**Write a program that reads the data in the file and displays the car number, miles driven, gallons used and the miles per gallon for each car. The output should also contain the total miles drive, total gallons used, and average miles per gallon for all the cars. These totals should be displayed at the end of the output report.**

#include <iostream>

#include <fstream>

using namespace std;

struct vechile

{

int carnum;

int miles;

int gallons;

};

int main()

{

vechile cars[5];

ifstream openfile; //for reading a file also ifstream is like a type (i.e int, double, etc...)

openfile.open("car.txt");

int i = 0;

int t = 0;

int total1 = 0;

int total2 = 0;

int mpg;

double mpgtotal = 0;

double avg;

if (openfile.is\_open())

{

while (!openfile.eof())

{

openfile >> cars[i].carnum >> cars[i].miles >> cars[i].gallons;

//openfile >> cars[i].miles;

//openfile >> cars[i].gallons;

cout << "Car number: " << cars[i].carnum << endl;

cout << " Car miles driven:" << cars[i].miles << endl;

cout << " Car gallons used " << cars[i].gallons << endl;

mpg = cars[i].miles / cars[i].gallons;

cout << "Miles per gallon for car is: " << mpg << endl;

total1 = total1 + cars[i].miles;

total2 = total2 + cars[i].gallons;

mpgtotal = mpgtotal + mpg;

i++;

}

}

else

{

cout << "Open file failed" << endl;

}

openfile.close();

avg = (mpgtotal/5);

cout << "Total miles driven: " << total1 << "\nTotal gallons used: " << total2 << endl;

cout << "Average miles per gallon for all the cars: " << avg << endl;

system("pause");

return 0;

}

**Using the data type declared, write a C++ program that interactively accepts the above data into an array of six structures. Once the data have been entered, the program should create a payroll report listing each employee’s name, number, and gross pay. Include the total gross pay of all employees at the end of the report.**

#include <iostream>

#include <string>

#include<iomanip>

using namespace std;

struct employee

{

double number[5];

double rate[5];

double hours[5];

string name[5];

};

int main()

{

employee input;

int totalnum = 0;

double totalrate = 0;

int totalhours = 0;

double bigtot = 0;

int x;

int totgross[5];

//string names = input.name[5];

for (int t = 0; t < 5;t++)

{

cout << "Enter the employee's name: " << endl;

cin >> input.name[t];

//getline(cin, input.name[t]);

}

for (int t = 0;t < 5;t++)

{

cout << "Number for employee " << (t + 1) << ":" << endl;

cin >> input.number[t];

//totalnum = totalnum + input.number[t];

}

for (int t = 0;t < 5;t++)

{

cout << "Rate for employee " << (t+ 1) << ":" << endl;

cin >> input.rate[t];

//totalrate = totalrate + input.rate[t];

}

for (int t = 0;t < 5;t++)

{

cout << "Hours worked by employee " << (t + 1) << ":" << endl;

cin >> input.hours[t];

//totalhours = totalhours + input.hours[t];

}

/\*for (int t = 0;t < 5;t++)

{

cout<<

}\*/

cout << "Number Name Rate Hour" << endl;

for (int t = 0;t < 5;t++)

{

totgross[t] = input.hours[t] \* input.rate[t];

cout << input.number[t] << " " << input.name[t] << " " << input.rate[t] << " " << input.hours[t] << " " << totgross[t] << endl;

// cout << "Total gross pay for employee: " << (t + 1) << "=" << totgross[t] << endl; //"\n";

}

//bigtot = ( totalrate) \* totalhours;

for (int t = 0;t < 5;t++)

{

bigtot = bigtot + totgross[t];

}

cout << "Total gross pay for all employees = " << bigtot << endl;

system("pause");

return 0;

**Write a function named findmax() that finds and displays the maximum values in a two dimensional array of integers. The array should be declared as a 10 row by 15 column array of integers in main() and populated with random numbers between 0 and 100. Modify the function written above so that it also displays the row and column numbers of the element with the maximum value.**

#include <iostream>

#include<time.h> //this library is used to use the srand(time(NULL)) function

using namespace std;

void findmax(int x[10][15])

{

int max;

int maxrow;

int maxcol;

for (int i = 0;i < 10;i++) //this for statement prompts the user to enter

{

for (int v = 0;v < 15;v++)

{

if (i == 0 && v == 0) //this if statement is used to make the max intially equal zero so the max can have a basis at 0 in the array (i.e 0 by 0 spot in the 10 by 15 array)

{

max = x[i][v];

maxrow = i; //to determine the excact row postion of where the max intial row spot of the array: in the if statment where the max is at [0][0] set maxrow variable equal to the row varible that'll be used to place the max at 0x0 so that the maxrow will equal max[0]

maxcol = v; //to determine the excact col postion of where the max intial col spot of the array: in the if statment where the max is at [0][0] set maxcol variable equal to the row varible that'll be used to place the max at 0x0 so that the maxcol will equal max[0]

}

if (max < x[i][v]) //this if statement replaces the max variable with the new maximum # in the array as it randomly inputs numbers from 0 -100 in to the 10by15 array from the main function

{

max = x[i][v];

maxrow = i; // to determine the excact row postion of where the max new row spot of the array: in the if statment where the max is at somewhere randmaly in the array set maxrow variable equal to the row varible that'll be used to place the max at a new row spotso that the maxrow will equal max[?][]

maxcol = v; //to determine the excact col postion of where the max new col spot of the array: in the if statment where the max is at [0][0] somewhere randmaly in the array set maxcol variable equal to the row varible that'll be used to place the max at a new col spot so that the maxcol will equal max[][?]

}

}

}

cout << " Your Max is : " << max;

cout << "This is the row the max is in " << maxrow +1 << " and this is the column " << maxcol+1 << endl;

}

int main()

{

int array[10][15];

srand(time(NULL));

for (int i = 0;i < 10;i++) //this for statement tells the computer to input rand #s into all the rows of the array (i.e the floor 1 room 1, room 2, room3 etc hotel)for example this for loop runs as many times as there is rows in this instance it runs 10 times

{

for (int v = 0;v < 15;v++) //this for loop inputs rand numbers into all the columns (i.e floor 1 room 1, floor 2 room 1 etc hotel) for example this for loop runs as many times as there is columns in this instance it runs 15 times

{

array[i][v] = rand() % 101; //<---remember to assign the rand numbers to the row and columns row by row and column by column

cout << array[i][v] << " || ";

}

cout << "\n";

}

findmax(array);

system("pause");

return 0;

}