

CSCI 1301 – Lab 27

November 28, 2018

1 Problem Solving – Wireless Service Provider

1.1 Description

A wireless service provider has three different subscription packages for its customers.

- Package A: For \$9.95 per month, 10 GB of data are provided. Additional GB are \$2.00 per GB.
- Package B: For \$14.95 per month, 20 GB of data are provided. Additional GB are \$1.00 per GB.
- Package C: For \$19.95 per month, unlimited data is provided.

We want to design and implement a class for this wireless service provider.

1.2 Design

Design a class named **WSP** that calculates a customer's monthly bill. It should contains:

1. Attributes for both the letter of the package the customer has purchased (A, B, or C) and the amount of data (in GB) that the customer has used.
2. Accessors and mutators for all attributes.
3. A no-arg constructor that defaults to package A and no GB used.
4. A constructor that sets all fields using its parameters.
5. A method that calculates a customer's total charges for the package they have chosen.
6. A method that calculates and displays the amount of money Package A customers would have saved if they had purchased Package B or Package C, and the amount of money Package B customers would save if they purchased Package C.

Write the UML diagram for this class.

1.3 Implementation

Work on the **WSP** class and on a test program in parallel: implement the first three steps, and then write a small test program. Make sure you can compile your program, and that it behaves as expected before continuing. Write the second constructor, and test it by creating an object using it. Continue with the next-to-last step, test the method, and finally write the last step. To test this last method, you should create numerous objects, and call the method with them.

Try to use a **switch** statement for this last method.