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Hierarchical Index

This inheritance list is sorted roughly, but not completely, alphabetically:

1.1 Class Hierarchy

I li con a co			

Human	 •	 ٠	 •	 •	•	•	 •	•	٠	٠		٠	•		•	٠	•		•	٠	•		•	•	٠	٠	/
student											 							 									7

2 Hierarchical Index

Class Index

2.1 Class List

Human	 	 	 							 				 		 			
student	 	 	 							 				 					

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

4 Class Index

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

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Class Documentation

4.1 Human Class Reference

Inheritance diagram for Human:

4.2 student Class Reference

Inheritance diagram for student:

Collaboration diagram for student:

Public Member Functions

- student (const student &other) noexcept
- student & operator= (const student &other) noexcept
- student (student &&other) noexcept
- student & operator= (student &&other) noexcept
- student (std::string v, std::string p, std::vector< float > pazymiai, float egz) noexcept
- void setPazymiai (std::vector< float > paz) noexcept
- void setEgzaminoRezultatas (float egz) noexcept
- void setGalutinisV (float V) noexcept
- void setGalutinisM (float M) noexcept
- const std::vector< float > & getPazymiai () const
- float getEgzaminoRezultatas () const
- float getGalutinisV () const
- float getGalutinisM () const
- float skaiciuotiVid () const
- · float skaiciuotiMed () const
- · void skaiciuotiGalutini (char galutinioBudas) override
- void addPazymys (float pazymys)

8 Class Documentation

Public Member Functions inherited from Human

- **Human** (const std::string &v, const std::string &p)
- const std::string & getVardas () const
- const std::string & getPavarde () const
- void **setVardas** (const std::string &v)
- void setPavarde (const std::string &p)

Friends

- std::ostream & operator<< (std::ostream &os, const student &studentas)
- std::istream & operator>> (std::istream &in, student &studentas)

Additional Inherited Members

Protected Attributes inherited from Human

- · std::string vardas
- std::string pavarde

4.2.1 Member Function Documentation

4.2.1.1 skaiciuotiGalutini()

Implements Human.

The documentation for this class was generated from the following files:

- C:/Users/Lenovo/Desktop/2-uzduotis/vector/include/student.h
- C:/Users/Lenovo/Desktop/2-uzduotis/vector/source/student.cpp

File Documentation

5.1 C:/Users/Lenovo/Desktop/2-uzduotis/vector/include/functions.h File Reference

this file contains functions declarations

```
#include <vector>
#include "student.h"
```

Include dependency graph for functions.h: This graph shows which files directly or indirectly include this file:

Functions

- void **rusiuotiOutput** (std::vector< student > &grupe, char rusiavimoBudas, char galutinioBudas)
- void **spausdinimasTerminale** (const std::vector< **student** > &grupe, char galutinioBudas)
- void **spausdinimasFaile** (const std::vector< student > &grupe, char galutinioBudas)
- void **generuotiFaila** (int pKiekis, int studentuKiekis, const std::string &failoPavadinimas)
- void spausdinimas (char spausBudas, char rusiavimoBudas, char galutinioBudas, std::vector < student > &grupe)
- void sortedStudentSpausdinimas (std::string lowGradeFailas, std::string highGradeFailas, std::vector<
 student > &nepazangus, std::vector<
 student > &normalus, char galutinioBudas)
- void **nuskaitytiGeneruotusFailus** (const std::string &failoPavadinimas, std::vector< student > &grupe, int pKiekis, char galutinioBudas)
- void skirstytiStudentus (std::vector< student > &grupe, std::vector< student > &nepazangus, std::vector< student > &normalus, char galutinioBudas)
- void **pirmas** (std::vector< student > &grupe, char spausBudas, char rusiavimoBudas, char galutinioBudas, int pKiekis)
- void **antras** (std::vector< student > &grupe, char spausBudas, char rusiavimoBudas, char galutinioBudas, int pKiekis)
- void trecias (std::vector< student > &grupe, const std::vector< std::string > &vardai, const std::vector< std::string > &pavardes, char spausBudas, char rusiavimoBudas, char galutinioBudas, int pKiekis)
- void **ketvirtas** (std::vector< student > &grupe, int pKiekis, char galutinioBudas)
- void **penktas** (int pKiekis)
- void sestas (std::vector< student > &grupe, std::vector< student > &testGrupe, std::vector< student > &nepazangus, std::vector< student > &normalus, char galutinioBudas, char rusiavimoBudas, int pKiekis)
- void **septintas** (char galutinioBudas)

