

## ICS 103, Term 132

### Computer Programming in C

#### HW# 4

Due date: Tuesday, April 1, 2014

- Q.1.** InternetLite Corporation is an Internet service provider that charges customers a flat rate of \$7.99 for up to 10 hours of connection time. Additional hours or partial hours are charged at \$1.99 each. Write a function **charge** that computes the total charge for a customer based on the number of hours of connection time used in a month. The function should also calculate the average cost per hour of the time used (rounded to the nearest cent), so use two output parameters to send back these results. Write a second function **round\_money** that takes a real number as an input argument and returns as the function value the number rounded to two decimal places. Use this function for rounding the average cost per hour of the time used to the nearest cent. Write a main function that takes data from an input file usage.txt and produces an output file charges.txt. Your program should handle an input file of any size. The data file format is as follows:

Line 1: current month and year as two integers

Other lines: customer number (a 5-digit number) and number of hours used

Here is a sample data file and the corresponding output file:

**Data file** usage.txt

```
10 2009
15362 4.2
42768 11.1
11111 9.9
```

**Output file** charges.txt

Charges for 10/2009

Customer	Hours used	Charge	Average cost
15362	4.2	7.99	1.90
42768	11.1	11.97	1.08
11111	9.9	7.99	0.81

*The solution should be well organized and your program should be well documented. Submit a soft copy of your solution in a zip file. Your solution should be submitted in a word file that contains the following items:*

- i) *Your name and ID*
- ii) *Homework number*
- iii) *Problem statement*
- iv) *Your solution along with the code*
- v) *Discussion of what worked and what did not work in your program. Include snapshots that demonstrate the working parts of your program. If things did not work and you attempted to solve them, mention that and write about the difficulty that you have faced.*

*The soft copy should also contain the source code file (i.e. .c) and the executable (i.e. .exe).*