Instruction for final Project: Read carefully all instructions.

1. All projects are due on October 21, 2017 at 11:59pm. Project not delivered at that time will receive a 10% deduction for each day of being late. Projects delivered before October 18, 2017 will receive a 5-point bonus to be applied to the final project grade.
2. All project will be evaluated based on the rubric attached to these instructions.
3. The project must be based on the topics discussed on the Labs of this course. Failure to use the terms will receive a deduction in points.
4. The instructions are similar for all cases but read carefully the instructions of each project since all are different scenarios.
5. All projects must include a loop style menu which will only close if the user decides to.
6. All projects will save the information to two different file types: txt and csv. In many of the cases the user must specify the path and name of the file.
7. When printing in console the information should be readable and in tabular form.
8. User entries must be validated always.
9. The organization and readability of the program will be determined by the easiness of use of the console menu.
10. All programs must use the concept of base class, hierarchy, template class, at least two functions of the template class must be overloaded.
11. All programs must handle dates using a class.
12. As an option within the menu the information of all the creators of the project must be specified. (student's complete name, student's id, student's major and student's email)
13. On Dropbox the group/student is responsible for uploading the entire solution including the .exe of the solution. The files used as examples of the system should also be uploaded with testing data.

Rubric:

Project 1: Pharmacy Inventory

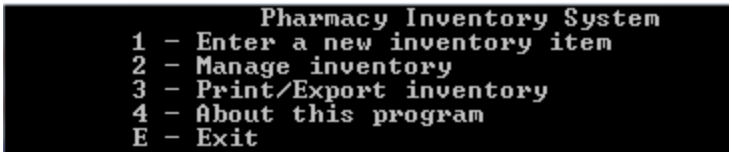
Design and develop a program to manage a pharmacy inventory. This pharmacy handles three types of medications: over the counter medication, prescribed regular medication and prescribed controlled medication. Each medication has a price, it is stored in a bin numbered by letters and its name contains: name of medication, dosage and unit of measure.

Example of a medication: Children's Aspirin 25 MG located at bin BR-CN with a cost of $0.50 each milligram.

Your program should include a main menu that allows the user to enter a new pharmacy item, search for pharmacy items containing a specific name, print all medications on inventory and edit an inventory item. Upon printing all medications items, the user can decide if it wants the list to be exported to a csv file (in which the user specifies the path), a txt file (in which the user specifies the path) or view on the console (print in console).

All medication items have the date in which they were entered stored as part of their information. Upon searching the user must be able to select to search by name, by bin, or by entry date.

Upon edit, the user can update the name, the dosage and unit of the medication and the cost. By pressing this option the user can decide to cancel and not continue with the update or accept the changes. If the user accepts the changes the system will update the entry date to the new current date. The new location of bin must be updated. A medication can also be inactive.

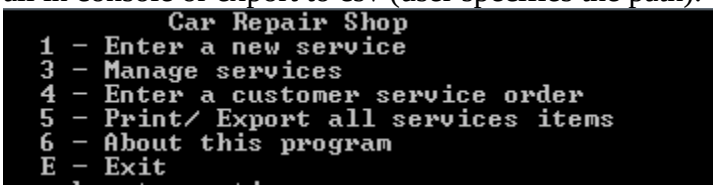


Project 2: Fast Food Restaurant

Design and develop a Fast Food Restaurant. Just like any fast food you have visited a fast food manages different orders of food and manages a menu of food available with costs. Your menu should allow the user to enter a new menu item (hamburger, fries, beverage, etc.), assign a cost and handle the location of its preparation (fryer, stove, etc.). As a second option the system should allow the user to enter a new order. When entering the new order, the system should display all the menu and calculate the total price for the order. The user can then select to print the receipt which will be a txt generated with the current date as name. The user can decide to export all inventory items to a csv file or print all items in the console. The user can decide to create combos, each combo will have a maximum of 4 items and a cost. The cost of the combo doesn't have to be the sum of each item, since bulk pricing usually results in a better cost for the customer. Items in the menu can be inactive and all contain the property of date added which is the date of entering the new item.

Project 3: Car Repair Shop

Design and develop a Car Repair Shop. This shop offers a variety of services to its customers like oil change, new tires, balance tires, transmission liquid change, car wash, car paint, etc. Your program should have a menu in which the user can establish all the services offered. Each service has a name, a location and price. The program also allows to enter a new customer order. The customer order allows the user to select all services to be offered by the repair shop and calculate a total due. The user can select to print the receipt in which case the receipt will be saved in a txt file with the name of the customer. At any time, the user can select to update a service. Upon editing a service the system will save the created date of the service with the current date. At any time the user can print all the services offered by the Car Repair Shop and can either select to print all in console or export to csv (user specifies the path).

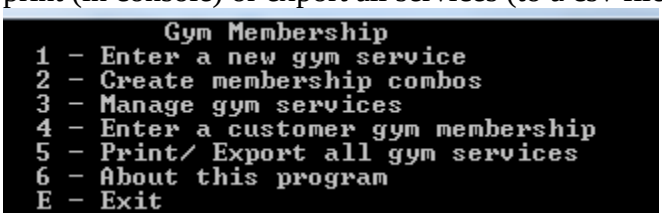


Project 4: Gym Membership

Design and develop a Gym Membership. This gym offers as part of its services different memberships. Each membership includes several services. For example, the first membership is a regular one which only includes access to the equipment for a cost of $10 a month. The second type of membership includes access to equipment and a personal trainer for the cost of $20 a month. Also the members of the gym have access to a sauna, yoga classes, Zumba classes, etc.

