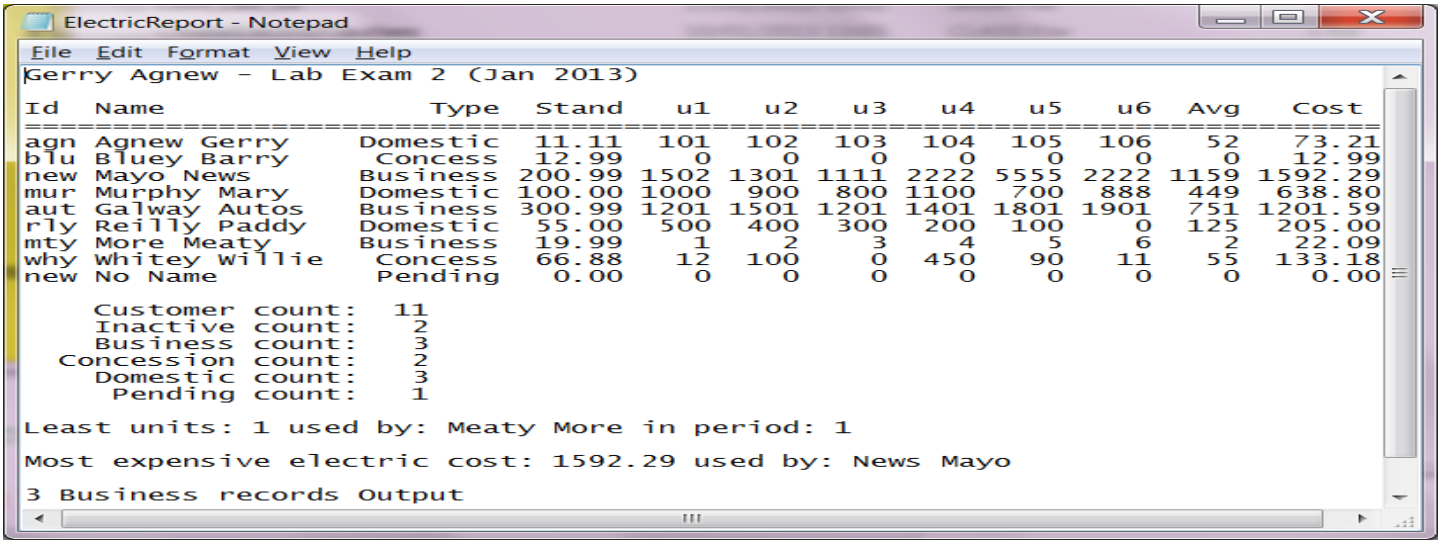
C:\Windows\system32\cmd.exe

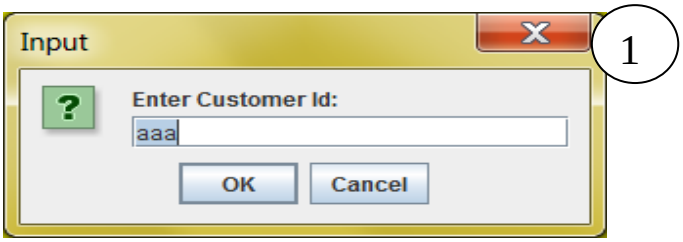
```
Gerry Agnew - Lab Exam 2 (Jan 2013)

Id  Name               Type  Stand   u1   u2   u3   u4   u5   u6  Avg   Cost
=============================================================================
agn Agnew Gerry    Domestic  11.11  101  102  103  104  105  106   51   73.21
blu Bluey Barry     Concess  12.99    0    0    0    0    0    0    0   12.99
new Mayo News      Business 200.99 1502 1301 1111 2222 5555 2222 1159 1592.29
mur Murphy Mary    Domestic 100.00 1000  900  800 1100  700  888  449  638.80
aut Galway Autos   Business 300.99 1201 1501 1201 1401 1801 1901  750 1201.59
rly Reilly Paddy   Domestic  55.00  500  400  300  200  100    0  125  205.00
mty More Meaty     Business  19.99    1    2    3    4    5    6    1   22.09
why Whitey Willie   Concess  66.88   12  100    0  450   90   11   55  133.18
new No Name          Pending   0.00    0    0    0    0    0    0    0    0.00

    Customer count:  11
    Inactive count:   2
    Business count:   3
  Concession count:   2
    Domestic count:   3
     Pending count:   1

Least units: 1 used by: Meaty More in period: 1

Most expensive electric cost: 1592.29 used by: News Mayo

3 Business records Output
```

