Hack 3.0

Computer Science I

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Introduction

Hack session activities are small weekly programming assignments intended to get you started on full programming assignments. Collaboration is allowed and, in fact, *highly encouraged*. You may start on the activity before your hack session, but during the hack session you must either be actively working on this activity or *helping others* work on the activity. You are graded using the same rubric as assignments so documentation, style, design and correctness are all important.

Problem Statement

A cell phone broadband provider sells monthly data plans to its customers. Each data plan is for 30 days and each plan gives customers a certain number of Gigabytes (GB) which must be used each month or they are lost (no "rollover"). The provider wants to help customers understand if they are using their monthly data too quickly or if they can afford to use more.

In this exercise, you will write an application for the company to help customers track their mobile data usage. Write a program that reads the following pieces of data as *command line arguments*.

- Number of GB in the plan per 30 day period
- The current day in the 30 day period (in the range 1, first day, 30 for the last day)
- The total number of GB used so far

The program should then compute whether the customer is over, under, or right on the *average daily usage* of their plan. It should also inform them of how many GB are left and how many, on average, they can use per day for the rest of the 30 day period. Of course, if they've run out of data, it should inform them of that too.

For example, if the user enters $15, 10, 13$ for each piece of data respectively, your program should print out something similar to the following.

```
10 days used, 20 days remaining
Average daily use: 1.3 GB/day

You are EXCEEDING your average daily use (0.50 GB/day).
Continuing this high usage, you'll exceed your data plan by
24 GB.

To stay below your data plan, use no more than 0.1 GB/day.
```

If the user is under their average daily use, a different message should be presented.

Instructions

- You are encouraged to collaborate any number of students before, during, and after your scheduled hack session.
- Design at least 3 test cases *before* you begin designing or implementing your program. Test cases are input-output pairs that are known to be correct using means other than your program.
- Include the name(s) of everyone who worked together on this activity in your source file's header.
- Name your program `cellPlan.c`, and turn it in via webhandin, making sure that it runs and executes correctly in the webgrader. Each individual student will need to hand in their own copy and will receive their own individual grade.