My Project

1.0.0

Generated by Doxygen 1.9.6

Chapter 1

Class Index

1.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

Chapter 3

Class Documentation

3.1 Student Struct Reference

Public Member Functions

- Student (string name, string faculty, int group, double average)

Public Attributes

- string name
- string faculty
- int group
- double average

Friends

- bool operator== (const Student &a, const Student &b)
- bool operator< (const Student &a, const Student &b)
- bool operator<= (const Student &a, const Student &b)
- bool operator> (const Student &a, const Student &b)
- bool operator>= (const Student &a, const Student &b)
- ostream & operator<< (ostream &os, const Student &a)

3.1.1 Constructor & Destructor Documentation

3.1.1.1 Student()

```
Student::Student (
            string name,
            string faculty,
            int group,
            double average )  [inline]
```

3.1.2 Friends And Related Function Documentation

3.1.2.1 operator<

```
bool operator< (
            const Student & a,
            const Student & b )  [friend]
```

3.1.2.2 operator<<

```
ostream & operator<< (
            ostream & os,
            const Student & a )  [friend]
```

3.1.2.3 operator<=

```
bool operator<= (
            const Student & a,
            const Student & b )  [friend]
```

3.1.2.4 operator==

```
bool operator== (
            const Student & a,
            const Student & b )  [friend]
```

3.1.2.5 operator>

```
bool operator> (
            const Student & a,
            const Student & b )  [friend]
```

3.1.2.6 operator>=

```
bool operator>= (
            const Student & a,
            const Student & b )  [friend]
```

3.1.3 Member Data Documentation

3.1.3.1 average

```
double Student::average
```

3.1.3.2 faculty

```
string Student::faculty
```

3.1.3.3 group

```
int Student::group
```

3.1.3.4 name

```
string Student::name
```

The documentation for this struct was generated from the following file:

- ProgTech1.cpp

Chapter 4

File Documentation

4.1 ProgTech1.cpp File Reference

```
#include <iostream>
#include <ctime>
#include <fstream>
#include <vector>
#include <chrono>
```

Classes

- struct Student

Functions

- string randomString (const int len)
- double randomDouble (double fMin, double fMax)
- void makeTxtFile ()
- vector< vector< Student > > readTxtFile ()
- vector< Student > selectSort (vector< Student > vec)
- vector< Student > bubbleSort (vector< Student > vec)
- vector< Student > shakerSort (vector< Student > vec)
- void writeOutput (string title, vector< vector< Student > > &res)
- void writeTime (string title, vector< std::chrono::steady_clock::time_point > time)
- int main ()

Variables

- string inputFile = "data.txt"
- string outputFile = "output.txt"
- string timeStampsFile = "timestamps.txt"
- int batchNum = 7
- int dims [7] = { 100, 500, 1000, 2000, 5000, 10000, 100000 }

4.1.1 Function Documentation

4.1.1.1 bubbleSort()

```
vector< Student > bubbleSort (
            vector< Student > vec )
```

4.1.1.2 main()

```
int main ( )
```

4.1.1.3 makeTxtFile()

```
void makeTxtFile ( )
```

4.1.1.4 randomDouble()

```
double randomDouble (
            double fMin,
            double fMax )
```

4.1.1.5 randomString()

```
string randomString (
            const int len )
```

4.1.1.6 readTxtFile()

```
vector< vector< Student > > readTxtFile ( )
```

4.1.1.7 selectSort()

```
vector< Student > selectSort (
            vector< Student > vec )
```

4.1.1.8 shakerSort()

```
vector< Student > shakerSort (
            vector< Student > vec )
```

4.1.1.9 writeOutput()

```
void writeOutput (
            string title,
            vector< vector< Student > > & res )
```

4.1.1.10 writeTime()

```
void writeTime (
            string title,
            vector< std::chrono::steady_clock::time_point > time )
```

4.1.2 Variable Documentation

4.1.2.1 batchNum

```
int batchNum = 7
```

4.1.2.2 dims

```
int dims[7] = { 100, 500, 1000, 2000, 5000, 10000, 100000 }
```

4.1.2.3 inputFile

```
string inputFile = "data.txt"
```

4.1.2.4 outputFile

```
string outputFile = "output.txt"
```

4.1.2.5 timeStampsFile

```
string timeStampsFile = "timestamps.txt"
```

Index