

## Registras

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## cpp-2024-1

Sukurti universiteto registrą. Registras saugos universiteto informaciją (dabar gali saugoti tik informaciją apie žmones) ir registracijos momentą (kada buvo informacija įvesta į sistemą).

Vėliau duomenys bus saugomi viename objekte, kurio turinį būtų galima išsaugoti failę ir iš kurio būtų galima atkurti registrą.

Iskilo problemu su MIF Gitlab, todel projekto kopija, kuri bus pagrindine atnaujinant yra cia I MIF gitlab bus atnaujinami duomenys, kuomet busiu fakultete, nes nepavyksta ikelti saugyklos neprisijungus prie fakulteto interneto, net nauojus VU VPN

Žmonių duomenų įršai gali būti srautais rašomi bei skaitomi iš failų. Taip pat gaalima vykdymo metu pakeisti ką daro "print" funkcija. Tam kad tai padaryti, reikia viešą lauką prt pakeisti klasės objektu, kuris įgyvendina "interface" ¡
Personprint. Iškviečiant print funkcija yra iskvieciama klasėje esantčio Persionprint∗ objekto print.

Serializacija, vykdoma binariniais srautais.

2 cpp-2024-1

## **Hierarchical Index**

## 2.1 Class Hierarchy

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

erson::Impl	9
ersonprint	17
PersonPrintFullName	18
PersonPrintId	19
ackable	21
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4 Hierarchical Index

## **Class Index**

## 3.1 Class List

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

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6 Class Index

## File Index

## 4.1 File List

Here is a list of all files with brief descriptions:

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## **Class Documentation**

## 5.1 Person::Impl Struct Reference

## **Public Member Functions**

- Impl (std::string Fname, std::string Lname)
- Impl ()
- Impl (const Person &oth)

## **Public Attributes**

- std::string firstName
- std::string lastName

## 5.1.1 Constructor & Destructor Documentation

## **5.1.1.1 Impl()** [1/3]

## Paprastas konstruktorius

#### **Parameters**

Fname	vardas
Lname	Pavarde

```
19 {
20 firstName=Fname;
21 lastName=Lname;
22 }
```

## 5.1.1.2 Impl() [2/3]

```
Person::Impl::Impl ( ) [inline]
```

#### Tuščias konstruktorius

26 {};

## **5.1.1.3** Impl() [3/3]

Konstruktoriaus kopijavimas

#### **Parameters**

```
oth Person is kurio kopijuojama
```

## 5.1.2 Member Data Documentation

### 5.1.2.1 firstName

```
std::string Person::Impl::firstName
```

### 5.1.2.2 lastName

```
std::string Person::Impl::lastName
```

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

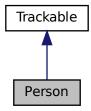
• Person.cpp

5.2 Person Class Reference

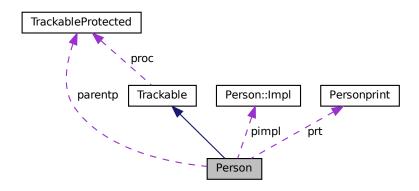
## 5.2 Person Class Reference

#include <Person.h>

Inheritance diagram for Person:



Collaboration diagram for Person:



### Classes

struct Impl

### **Public Member Functions**

- Person (std::string name, std::string lastName)
- Person ()
- std::string getName () const
- · void print () const override
- ∼Person ()
- Person (const Person &other)
- Person & operator= (const Person &other)
- Person & operator= (Person &&other)

## **Static Public Member Functions**

• static void changeName (std::string NewName, Trackable \*obj)

#### **Public Attributes**

• Personprint \* prt = nullptr

### **Static Public Attributes**

• static unsigned long NID

#### **Private Attributes**

- Impl \* pimpl
- TrackableProtected \* parentp

### **Friends**

- std::ostream & operator<< (std::ostream &o, const Person &p)
- std::istream & operator>> (std::istream &i, Person &p)

