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Program 9

SE114.11

PURPOSE:

The Providence Police Department keeps track of traffic violations on a daily basis.

I have been asked to create a program which will process traffic violations and determine

the amount owed to the Police Department.

VARIABLE DICTIONARY:

REPRESENTS VARIABLE

First name first\_name

First run first\_run

Last name last\_name

Moving or non-moving violation moving\_or\_non\_moving

Moving violation fine moving\_violation\_fine

Non moving violation fine non\_moving\_violation\_fine

No penalty amount no\_penalty\_amount

Number of citations number\_of\_citations

Penalty amount penalty\_amount

Penalty to add to total penalty\_to\_add

Run reply run\_reply

Total amount assessed total\_amount\_assessed

Total due total\_due

Total fines total\_fines

Total moving violations total\_moving\_violations

Total non-moving violations total\_non\_moving\_violations

Total penalties total\_penalties

Total with penalty total\_plus\_penalty

Totals switch totals\_switch

Total tickets total\_tickets

Violations untill penalty violations\_untill\_penalty

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#include <iostream>

#include <string>

using namespace std;

char first\_run;

char moving\_or\_non\_moving;

char run\_reply;

char totals\_switch;

string first\_name;

string last\_name;

int number\_of\_citations;

int violations\_untill\_penalty;

double moving\_violation\_fine;

double non\_moving\_violation\_fine;

double no\_penalty\_amount;

double penalty\_amount;

double penalty\_to\_add;

double total\_amount\_assessed;

double total\_due;

double total\_fines;

double total\_moving\_violations;

double total\_non\_moving\_violations;

double total\_penalties;

double total\_plus\_penalty;

double total\_tickets;

void setup\_function();

void input\_function();

void process\_output\_function();

void totals\_function();

int main()

{

first\_run = 'Y';

system("cls");

cout << "Do you want to run the traffic violation application? (Y/N) ";

cin >> run\_reply;

run\_reply = toupper(run\_reply);

while (run\_reply != 'Y' && run\_reply != 'N')

{

cout << "Error" << endl;

cout << "Enter either a Y or N " << endl;

cin >> run\_reply;

run\_reply = toupper(run\_reply);

}

system ("cls");

while (run\_reply == 'Y')

{

if (first\_run == 'Y')

{

setup\_function();

first\_run = 'N';

}

input\_function();

process\_output\_function();

cout << "Would you like to run another traffic violation? (Y/N) " << endl;

cin >> run\_reply;

run\_reply = toupper(run\_reply);

while (run\_reply != 'Y' && run\_reply != 'N')

{

cout << "Error" << endl;

cout << "Enter either a Y or N " << endl;

cin >> run\_reply;

run\_reply = toupper(run\_reply);

}

system ("cls");

}

if (totals\_switch == 'Y')

{

totals\_function();

}

return 0;

}

void setup\_function()

{

moving\_violation\_fine = 200;

non\_moving\_violation\_fine = 100;

penalty\_amount = 50;

no\_penalty\_amount = 0;

violations\_untill\_penalty = 3;

total\_tickets = 0;

total\_moving\_violations = 0;

total\_non\_moving\_violations = 0;

total\_fines = 0;

total\_penalties = 0;

total\_amount\_assessed = 0;

totals\_switch = 'Y';

}

void input\_function()

{

cout << "Last Name: ";

cin >> last\_name;

cout << "First Name: ";

cin >> first\_name;

cout << "Moving or Non-Moving Violation: (M/N) ";

cin >> moving\_or\_non\_moving;

moving\_or\_non\_moving = toupper(moving\_or\_non\_moving);

while (moving\_or\_non\_moving != 'M' && moving\_or\_non\_moving != 'N')

{

cout << "Error" << endl;

cout << "Enter either an M or N " << endl;

cin >> moving\_or\_non\_moving;

moving\_or\_non\_moving = toupper(moving\_or\_non\_moving);

}

cout << "Number of Citations in the Past Three Years: ";

cin >> number\_of\_citations;

system("cls");

}

void process\_output\_function()

{

total\_tickets = total\_tickets + 1;

if (moving\_or\_non\_moving == 'M')

{

total\_moving\_violations = total\_moving\_violations + 1;

total\_due = moving\_violation\_fine;

}

else

{

total\_non\_moving\_violations = total\_non\_moving\_violations + 1;

total\_due = non\_moving\_violation\_fine;

}

total\_fines = total\_fines + total\_due;

if (number\_of\_citations > violations\_untill\_penalty)

{

penalty\_to\_add = penalty\_amount;

}

else

{

penalty\_to\_add = no\_penalty\_amount;

}

total\_plus\_penalty = total\_due + penalty\_to\_add;

total\_penalties = total\_penalties + penalty\_to\_add;

total\_amount\_assessed = total\_amount\_assessed + total\_plus\_penalty;

if (number\_of\_citations > violations\_untill\_penalty)

{

cout << first\_name << " " << last\_name << " has been assessed a $" << total\_due << " fine and a $" << penalty\_to\_add << " penalty. " << endl;

cout << "Total Due: $" << total\_plus\_penalty << endl;

}

else

{

cout << first\_name << " " << last\_name << " has been assessed a $" << total\_due << " fine." << endl;

cout << "Total Due: $" << total\_plus\_penalty << endl;

}

}

void totals\_function()

{

cout << "Total tickets processed: " << total\_tickets << endl;

cout << "Total moving violations processed: " << total\_moving\_violations << endl;

cout << "Total non-moving violations processed: " << total\_non\_moving\_violations << endl;

cout << "Total fines assessed: $" << total\_fines << endl;

cout << "Total penalties assessed: $" << total\_penalties << endl;

cout << "Total amount Assessed: $" << total\_amount\_assessed << endl;

system("pause");

}