ElectricBusiness - Notepad

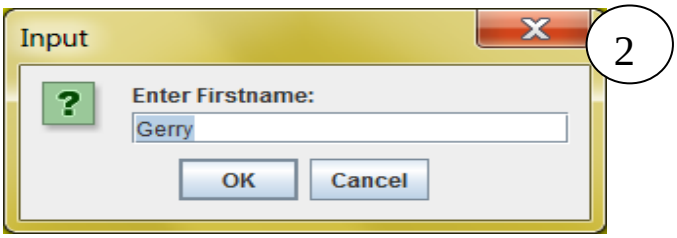
File Edit Format View Help

```
new News        Mayo       b 200.99 1159 1592.29
aut Autos       Galway     b 300.99  751 1201.59
mty Meaty       More       b  19.99    2   22.09
```

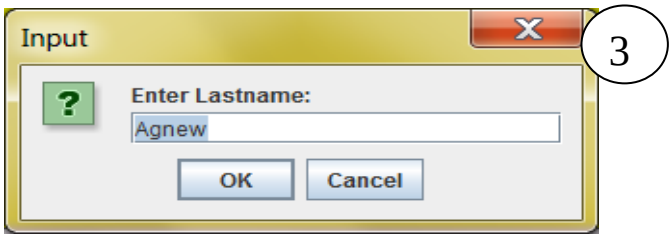

ElectricReport - Notepad
File Edit Format View Help
Gerry Agnew - Lab Exam 2 (Jan 2013)
Id Name Type Stand u1 u2 u3 u4 u5 u6 Avg Cost
agn Agnew Gerry Domestic 11.11 101 102 103 104 105 106 52 73.21
blu Bluey Barry Concess 12.99 0 0 0 0 0 0 0 12.99
new Mayo News Business 200.99 1502 1301 1111 2222 5555 2222 1159 1592.29
mur Murphy Mary Domestic 100.00 1000 900 800 1100 700 888 449 638.80
aut Galway Autos Business 300.99 1201 1501 1201 1401 1801 1901 751 1201.59
rly Reilly Paddy Domestic 55.00 500 400 300 200 100 0 125 205.00
mty More Meaty Business 19.99 1 2 3 4 5 6 2 22.09
why Whitey Willie Concess 66.88 12 100 0 450 90 11 55 133.18
new No Name Pending 0.00 0 0 0 0 0 0 0 0.00
Customer count: 11
Inactive count: 2
Business count: 3
Concession count: 2
Domestic count: 3
Pending count: 1
Least units: 1 used by: Meaty More in period: 1
Most expensive electric cost: 1592.29 used by: News Mayo
3 Business records Output