### **Additional Inherited Members**

### 5.2.1 Constructor & Destructor Documentation

#### 5.2.1.1 Person() [1/3]

## Konstruktorius

#### **Parameters**

name	Žmogaus vardas
lastName	Žmogaus pavardė.

```
41
42     parentp = getProtected();
43     parentp ->Name = name + " " + lastName;
44     prt = new PersonPrintFullName();
45 }
: pimpl(new Impl(name, lastName)) {
```

## 5.2.1.2 Person() [2/3]

### 5.2.1.3 ∼Person()

### 5.2.1.4 Person() [3/3]

## Copy konstruktorius

## **Parameters**

```
other iš ko kopijuojamaa.
```

```
## style="font-color: blue; color: blue;">
## style="font-color: blue; color: b
```

### 5.2.2 Member Function Documentation

## 5.2.2.1 changeName()

```
void Person::changeName (
          std::string NewName,
          Trackable * obj ) [static]
```

Pakeičia vardą į naują.

#### **Parameters**

NewName	naujas vardas.
obj	Sekamas objektas, kurio vardas bus pakeistas.

## 5.2.2.2 getName()

```
std::string Person::getName ( ) const [virtual]
```

Gauti vardą.

Returns

Vardas

Reimplemented from Trackable.

```
78 {
79    return this->pimpl->firstName + " "+ this->pimpl->lastName;
80 }
```

## 5.2.2.3 operator=() [1/2]

Copy assignment

**Parameters** 

```
other Žmogus, iš kurio imami duomenys.
```

#### Returns

```
95
96    return *this = Person(other);
97 }
```

### 5.2.2.4 operator=() [2/2]

```
Person & Person::operator= (
          Person && other )
```

Move assignment

**Parameters** 

other

Returns

Žmogus, iš kurio imami duomenys.

```
{
104
          if(this == &other){
105
              return *this;
106
         parentp->Name = other.parentp->Name;
pimpl->firstName = other.pimpl->firstName;
107
108
109
         pimpl->lastName = other.pimpl->lastName;
          ID = other.ID;
         other.pimpl->firstName = "";
other.pimpl->lastName = "";
111
112
         other.ID = 0;
113
114
115
          return *this;
116 }
```

### 5.2.2.5 print()

```
void Person::print ( ) const [override], [virtual]
```

de facto "to String"

```
Reimplemented from Trackable.
```

## 5.2.3 Friends And Related Function Documentation

### 5.2.3.1 operator <<

```
std::ostream & operator<< (
          std::ostream & o,
          const Person & p ) [friend]</pre>
```

Išvedimo srauto perrašymas.

#### **Parameters**

0	output stautas
р	Žmogus p, kuris paduodamas srautą.

#### Returns

#### srautas o

```
123
       owp.pimpl->firstName;
ow" "wp.pimpl->lastName«" ";
std::ostringstream ss;
124
125
126
       127
128
129
130
131
132
133
           o«"N\n";
134
        }else{
135
           o«"I\n";
136
137
       return o;
138 }
```

### **5.2.3.2** operator>>

```
std::istream & operator>> (  \mbox{std::istream \& $i$,}   \mbox{Person \& $p$ ) [friend] }
```

Ivesties binarinio srauto perrašymas, kada būtų galima objektą perduoti į jį.

#### **Parameters**

i	input sraautas
р	Žmogus p, kurio duomenys imami iš srauto.

#### Returns

### input srautas

```
145
                                                          {
146
        i»p.pimpl->firstName;
147
        i»p.pimpl->lastName;
148
        std::string raw, type;
149
        i»raw;
150
151
        std::istringstream is(raw);
        is»p.parentp->Time;
        i»p.ID;
i»p.type;
152
153
154
        i»type;
155
        if(type == "N") {
156
157
        p.prt = new PersonPrintFullName;
}else{
158
           p.prt = new PersonPrintId;
159
160
        return i;
161 }
```

## 5.2.4 Member Data Documentation

### 5.2.4.1 NID

unsigned long Person::NID [static]

## 5.2.4.2 parentp

TrackableProtected\* Person::parentp [private]

### 5.2.4.3 pimpl

Impl\* Person::pimpl [private]

