

## Programming Assignment #3

Calculate a Cell Phone Bill

CS 1428.006 and 007, Fall 2017

Instructor: Jill Seaman

**Due: in class Tuesday, 10/3/2017** (upload electronic copy by 9:00am)

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### Problem:

You have been asked by a cell phone service provider to write a program that will calculate the amount of the "talk" portion of a customer's monthly cell phone bill. Write a C++ program that will calculate the amount of the bill given which talk plan the customer subscribes to and how many voice minutes they used during the month.

The cell phone service provider offers the following talk plans:

Package A: 100 minutes for \$10. .25/minute for each additional minute.

Package B: 250 minutes for \$15

Package C: 1500 minutes for \$20.

Package D: Unlimited minutes for \$30.

Note: If a user is on package B and uses more than 250 minutes, they are automatically moved to package C. If a user is on package B or C and uses more than 1500 minutes, they are automatically moved to package D.

### Input:

Use the following menu to prompt the user for the customer's cell phone plan:

Talk Plans:

A. The 100 minute plan

B. The 250 minute plan

C. The 1500 minute plan

D. The unlimited plan

Enter which talk plan the customer subscribes to:

Then ask the user to input the number of voice minutes used in the month.

For both inputs, use an if statement to perform input validation. The user should select only A, B, C, or D from the menu, and the minutes should be between 0 and 44640 (inclusive). If their input is invalid, ask them to enter the value again.

**Processing:** Compute the amount of the monthly bill according to the plan descriptions above.

Additionally, if the customer was on plan B or C and was automatically moved to plan C or D, output a message indicating this fact.

**Output:** Display the amount of the monthly bill with a dollar sign and formatted to 2 decimal places. Also if the customer was moved to another plan, output a message. Here are two sample executions of the program:

Talk Plans:

- A. The 100 minute plan
- B. The 250 minute plan
- C. The 1500 minute plan
- D. The unlimited plan

Enter which talk plan the customer subscribes to: A

Enter the total number of minutes used during the month: 200

The amount due for the month is \$35.00

Talk Plans:

- A. The 100 minute plan
- B. The 250 minute plan
- C. The 1500 minute plan
- D. The unlimited plan

Enter which talk plan the customer subscribes to: E

Please enter A, B, C, or D: C

Enter the total number of minutes used during the month: 1550

The amount due for the month is \$30.00

You have been switched to plan D

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### **Additional Requirements:**

- Use named constants for all literals!!
- Use proper data types (only use float or double when necessary).
- Your program **must compile** and run, otherwise you will receive a 0.

### **Style:**

See the Style Guidelines document on the course website. The grader will deduct points if your program violates the style guidelines. Make sure it is indented neatly.

## Logistics:

Name your file **assign3\_XXXXX.cpp** where XXXXX is your TX State NetID (your txstate.edu email id). The file name should look something like this: assign3\_js236.cpp

There are two steps to the turn-in process:

1. Submit an **electronic copy** using the Assignments tool on the TRACS website for this class ([tracs.txstate.edu](http://tracs.txstate.edu)). Submit the .cpp file, (NOT a .cbp file!).
2. Submit a **printout** of the .cpp file at the beginning of class on the day the assignment is due. Please print your name on the front page.

See the assignment turn-in policy on the course website ([cs.txstate.edu/~js236/cs1428](http://cs.txstate.edu/~js236/cs1428)) for more details.