Input
Enter Customer Id:
aaa
OK
Cancel

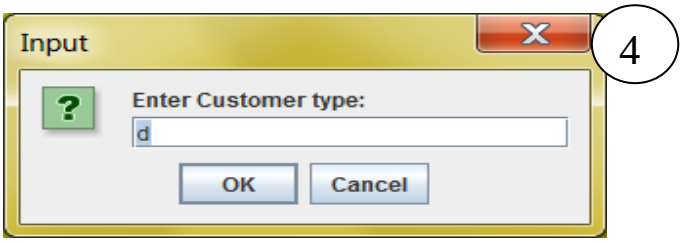
1


Input
Enter Firstname:
Gerry
OK
Cancel

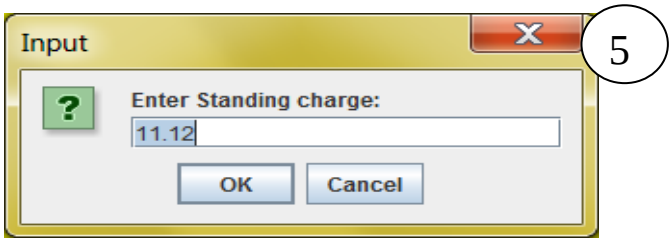
2


Input
Enter Lastname:
Agnew
OK
Cancel

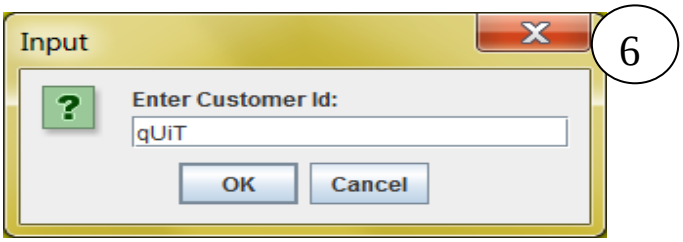
3


Input
Enter Customer type:
d
OK
Cancel

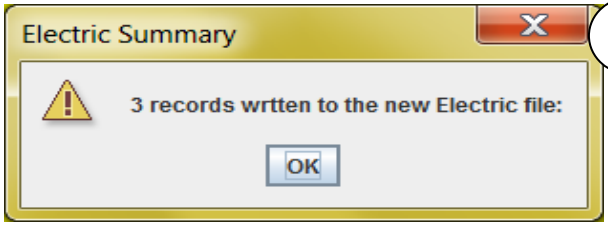
4


Input
Enter Standing charge:
11.12
OK
Cancel

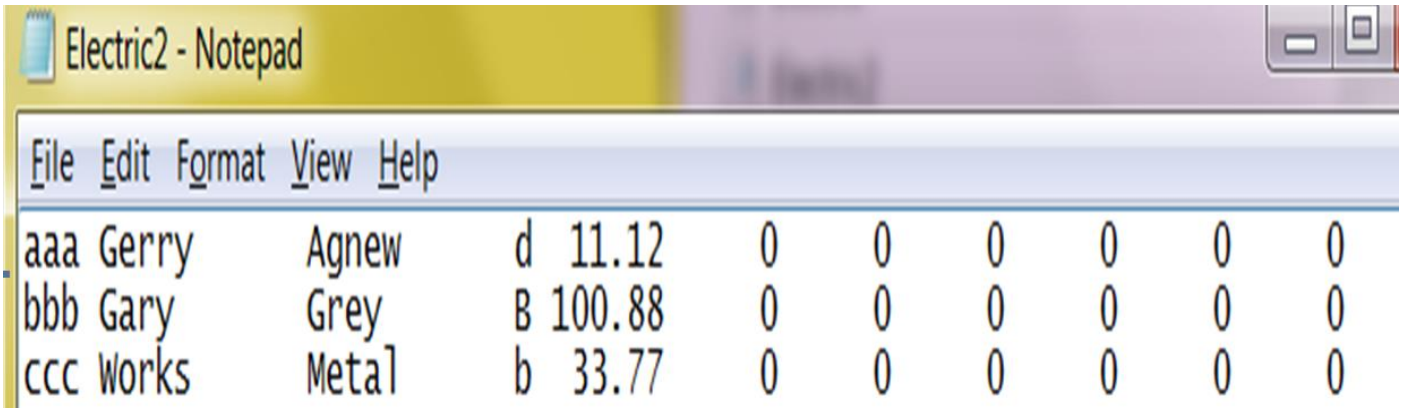
5


Input
Enter Customer Id:
qUiT
OK
Cancel

6


Electric Summary
3 records wrtten to the new Electric file:
OK

7


Electric2 - Notepad
File Edit Format View Help
aaa Gerry Agnew d 11.12 0 0 0 0 0 0
bbb Gary Grey B 100.88 0 0 0 0 0 0
ccc Works Metal b 33.77 0 0 0 0 0 0