ENSF 337– Fall 2018 - Tutorial 10

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Consider the following definition of `struct` City and the following program. Then, write the definition of two functions: `write_binary_file`, and `change_city`. You may assume that function `print_from_binary` that is supposed to read the content of a binary file and print them on the screen, is already defined properly.

```
#include <iostream>
#include <fstream>
using namespace std;
const int size = 3;

struct City {
    double x, y;
    char name[30];
};


void write_binary_file(City cities[], int size, ofstream& stream, char* filename);
/* PROMISES: opens a binary file and writes the content of array cities (0..size-1) into the file. */

void change_city(cost char* bin_filename, const char* old_name, const char* new_name);
/* PROMISES: changes a data field in record in a binary file: Opens the binary file called bin_filename. Searches
 * for the record matching the oldname, and changes the old_name with the new_name, at end closes the file closes
 * the file*/


int main() {
    char txt_filename[] = "cities.txt";
    char bin_filename[] = "cities.bin";

    City cities[size] = {{100, 50, "City of Calgary"}, {100, 150, "City of Edmonton"}
        , {50, 50, "Vancouver"}};

    ofstream out_bin;
    write_binary_file(cities, size, out_bin, bin_filename);
    print_from_binary(bin_filename);
    change_city(bin_filename, "Vancouver", "City of Vancouver" );
    cout << "\nThe content of the binary file after changing city name:";
    print_from_binary(bin_filename);
    return 0;
}
```

Expected output of the program:

```
Name: City of Calgary
x coordinate: 100
y coordinate: 50
-------------------
Name: City of Edmonton
x coordinate: 100
y coordinate: 150
-------------------
Name: Vancouver
x coordinate: 50
y coordinate: 50

The content of the binary file after changing city name: Name: City of Calgary
x coordinate: 100
y coordinate: 50
-------------------
Name: City of Edmonton
x coordinate: 100
y coordinate: 150
-------------------
Name: City of Vancouver
x coordinate: 50
y coordinate: 50
```