5.1.1 Detailed Description

this file contains functions declarations

Author

Narbas

Version

v2.0

Date

2025-05-07

Copyright

Copyright (c) 2025

5.2 functions.h

Go to the documentation of this file.

```
00001
00011
00012 #ifndef FUNCTIONS_H
00013 #define FUNCTIONS_H
00014
00015 #include <vector>
00016 #include "student.h"
00017
00018 void rusiuotiOutput (std::vector<student>& grupe, char rusiavimoBudas, char galutinioBudas);
00019 void spausdinimasTerminale(const std::vector<student>& grupe, char galutinioBudas);
00020 void spausdinimasFaile(const std::vector<student>& grupe, char galutinioBudas);
00021 void generuotiFaila(int pKiekis, int studentuKiekis, const std::string& failoPavadinimas);
00022 void spausdinimas(char spausBudas, char rusiavimoBudas, char galutinioBudas,
             std::vector<student>&grupe);
00023 void sortedStudentSpausdinimas(std:: string lowGradeFailas, std::string highGradeFailas,
             std::vector<student>&nepazangus, std::vector<student>&normalus, char galutinioBudas);
00024 void nuskaitytiGeneruotusFailus(const std::string& failoPavadinimas, std::vector<student> & grupe, int
             pKiekis, char galutinioBudas);
00025 void skirstyti
Študentus<br/>(std::vector<student> & grupe, std::vector<student>& nepazangus,
             std::vector<student>& normalus, char galutinioBudas);
00026
00027 void pirmas(std::vector<student>& grupe, char spausBudas, char rusiavimoBudas, char galutinioBudas,
              int pKiekis);
00028 void antras(std::vector<student>& grupe, char spausBudas, char rusiavimoBudas, char galutinioBudas,
             int pKiekis);
00029 void trecias(std::vector<student>& grupe, const std::vector<std::string>& vardai, const
             std::vector<std::string>% pavardes, char spausBudas, char rusiavimoBudas, char galutinioBudas, int
             pKiekis);
00030 void ketvirtas(std::vector<student>& grupe, int pKiekis, char galutinioBudas);
00031 void penktas(int pKiekis);
00032\ \text{void sestas(std::vector} < \text{student} > \&\ \text{grupe, std::vector} < \text{student} > \&\ \text{testGrupe, std::vector} < \text{student} > \&\ \text{std::vector} < \text{student} > \&\ \text{std::vector} < \text{std::vect
             nepazangus, std::vector<student>& normalus, char galutinioBudas, char rusiavimoBudas, int pKiekis);
00033 void septintas(char galutinioBudas);
00034 #endif
```

5.3 C:/Users/Lenovo/Desktop/2-uzduotis/vector/include/student.h File Reference

this file contains Human and Student classes

```
#include <vector>
#include <string>
#include <iostream>
```

Include dependency graph for student.h: This graph shows which files directly or indirectly include this file:

5.4 student.h

Classes

- · class Human
- · class student

Functions

- std::ostream & operator<< (std::ostream &os, const student &studentas)
- std::istream & operator>> (std::istream &in, student &studentas)

