Homework 4

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1. **Problem 1:**

* Step 1: I create class *Date* with 3 data members: *int month, int day, int year*, and constructor *Date()*. I also create some methods such as: *setDate(int mm,int dd, int yy), setMonth(int mm), setDay(int dd), setYear(int yy), getDay() const, getMonth() const, getYear() const, and getDate(), showDate()*.
  + *getDate()*: method for user enter string date with format “mm/dd/yy” and then using *substr()* to get sub string and store in variable month, day, year. If year > 0 and year < 15, year will add “20” into string *sYear*. If year >=15 program will add “19” into string *sYear*.
  + *showDate():* method convert int year, month, day into *sYear, sMonth*, *sDay* that is shown on screen by format “mm/dd/yy”.
* Step 2: I declare some functions such as: *sumOfDate(Date d)*, *calRemainDay(Date dob), calAge(Date dob), getYearNow(), getMonthNow(), getDayNow(), sumOfDateNow().*
  + *getDayNow()*: function get day of system.
  + *getYearNow()*: function get year of system.
  + *getMonthNow()*: function get month of system.
  + *calAge(Date dob)*: function calculate Age which base on user’s date of birth.
  + *sumOfDayNow()*: function calculate the number of days from January 1st to Now.
  + *sumOfDate()*: function calculate the number of days from January 1st to user’s date of birth.
  + *calRemainDay(Date dob)*: function calculate the number of days from now to user’s next birthday.

1. **Problem 2:**

* Step 1: I create class *CarPart()* with 4 data members include : *string nameOfCar, double cost, string serial, and static int count*. I initialize constructor *CarPart() include: nameOfCar=””, cost=0, serial=”0”*. I also create 8 methods: *setNameOfCar(string n), setCost(double c), setSerial(string s), showInfo(), getCount()* , and 3 methods const: *getNameOfCar(), getCost(), getSerial()*;
* Step 2: In int main() I write readFile.open(FILE1) and use if condition to check whether file exist or not. If file cannot be opened, output will print “Error” and exit program. If file can be opened, program will continue. At the next loop while() I use getline() to get the content each line put data into variable *is*, after that I will put the value of *is* into 2D array *c[arraysize][arraysize]* respectively.
* Step 3: I initialize pointer array *car[arraysize]* of class *CarPart*. Next I use loop for() to set the value for each object car, and show the information of carpart such as: nameOfCar, cost, and also print the quantity of carpart.
* Step 4: Program lets user enter the serial for each carpart. Variable m is the count when user enter serial number for each carpart. If user enter the serial is 0 and m > 14, program will finish and show the information of all carpart.

1. **Problem 3:**

* I create class bMoney include: data member *long double money*, method *mstold(string ms)*, *ldtoms(long double ld)* in private access, and 4 methods public access: *getmoney(), getM(), putmoney(), madd(bMoney m1,bMoney m2).*
  + *putmoney():* User enter money with format ($123,345,555.00), then it will be convert by method *mstold(string ms)* and assign to variable *money.*
  + *getmoney():* method show money on the screen after convert it into string by using method *ldtoms(money).*
  + *getM():* return the value of *money*.
  + *madd(bMoney m1, bMoney m2):* method calculate Sum of two the amount of the money which user entered. Then show the result to the screen.
  + *mstold(string ms):* using function *erase()* and *remove()* to remove character ‘$’ and ‘,’, then using *stringstream*  to convert type string into type double and store it in the variable *money.*
  + *ldtoms(long double ld):* using object *sld*  in class *ostringstream* to convert type double into sequence of character. This sequence of characters can be accessed directly as a *string* object, using member *str*.

*(Refer to* [*http://www.cplusplus.com/reference/sstream/ostringstream*](http://www.cplusplus.com/reference/sstream/ostringstream) *and* [*http://www.dreamincode.net/forums/topic/230136-question-formatting-numbers-with-comma-separators*](http://www.dreamincode.net/forums/topic/230136-question-formatting-numbers-with-comma-separators) *).*