Lab #7: Location Profit Calculator

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ALGORITHM

1. Create the department object
   1. Prompt user for department name, capacity, and current total cost of product purchases
2. Display menu of options to user (error check options + automatic capitalization)
   1. M -- Add Manager
      1. Check manager does not exist
      2. Prompt user for info to create new manager and add to data member
   2. E -- Add Employee
      1. Check capacity has not been reached
      2. Prompt user for info to create new employee and add to vector
   3. R -- Remove Employee
      1. Check if at least 1 employee exists
      2. Prompt Employee ID (index of employee in vector) and remove from vector
   4. L -- List Dept. Info (print the following info)
      1. Department Name, Capacity, and Cost of Products
      2. Manager Information (if no manager has been assigned, the appropriate warning message should be included)
      3. All information for each employee in the department sorted by last name (if no employees have been assigned, the appropriate warning message should be included)
   5. P -- Print Final Profit
      1. Ends the loop execution and prints off the final profit summary

Person Class

* Public
  + Get and set
  + Default constructor
  + Multiargument constructor
  + Destructor
* Private
  + First Name (string)
  + Last Name (string)
  + Birth Date (Date Object)

Employee Class (inherit Person)

* Public
  + Get and set
  + Vector manipulation
  + Default constructor
  + Multiargument constructor
  + Destructor
  + revenueTotal() (float) - calculated total of revenue vector
  + < operator overload
* Private
  + Employee ID (int)
  + Date Hired (Date Object)
  + Miles Traveled (int)
  + Employee Rating (float)
  + Completed Job Revenue (float)
  + Jobs vector (float)

Manager Class (inherit Person)

* Friend
  + << operator overload
* Public
  + Get and set
  + Default constructor
  + Multiargument constructor
  + Destructor
* Private
  + Title (string)
  + Employee ID (int)
  + Date Hired (Date Object)
  + Promotion Date (Date Object)
  + Salary (float)

Department Class

* Public
  + Get and set
  + Vector manipulation
  + Default constructor
  + Multiargument constructor
  + Destructor
  + totalRevenue() (float)
  + costOfLabor() (float)
    - number of employees in the department multiplied by the base pay rate (all painters are currently paid at the same rate) then adding the salary of the manager for that department
  + costOfTravel() (float)
    - adding up all employees’ miles and multiplying by the standard rate of ($0.87/mile)
* Private
  + Name (string)
  + Capacity (int)
  + productCost (float)
  + Manager Object
  + Employee Vector

SCREEN-SHOTS OF RUNNING PROGRAM

Text

Description automatically generated

INTEGRITY STATEMENTS

* I have not shared the source code in my program with anyone other than the pre-approved human sources.
  + *Please include a note here if you have used one or more of the pre-approved human sources or received special permission from me.*
* I have not used source code obtained from another student, or any other unauthorized source, either modified or unmodified.
* If any source code or documentation used in my program was obtained from another source, such as the course textbook or course notes, that has been clearly noted with a proper citation in the comments of my program.
  + It would also be helpful to include a note here of which sources you used
* I have not knowingly designed this program in such a way as to defeat or interfere with the normal operation of any machine it is graded on or to produce apparently correct results when in fact it does not.

Note: These statements serve as your personal promise that the above is true. If I find that you have not been true to ALL of the four statements above, you will get a zero for the assignment and receive an academic violation report (which goes on your academic record). Both are minor compared to the loss of your integrity.