5.3.1 Detailed Description

this file contains Human and Student classes

Author

Narbas

Version

v2.0

Date

2025-05-07

Copyright

Copyright (c) 2025

5.4 student.h

Go to the documentation of this file.

```
00001 #ifndef STUDENT_H
00002 #define STUDENT_H
00003
00014
00015 #include <vector>
00016 #include <string>
00017 #include <iostream>
00018
00019 class Human{
00020
        protected:
00021
00022
              std::string vardas;
00023
              std::string pavarde;
00024
00025
         public:
00026
          Human() : vardas(""), pavarde("") {}
Human(const std::string& v, const std::string& p) : vardas(v), pavarde(p) {}
00027
00028
00029
00030
00031
          const std::string& getVardas() const { return vardas; }
00032
          const std::string& getPavarde() const { return pavarde; }
00033
          //setters
00034
          void setVardas(const std::string& v)
                                                   { vardas = v; }
00035
          void setPavarde(const std::string& p) { pavarde = p; }
00036
```

```
virtual ~Human() = default;
00038
00039
          virtual void skaiciuotiGalutini(char galutinioBudas) = 0;
00040
00041 };
00042
00043 class student : public Human{
00044
00045
          private:
00046
               std::vector<float> pazvmiai{};
00047
00048
              float egzaminoRezultatas = 0.0f;
00049
               float galutinisM = 0.0f;
00050
               float galutinisV = 0.0f;
00051
          public:
00052
00053
00054
          student() = default;
00055
00056
          //rule of 5-----
00057
          //copy
00058
          student(const student &other) noexcept : Human(other.getVardas(), other.getPavarde())),
      pazymiai(other.pazymiai),
00059
                                             egzaminoRezultatas (other.egzaminoRezultatas).
     galutinisM(other.galutinisM), galutinisV(other.galutinisV){};
00060
          //copy asg
00061
          student& operator=(const student &other) noexcept {
00062
               if(this != &other){
00063
                  setVardas(other.getVardas());
00064
                   setPavarde(other.getPavarde());
                   pazymiai = other.pazymiai;
00065
00066
                   egzaminoRezultatas = other.egzaminoRezultatas;
                   galutinisM = other.galutinisM;
galutinisV = other.galutinisV;
00067
00068
00069
              }
00070
00071
              return *this;
          };
00073
           //move
00074
          student(student &&other) noexcept : Human(std::move(other.vardas), std::move(other.pavarde)),
00075
            pazymiai(std::move(other.pazymiai)),
00076
             egzaminoRezultatas (other.egzaminoRezultatas),
00077
             galutinisM(other.galutinisM),
00078
             galutinisV(other.galutinisV) {}
          //move asg
00079
00080
          student& operator=(student &&other) noexcept {
00081
              if(this != &other) {
00082
                  vardas = std::move(other.vardas);
                   pavarde = std::move(other.pavarde);
pazymiai = std::move(other.pazymiai);
00083
00084
                   egzaminoRezultatas = other.egzaminoRezultatas;
00085
                   galutinisM = other.galutinisM;
galutinisV = other.galutinisV;
00086
00087
00088
00089
               return *this:
00090
00091
00092
00093
          //isvestis, ivestis overloads
00094
          friend std::ostream& operator « (std::ostream& os, const student& studentas);
00095
          friend std::istream& operator » (std::istream& in, student& studentas);
00096
00097
          //parametrizuotas ctor
          student(std::string v, std::string p, std::vector<float> pazymiai, float egz) noexcept : Human(v,
00098
p), pazymiai(std::move(pazymiai)), egzaminoRezultatas(egz) {}
00099
00100
          void setPazymiai(std::vector<float> paz) noexcept{ pazymiai = std::move(paz); }
00101
          void setEgzaminoRezultatas(float egz) noexcept { egzaminoRezultatas = egz; }
00102
          void setGalutinisV(float V) noexcept { galutinisV = V; }
00103
00104
          void setGalutinisM(float M) noexcept { galutinisM = M;
00105
00106
          //getters
          const std::vector<float>& getPazymiai() const { return pazymiai; }
00107
          float getEgzaminoRezultatas() const { return egzaminoRezultatas; } float getGalutinisV() const { return galutinisV; }
00108
00109
00110
          float getGalutinisM() const { return galutinisM;
00111
00112
          //methods
          float skaiciuotiVid() const;
00113
          float skaiciuotiMed() const;
00114
00115
          void skaiciuotiGalutini(char galutinioBudas) override;
00116
          void addPazymys(float pazymys) { pazymiai.push_back(pazymys); }
00117 };
00118
00119 std::ostream& operator«(std::ostream& os, const student& studentas);
00120 std::istream& operator»(std::istream& in, student& studentas);
```

```
00121
00122 #endif
```

5.5 C:/Users/Lenovo/Desktop/2-uzduotis/vector/source/functions.cpp File Reference

this file contains all functions

```
#include "functions.h"
#include <numeric>
#include <algorithm>
#include <iomanip>
#include <fstream>
#include <iostream>
#include <chrono>
#include <sstream>
#include <random>
#include "student.h"
Include dependency graph for functions.cpp:
```

