CEIT 211

Lab exercises

1. Write a program to simulate elections. For this purpose, create class **Candidate** with data members name (string), vote(int), percent (double), win_or_not(bloolean). Program will create an array of this class type for 10 candidates. It will input candidate names, then will update vote of each candidate as user inputs data until user stops. Once the votes are entered, program will calculate percentage of each candidate and update the percent of each candidate. It will then set the data member win_or_not then display the winner on the screen.

   Class will have:

   -Constructor to set vote, percent, win_or_not members to zero

   - member function to set the name to the parameter it receives

   -member function that receives an integer parameter and updates vote member by that parameter value

   -member function that sets win_or_not member to the parameter it receives

   -member functions that return each data member

   Sample run:

   Enter name of candidate 1: ahmet
   Enter name of candidate 2: ayse
   ……
   Enter candidate name and vote: ayse 12345
   Do you wanna continue(Y/N): y
   …….
   Enter candidate name and vote: veli 98765
   Do you wanna continue(Y/N): n

   The winner is ayse with 1234567 votes and 32%.

2. Write a class to represent a line ax+b=c. Assume both a and be b cannot be zero. If a =0, it is a horizontal line, if b=0 it is a vertical line. The slope is defined as –a/b. Two lines are parallel if they have the same slope or if they both are vertical lines. Two lines are perpendicular if one is vertical and other is horizontal or if product of their slope is -1. Class will have:

   a. Data members a,b,c
   b. Constructor that inputs a,b,c from user
   c. Member function findSlope() finds the slope if it is non vertical

d. Member function that determines if two lines are parallel.
e. Friend function that determines if two lines are perpendicular
f. Member function that finds the point of intersection if the lines are not parallel.
g. Necessary set and get functions

Test your program for two lines which are parallel, perpendicular and non parallel.

3. Write a program to implement composition.
   Class **Book** will hold information name,book id, price of books. It will have a constructor to initialize the data members by user input. It will have set and get functions as necessary.
   Write another class **Writer** to hold info of a writer. It will have name of the writer and array of books to hold books' data of the writer. Constructor will initialize the data members by user input. It will have a member function that will input book id and number of sold for 10 books and will calculate and display the money paid to the writer.