Course: ENSF 614 – Fall 2023  
Lab #: Lab 4  
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Lab 4 Exercise A:

CODE:

String\_Vector transpose(const String\_Vector& sv) {

// Ensure there is at least one row in the input vector.

if (sv.empty()) {

cerr << "Input vector is empty." << endl;

String\_Vector vs; // Return an empty vector.

return vs;

}

int numRows = sv.size();

int numCols = sv[0].size(); // Assuming all strings in sv have the same length.

// Initialize vs with numRows of empty strings to represent columns.

String\_Vector vs(numCols, std::string(numRows, ' '));

for (int i = 0; i < numRows; i++) {

for (int j = 0; j < numCols; j++) {

vs[j][i] = sv[i][j]; // Swap rows and columns.

}

}

return vs;

}

OUTPUT:

ABCD

EFGH

IJKL

MNOP

QRST

AEIMQ

BFJNR

CGKOS

DHLPT

Program ended with exit code: 0

Lab 4 Exercise B:

CODE:

void print\_from\_binary(char\* filename) {

/\* Studnets must complete the implementaiton of this file. \*/

ifstream binaryFile(filename, ios::binary);

string textFilename(filename);

textFilename += ".txt";

ofstream textFile(textFilename);

City city;

while (binaryFile.read((char\*)&city, sizeof(City))) {

cout << "Name: " << city.name << ", x coordinate: " << city.x << ", y coordinate: " << city.y << endl;

textFile << "Name: " << city.name << ", x coordinate: " << city.x << ", y coordinate: " << city.y << endl;

}

binaryFile.close();

textFile.close();

}

OUTPUT:

Name: Calgary, x coordinate: 100, y coordinate: 50

Name: Edmonton, x coordinate: 100, y coordinate: 150

Name: Vancouver, x coordinate: 50, y coordinate: 50

Name: Regina, x coordinate: 200, y coordinate: 50

Name: Toronto, x coordinate: 500, y coordinate: 50

Name: Montreal, x coordinate: 200, y coordinate: 50