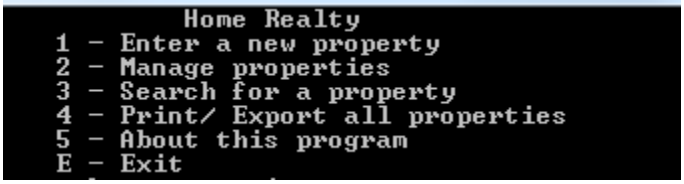
Your program should be able to ask the user if it wants to enter a new service. Each service has a name, a moment of the day offered (morning, afternoon, night), a cost and the date it was entered.

The user of your program can also select to create combos (memberships) in which it combines the services and assigns a name and a new cost to it. The cost of the membership doesn't have to be the sum of the service's cost since the combination of services usually results in a less cost to the customer. Your program will allow the user to enter a new customer purchase of membership. It will allow the user to select a combo and add additional services or add services one by one. The system should calculate the total sum of the membership and print a receipt to a txt file which includes the name of the customer. At any time, the user can select to update the services, in this case the date of entry will be updated. Services can be inactive. At any time the user can select to print (in console) or export all services (to a csv file which the user specifies the path).



Project 5: Home Realty

Design and Develop a Home Realty system. A Home Realty system consists of an inventory of houses. Each house has properties like number of bedrooms, number of bathrooms and other characteristics like recently renovated or covered terrace. Each house has a selling price. Your system should allow the user to enter a new property to the system, search for a property, edit a property and export all properties to a csv (path specified by the user) or txt file (path specified by the user). When searching for a property the user must be able to search by name, by location or by properties (example: all properties with 4 bedrooms). Your system should store the date added of each property. Upon editing the date should be modified to the current date. A house can be sold at any time, so your system must have the ability to store the sell date for each property.



Project 6: Cinema

Design and develop a Cinema. A Cinema offers movies in different theaters, each movie has a starting date and an end date. Your system should allow the user to enter a new movie with its title, starting date, language played, etc. Your system should allow the user to manage the movies and change its properties. Your system should allow the user to search for a title movie based on starting date or by title or its properties (example: all movies PG-13). Your system should allow the user to print the entire list of movies either to a csv, txt or to the console. (in the case of csv or txt the user specifies the path).

Project 7: Electronics Repair Shop

Design and develop an Electronic Repair Shop. In this shop many services are offered like: cleaning up virus on computers, substituting a motherboard, fixing broken phone screens, etc. Each service has a cost and an area of the shop which oversees doing the repair. Your system should be able to create combos like New Computer Installation which includes installing office, installing an anti-virus and installing printers. A combo cost shouldn't always be the sum of the services, since in practice usually combos are reflected as a less cost to the customer. The system should allow the user to enter a new customer order. After finishing the order the total of the services should be displayed and the receipt should be printed in a txt file with the name of the customer.

At any time the system can be used to print/export all services entered. When this happens the user can specify the path of the csv file. The date class should be introduced as the date of entry of each service and the date modified.

Project 8: Pluming Service Shop

Design and develop a Pluming Service Shop. A pluming service shop offers a variety of services like unclogging pluming, installing new pluming, updating pluming, etc. Each service has a cost and an area of the shop which oversees doing the repair (Expert Plummer, Beginner Plummer, etc.). Your system should be able to create combos like Installing New Pluming in shower plus updating pluming in faucet. A combo cost shouldn't always be the sum of the services, since in practice usually combos are reflected as a less cost to the customer. The system should allow the user to enter a new customer order. After finishing the order the total of the services should be displayed and the receipt should be printed in a txt file with the name of the customer. At any time the system can be used to print/export all services entered. When this happens the user can specify the path of the csv file. The date class should be introduced as the date of the service to be offered.

Project 9: Food Truck Restaurant

Design and develop a Food Truck Restaurant. Just like any food truck you have visited a food truck manages different orders of food and manages a menu of food available with costs. Your menu should allow the user to enter a new menu item (tacos, nachos, etc.), assign a cost and handle the location of its preparation (fryer, stove, etc.). As a second option the system should allow the user to enter a new order. When entering the new order, the system should display all the menu and calculate the total price for the order. The user can then select to print the receipt which will be a txt generated with the current date as name. The user can decide to export all inventory items to a csv file or print all items in the console. The user can decide to create combos, each combo will have a maximum of 4 items and a cost. The cost of the combo doesn't have to be the sum of each item, since bulk pricing usually results in a better cost for the customer. Items in the menu can be inactive and all contain the property of date added which is the date of entering the new item.

Project 10: Pre-school and Day Care center

Design and develop a pre-school and day care center. A preschool/daycare center has a list (inventory) of children that are currently enrolled. Each child is assign to a group or class (maternal, toddler, pre-pre, pre-k). Each child has a guardian or parents that are responsible for them. Introduce the date class as part of the birth date of the child to calculate in which of the group the child belongs to. The system should be able to enter a new child and classify it in a specific group. At any time the system can edit a child's information. At any time the system can be asked to print/export the child list either on console or to export to a txt file or csv file. The system should allow the user to search for a specific child based on the name, gender, or birth date.