
Lab 1: C++ Review

Welcome back to using C++! In this lab, you will compare four different cell phone packages.

The different plans are listed below. Each plan specifies the maximum number of minutes and the maximum amount of data the user can use each month. The limits are inclusive.

- Basic Plan:
up to 500 minutes
up to 2G data
\$29.99/ month
- Deluxe Plan:
up to 1500 minutes
up to 4G
\$38.99 /month
- Premium Plan:
Unlimited minutes
Unlimited data
\$75.99 / month
- On Demand Plan:
\$0.34 per minute
\$0.01 per megabyte

Program Specifications

1. Ask the user for the number of minutes he/she uses every month.
2. To estimate the amount of data the user probably needs, ask the user for the number of minutes PER DAY spent streaming videos, surfing the web, and listening to music. Then, use the following conversions to estimate how many gigabytes of data the user needs:

1 Gigabyte of data is used for:
45 minutes of streaming video
27 hours of web surfing
7 hours of listening to music

Take the ceiling of the number of gigabytes needed (always round up).

Print out how many gigs of data the user will need.

3. Print which plan (Basic, Premium, or Deluxe) the user qualifies for
4. Print out the cost of the On Demand Plan.
5. Print out which of the plans is the cheapest option.
6. Submit a PDF containing a screen shot of your program running. **Use the input from the example below.**

Hints and Tips

- If you want to format your output, check out the `iomanip` header.
- The `cmath` header contains a function called `ceil` that you'll find useful.
- If you get tired of giving your program input, you can put the input in a file and use the file to provide input. You have to run the program from the terminal, and it will look something like this: `name_of_program < file_with_input`
Be advised that the file should only contain exactly the input that you would give the program. The formatting of the input prompts will also look weird and the input given won't be echoed (so you won't see it). It's still getting the input, though! Ask me if you need help getting this to work.

Check list

Your code must have a name header as described in the syllabus. Each of these items is worth two points of your grade.

Your output must

- Have a title in the output
- Include a short paragraph indicating the purpose of the application to the user and any directions the user needs.
- Use complete and clear sentences – do not assume the user knows what you expect from him/her.
- Have NO grammatical errors and/or spelling errors.
- Have NO typos – this includes using capital letters at the beginning of a sentence and punctuation at the end of sentences.

Example Output

Here is an example for what your program's output could look like. Yours doesn't have to look exactly like this, as long as it prints out the right things. User input is in [blue](#).

```
-----  
Title Goes Here  
-----  
Purpose Goes Here  
-----
```

```
How many minutes do you use a month talking on the phone? 245  
In a typical day, how much time (in minutes) do you spend ...  
streaming video on your phone: 3  
browsing the web on your phone: 2  
listening to music on your phone: 20
```

You use around 4G of data a month

You qualify for the Deluxe Plan

The On-Demand Plan would cost \$123.3

The cheapest plan is the Deluxe Plan at \$38.99

What to Turn In

Upload your .cpp, .h (if any), and pdf to Canvas. Double check you've used the correct input for the pdf!