

CS 161
Colin Goble

Assignment #3
Washington State Ferries



Assignment:

[Washington State Ferries](#) operates a passenger and vehicle ferry from Anacortes, Washington, to Friday Harbor in the San Juan Islands. A *highly simplified* version of the fare tariff from the summer of 2017 is given below. To keep your assignment manageable, you should ignore Frequent User Books, vehicles longer than 40 feet in length, and motorcycles. The simplified fare tariff is reproduced below:

Fares effective 2017

All fares are collected Westbound Only. Credit Cards are accepted at the Anacortes terminal only, Friday Harbor terminal will only accept cash and local in-state checks. Fares may vary depending on destination or day of travel.

Passenger Fares (and Bicycle Surcharge)	
Regular Fare	13.25
Senior/Disabled Fare	6.60
Youth Fare	6.60
Bicycle Surcharge	4.00
Vehicle & Driver Fares (includes the driver)	
Under 14 feet and driver	50.90
14 to under 22 feet and driver	63.75
Under 14 feet with senior or disabled driver	44.25
14 to under 22 feet with senior or disabled driver	57.10
Long Vehicle Fares (includes the driver)	
22 to under 30 feet and less than 7'2" High	98.70
22 to under 30 feet and over 7'2" High	197.10
30 to under 40 feet	263.80
40' and up	Prohibited

You have been contracted to write a C++ program to calculate the correct fare, based on an appropriate dialog with the customer.

Note: *Your program should ask exactly the same questions, in the same sequence, and produce exactly the same results as given in the examples below:*

Example #1

```
Welcome to Colin Goble's Fare Calculator
Are you driving a vehicle onto the ferry? (y/n): y
How long is your vehicle in feet? 17
Is the driver a Senior Citizen or Disabled? (y/n): y
How many passengers in your vehicle? (excluding the driver)
    Regular Fare Adults: 1
    Senior Citizens or Disabled: 1
    Youth: 2
Your total fare is $90.15
Thank you for using Colin Goble's Fare Calculator
```

Example #2

```
Welcome to Colin Goble's Fare Calculator
Are you driving a vehicle onto the ferry? (y/n): y
How long is your vehicle in feet? 27
Is your vehicle over 7 feet, 2 inches in height? (y/n): y
How many passengers in your vehicle? (excluding the driver)
    Regular Fare Adults: 1
    Senior Citizens or Disabled: 1
    Youth: 2
Your total fare is $230.15
Thank you for using Colin Goble's Fare Calculator
```

Example #3

```
Welcome to Colin Goble's Fare Calculator
Are you driving a vehicle onto the ferry? (y/n): n
How many Regular Fare Adults in your group? 2
How many Senior Citizens or Disabled persons in your group? 2
How many Youths in your group? 3
How many bicycles? 2
Your total fare is $67.50
Thank you for using Colin Goble's Fare Calculator
```

Example #4

```
Welcome to Colin Goble's Fare Calculator
Are you driving a vehicle onto the ferry? (y/n): y
How long is your vehicle in feet? 13
Is the driver a Senior Citizen or Disabled? (y/n): n
How many passengers in your vehicle? (excluding the driver)
    Regular Fare Adults: 1
    Senior Citizens or Disabled: 0
    Youth: 0
Your total fare is $64.15
Thank you for using Colin Goble's Fare Calculator
```

Example #5

```
Welcome to Colin Goble's Fare Calculator
Are you driving a vehicle onto the ferry? (y/n): y
How long is your vehicle in feet? 35
How many passengers in your vehicle? (excluding the driver)
    Regular Fare Adults: 0
    Senior Citizens or Disabled: 1
    Youth: 1
Your total fare is $277.00
Thank you for using Colin Goble's Fare Calculator
```

Design Considerations

Your program is only expected to calculate the charge for a **single group** of people each time you use it. We have not studied loops yet, so you are not expected to use one.

The text in **red** is that which is input by the user. The rest is output by your program. Note that the examples above are only specimens. Your program should calculate the correct total for any valid input combination that is within the scope of the assignment (as described in the first paragraph).

Of course, the name "Colin Goble" in the welcome line and "Thank you" line should be replaced with your name.

Deliverables:

Please upload your program source code (.cpp file) as usual. Be sure to comment your code as required, and to acknowledge any sources of help you may have received. Your header comments should include the identification of the assignment and your name. It should also include a comment indicating any sources of help you may have received. If there were none, the line should read:

```
// Sources: None.
```

Note:

I think, like the previous assignment, this is not a totally straightforward project. So I am expecting a lively discussion on the bulletin board, which I will follow closely. I will be happy to offer a few hints, as necessary, and answer questions. So I recommend you check in with the Assignment #3 discussion board several times a week.