#include <iostream>

#include <fstream>

#include <string>

// Structure to represent a record

struct Record {

int id;

std::string name;

// Add other fields as per your requirements

};

// Function to insert a record into the direct access file

void insertRecord(const Record& record) {

std::ofstream dataFile("data.txt", std::ios::binary | std::ios::app);

std::ofstream indexFile("index.txt", std::ios::binary | std::ios::app);

// Get the current position (offset) in the data file

dataFile.seekp(0, std::ios::end);

int position = dataFile.tellp();

// Write the record to the data file

dataFile.write(reinterpret\_cast<const char\*>(&record), sizeof(Record));

dataFile.close();

// Write the record position to the index file

indexFile.write(reinterpret\_cast<const char\*>(&position), sizeof(int));

indexFile.close();

}

// Function to delete a record from the direct access file

void deleteRecord(int idToDelete) {

std::fstream dataFile("data.txt", std::ios::binary | std::ios::in | std::ios::out);

std::fstream indexFile("index.txt", std::ios::binary | std::ios::in | std::ios::out);

int position;

bool found = false;

// Search for the record position associated with the given id

while (indexFile.read(reinterpret\_cast<char\*>(&position), sizeof(int))) {

Record record;

dataFile.seekg(position);

dataFile.read(reinterpret\_cast<char\*>(&record), sizeof(Record));

if (record.id == idToDelete) {

// Overwrite the record with empty or dummy data

Record dummyRecord;

dataFile.seekp(position);

dataFile.write(reinterpret\_cast<const char\*>(&dummyRecord), sizeof(Record));

found = true;

break;

}

}

if (found) {

std::cout << "Record with ID " << idToDelete << " has been deleted." << std::endl;

} else {

std::cout << "Record with ID " << idToDelete << " not found." << std::endl;

}

dataFile.close();

indexFile.close();

}

int main() {

// Example usage

Record record1 = { 1, "John" };

Record record2 = { 2, "Jane" };

Record record3 = { 3, "Mike" };

// Insert records

insertRecord(record1);

insertRecord(record2);

insertRecord(record3);

// Delete a record

deleteRecord(2);

return 0;

}