

Assignment #7

*Problem Solving and Programming in C++
Department of Computer Science
Old Dominion University*

Objective: The main objective of this assignment is checking the students' ability to work with ADTs. In this week's assignment, you will be writing the interface of an ADT in order to conform to the requirements of a larger application.

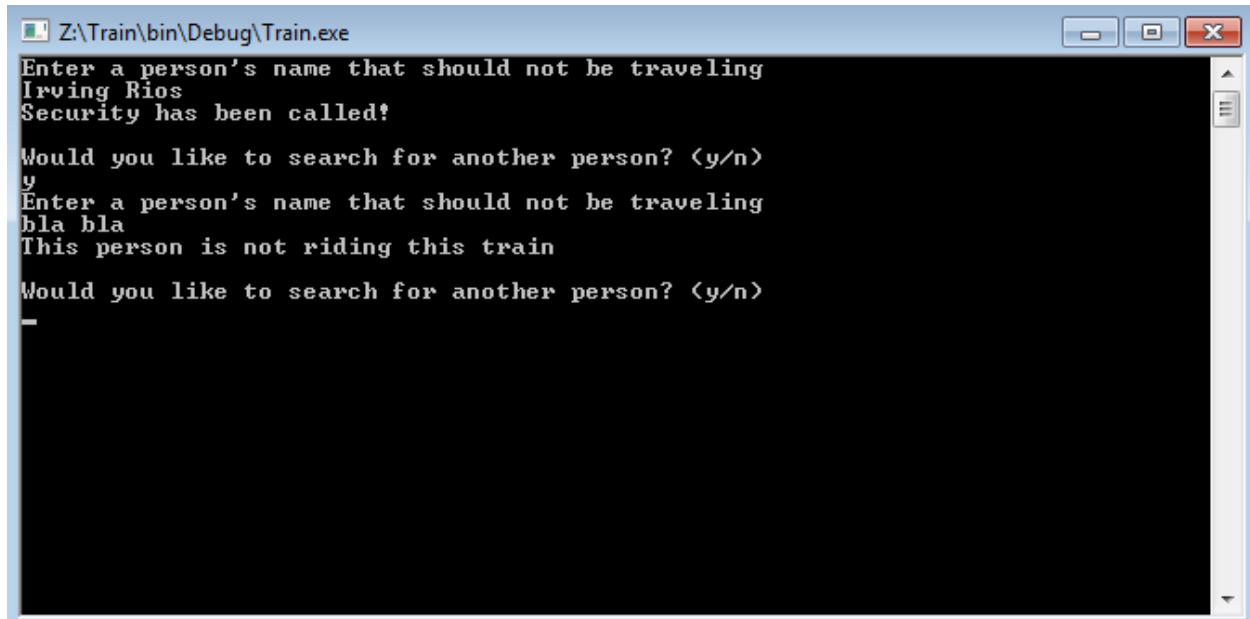
Description: A train station needs to keep careful records for various purposes. Train companies keep track of both staff and passengers.

For many types of long distance travel, companies may scan the names of passengers to make sure that no wanted criminals are hiding among the passengers. Usually, a company might hire several people to manually look at the passenger log. The company is realizing that automation of this process could save them a lot of money. They hire you, hoping to automate this process.

Due to the fact that the company wants to make the program scalable, they insist that you use ADTs to hold all possible information of the passengers. This includes the passengers first name, last name, seat, zone, diet, whether the passenger has special needs, and whether the passenger is a minor. This information will come from a text file. At the moment, the train company does not have records for diet, special needs, or is a minor. While the company finds the information, they would like you to generate these member variables randomly. For the diet, a char value should be randomly generated with the following possible options: 'A' for no dietary restrictions, 'G' for gluten free, and 'V' for vegetarian. For special needs, a boolean value of true/false can be randomly generated. For the is minor category a boolean can be used. The age of the passenger should first be randomly generated, and then if the passenger's randomly generated age is less than 18, that passenger should be flagged as a minor.

The company also would like you to record information about the staff. A staff member has a first name, last name, job title, Id number, and zone. Since it will be easy, they would like you to also search the staff to make sure no criminals are working on the train.

Your program should prompt the user to enter a name of a criminal and print whether that person is on the train. Afterward, the program should ask if the user would like to search a different name. A sample run of the program can be seen below.



```
Z:\Train\bin\Debug\Train.exe
Enter a person's name that should not be traveling
Irving Rios
Security has been called!
Would you like to search for another person? (y/n)
y
Enter a person's name that should not be traveling
bla bla
This person is not riding this train
Would you like to search for another person? (y/n)
_
```

Submission notes:

- Zip the entire Code::Blocks project containing all the .cpp, .h, .cbp files name the zipped file “Assg7_cslogin.zip”, where the cslogin is your login ID for the computers at the Department of Computer Science at ODU.
- Submit the zipped file using the appropriate Blackboard link.