Functions

- void rusiuotiOutput (std::vector < student > &grupe, char rusiavimoBudas, char galutinioBudas)
- void **spausdinimasTerminale** (const std::vector< **student** > &grupe, char galutinioBudas)
- void **spausdinimasFaile** (const std::vector< **student** > &grupe, char galutinioBudas)
- void generuotiFaila (int pKiekis, int studentuKiekis, const std::string &failoPavadinimas)
- void spausdinimas (char spausBudas, char rusiavimoBudas, char galutinioBudas, std::vector< student > &grupe)
- void sortedStudentSpausdinimas (std::string lowGradeFailas, std::string highGradeFailas, std::vector<
 student > &nepazangus, std::vector< student > &normalus, char galutinioBudas)
- void **nuskaitytiGeneruotusFailus** (const std::string &failoPavadinimas, std::vector< student > &grupe, int pKiekis, char galutinioBudas)
- void skirstytiStudentus (std::vector< student > &grupe, std::vector< student > &nepazangus, std::vector< student > &normalus, char galutinioBudas)
- void pirmas (std::vector < student > &grupe, char spausBudas, char rusiavimoBudas, char galutinioBudas, int pKiekis)
- void antras (std::vector < student > &grupe, char spausBudas, char rusiavimoBudas, char galutinioBudas, int pKiekis)
- void **trecias** (std::vector< student > &grupe, const std::vector< std::string > &vardai, const std::vector< std::string > &pavardes, char spausBudas, char rusiavimoBudas, char galutinioBudas, int pKiekis)
- void ketvirtas (std::vector < student > &grupe, int pKiekis, char galutinioBudas)
- void penktas (int pKiekis)
- void sestas (std::vector< student > &grupe, std::vector< student > &testGrupe, std::vector< student > &nepazangus, std::vector< student > &normalus, char galutinioBudas, char rusiavimoBudas, int pKiekis)
- void septintas (char galutinioBudas)

Variables

· double programosLaikas

5.5.1 Detailed Description

this file contains all functions

Author

Narbas

Version

v2.0

Date

2025-05-07

Copyright

Copyright (c) 2025

5.6 C:/Users/Lenovo/Desktop/2-uzduotis/vector/source/main.cpp File Reference

This file handles program's flow.

```
#include <iostream>
#include <vector>
#include <ctime>
#include <limits>
#include <cstdlib>
#include <chrono>
#include <stream>
#include <fstream>
#include <algorithm>
#include "student.h"
#include <iomanip>
#include "utils.h"
Include dependency graph for main.cpp:
```

Functions

• int main ()

Variables

• double programosLaikas = 0.0

5.6.1 Detailed Description

This file handles program's flow.

Author

Narbas

Version

v2.0

Date

2025-05-07

Copyright

Copyright (c) 2025

5.7 C:/Users/Lenovo/Desktop/2-uzduotis/vector/source/student.cpp File Reference

this file contains class methods implementation

```
#include "student.h"
#include <algorithm>
#include <numeric>
#include <iomanip>
```

Include dependency graph for student.cpp:

Functions

- std::ostream & operator<< (std::ostream &os, const student &studentas)
- std::istream & operator>> (std::istream &in, student &studentas)

5.7.1 Detailed Description

this file contains class methods implementation

Author

Narbas

Version

v2.0

Date

2025-05-07

Copyright

Copyright (c) 2025

5.8 C:/Users/Lenovo/Desktop/2-uzduotis/vector/source/utils.h File Reference

this file contains templates

```
#include <iostream>
#include <limits>
#include <string>
```

Include dependency graph for utils.h: This graph shows which files directly or indirectly include this file:

Functions

template < typename T >
 T tikrintilnput (const std::string &prompt, const std::string &klaida)

5.8.1 Detailed Description

this file contains templates

Author

Narbas

Version

v2.0

Date

2025-05-07

Copyright

Copyright (c) 2025

5.9 utils.h

Go to the documentation of this file.

```
00001 #ifndef UTILS_H
00002 #define UTILS_H
00003
00014
00015 #include <iostream>
00016 #include <limits>
00017 #include <string>
00018
00019 template<typename T>
00020 T tikrintiInput(const std::string& prompt, const std::string& klaida) {
00021
          T value;
00022
          while (true) {
00023
              std::cout « prompt;
00024
              std::cin » value;
              if (!std::cin.fail()) {
00025
00026
                  std::cin.ignore(std::numeric_limits<std::streamsize>::max(), '\n');
00027
                  return value;
00028
00029
              std::cerr « klaida « std::endl;
00030
              std::cin.clear();
00031
              \verb|std::cin.ignore(std::numeric_limits < std::streamsize > ::max(), ' \n');|\\
00032
00033 }
00034
00035 #endif
```

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