

My Project

1.0.0

Generated by Doxygen 1.9.6

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Chapter 1

Class Index

1.1 Class List

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

Student	5
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Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

ProgTech1.cpp	9
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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"
```


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