

Project Description:

This program is a Student Grade Tracker. Built in C++, it loads student data taken from students.txt and displays all students and their respective grades. After prompting the user for a student id, the program uses binary search and calculates the average grade for that student and updates output.txt.

This project uses:

- Object-Oriented Programming
- Dynamic Memory
- Pointers
- Arrays
- Binary Search
- Strings
- File Input / Output (I/O)

Screenshots:

```
Microsoft Visual Studio Debug Console
Student List
Name: George, ID: 1, Grades: 70 100 52 Avg: 74.00
Name: Kelvin, ID: 2, Grades: 92 85 98 Avg: 91.67
Name: Jason, ID: 3, Grades: 82 68 95 Avg: 81.67

Enter student ID to search for: 1

Student found:
Name: George, ID: 1, Grades: 70 100 52 Avg: 74.00

Grades saved to output.txt
```

```
Microsoft Visual Studio Debug Console
Student List
Name: George, ID: 1, Grades: 70 100 52 Avg: 74.00
Name: Kelvin, ID: 2, Grades: 92 85 98 Avg: 91.67
Name: Jason, ID: 3, Grades: 82 68 95 Avg: 81.67

Enter student ID to search for: 2

Student found:
Name: Kelvin, ID: 2, Grades: 92 85 98 Avg: 91.67

Grades saved to output.txt
```

```
Microsoft Visual Studio Debug Console
Student List
Name: George, ID: 1, Grades: 70 100 52 Avg: 74.00
Name: Kelvin, ID: 2, Grades: 92 85 98 Avg: 91.67
Name: Jason, ID: 3, Grades: 82 68 95 Avg: 81.67

Enter student ID to search for: 3

Student found:
Name: Jason, ID: 3, Grades: 82 68 95 Avg: 81.67

Grades saved to output.txt
```

```
output - Notepad
File Edit Format View Help
Students Grades Report:
George (ID: 1) - Avg: 74.00
Kelvin (ID: 2) - Avg: 91.67
Jason (ID: 3) - Avg: 81.67
```

Challenges:

- Visual Studio organization → Used Solution Explorer in managing header and C++ files.
- Implementing binary search → Reviewed online resources and examples
- Code not compiling → Debugged diligently, reviewed syntax, and used comments to test certain areas