Lab Report:

Course: CNG104 Programming

Lab Title: File Operations

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LAB Number: 4

**TASKS**

Task 1:

#include <iostream>

#include <fstream>

using namespace std;

int main() {

ofstream file("sample.txt");

if (file.is\_open()) {

file << "Hello, World!" << endl;

file.close();

}

else {

cout << "Error" << endl;

}

return 0;

}

Task 2:

#include <iostream>

#include <fstream>

using namespace std;

int main() {

double width, height;

cout << "Enter the width : ";

cin >> width;

cout << "Enter the height : ";

cin >> height;

double area = width \* height;

ofstream file("rectangle\_area.txt");

if (file.is\_open()) {

file << "Area of the rectangle: " << area << endl;

file.close();

}

else {

std::cout << "Error." << std::endl;

}

return 0;

}

Task 3:

#include <iostream>

#include <fstream>

using namespace std;

int main() {

int numbers[5] = { 1, 2, 3, 4, 5 };

ofstream file("squares.txt");

if (file.is\_open()) {

for (int i = 0; i < 5; ++i) {

int square = numbers[i] \* numbers[i];

file << square << endl;

}

file.close();

}

else {

cout << "Error " << endl;

}

return 0;

}

Task 4:

#include <iostream>

#include <fstream>

#include <string>

using namespace std;

int main() {

string firstName, lastName;

cout << "Enter your first name: ";

cin >> firstName;

cout << "Enter your last name: ";

cin >> lastName;

ofstream file("names.log", ios::app);

if (file.is\_open()) {

file << firstName << " " << lastName << endl;

file.close();

}

else {

cout << "Error opening the file." << endl;

}

return 0;

}

Task 5:

#include <iostream>

#include <fstream>

using namespace std;

int main() {

ifstream file("sample.txt");

int charCount = 0;

char ch;

if (file.is\_open()) {

cout << "Reading characters from file..." << endl;

while (file.get(ch)) {

charCount++;

}

file.close();

cout << "Total number of characters: " << charCount << endl;

}

else {

cerr << "Error" << endl;

}

return 0;

}

Task 6:

#include <iostream>

#include <fstream>

using namespace std;

int main() {

ifstream source("source.txt");

ofstream destination("destination.txt");

if (source && destination) {

char ch;

while (source.get(ch)) {

destination.put(ch);

}

cout << "File copied " << endl;

}

else {

cout << "Error: Could not open source or destination file." << endl;

}

return 0;

}

Task 7:

#include <iostream>

#include <fstream>

#include <string>

using namespace std;

void searchStringInFile(const string& filename, const string& searchStr) {

ifstream file(filename);

if (file.is\_open()) {

int count = 0;

string line;

while (getline(file, line)) {

size\_t pos = 0;

while (true) {

pos = line.find(searchStr, pos);

if (pos == string::npos) break;

count++;

pos += searchStr.size();

}

}

cout << "Total occurrences found: " << count << endl;

} else {

cout << "Error: Could not open the file!" << endl;

}

}

int main() {

string filename, searchStr;

cout << "Enter file name: ";

getline(cin, filename);

cout << "Enter the string to search for: ";

getline(cin, searchStr);

searchStringInFile(filename, searchStr);

return 0;

}

Task 8:

int main() {

ifstream in("numbers.txt");

ofstream out("average.txt");

if (!in) {

cout << "Could not open numbers.txt" << endl;

}

else if (!out) {

cout << "Could not open average.txt" << endl;

}

else {

double x, sum = 0;

int count = 0;

while (in >> x) {

sum += x;

count++;

}

if (count > 0) {

double avg = sum / count;

cout << "Average: " << avg << endl;

}

else {

cout << "No numbers found in the file." << endl;

}

}

return 0;

}