### 5.2.4.4 prt

Personprint\* Person::prt = nullptr

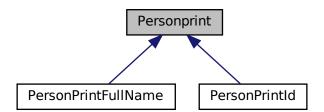
The documentation for this class was generated from the following files:

- Person.h
- Person.cpp

## 5.3 Personprint Class Reference

#include <Personprint.h>

Inheritance diagram for Personprint:



## **Public Member Functions**

• virtual void print (const Person &p)

#### **5.3.1** Member Function Documentation

### 5.3.1.1 print()

```
void Personprint::print ( {\tt const\ Person\ \&\ p\ )} \quad \hbox{[virtual]}
```

De facto interfaceo funkcijos default deklaracija

#### **Parameters**

```
p Zmogus is kurio iskviesta funkcija
```

 $\label{lem:lemented$ 

```
11
12
13 }
```

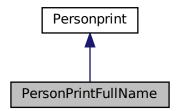
The documentation for this class was generated from the following files:

- · Personprint.h
- Personprint.cpp

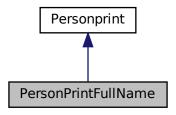
## 5.4 PersonPrintFullName Class Reference

```
#include <PersonPrintFullName.h>
```

Inheritance diagram for PersonPrintFullName:



Collaboration diagram for PersonPrintFullName:



## **Public Member Functions**

· void print (const Person &p) override

## 5.4.1 Member Function Documentation

## 5.4.1.1 print()

Atspauzdinti varda i console

#### **Parameters**

```
p Zmogus is kurio iskviesta funkcija
```

#### Reimplemented from Personprint.

```
12
13
14 std::cout«p.getName()«"\n";
15
16 }
```

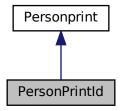
The documentation for this class was generated from the following files:

- · PersonPrintFullName.h
- PersonPrintFullName.cpp

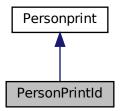
## 5.5 PersonPrintld Class Reference

#include <PersonPrintId.h>

Inheritance diagram for PersonPrintId:



Collaboration diagram for PersonPrintId:



## **Public Member Functions**

• void print (const Person &p) override

## 5.5.1 Member Function Documentation

## 5.5.1.1 print()

```
void PersonPrintId::print (  {\tt const\ Person\ \&\ p\ )} \quad [{\tt override}] \text{, [virtual]}
```

Atspauzdinti ID i konsole

#### **Parameters**

p Zmogus is kurio iskviesta funkcija

Reimplemented from Personprint.

```
13
14
15 std::cout « p.ID « "\n";
16
17 }
```

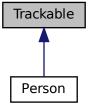
The documentation for this class was generated from the following files:

- PersonPrintld.h
- PersonPrintId.cpp

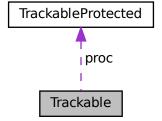
## 5.6 Trackable Class Reference

```
#include <Trackable.h>
```

Inheritance diagram for Trackable:



Collaboration diagram for Trackable:



### **Public Member Functions**

- virtual std::string getName () const
- Trackable (std::string Name)
- Trackable ()
- virtual void print () const
- Trackable (const Trackable &other)
- Trackable & operator= (const Trackable & other)
- Trackable & operator= (Trackable &&other) noexcept
- ∼Trackable ()

## **Public Attributes**

- · unsigned type
- unsigned long ID

#### **Static Public Attributes**

• static unsigned long amount = 0

### **Protected Member Functions**

- const TrackableProtected \* getProtected () const
- TrackableProtected \* getProtected ()

### **Private Attributes**

• TrackableProtected \* proc

## 5.6.1 Constructor & Destructor Documentation

## 5.6.1.1 Trackable() [1/3]

## Paprastas konstruktorius

#### **Parameters**

Name

```
: proc(new TrackableProtected(Name)){
    this->ID = TrackableProtected::NID;
    TrackableProtected::NID++;
    amount++;
}
```

### 5.6.1.2 Trackable() [2/3]

```
Trackable::Trackable ( )
```

#### Tuscias konstruktorius

## 5.6.1.3 Trackable() [3/3]

### Copy construktorius

#### **Parameters**

```
other Trackable, is kurio kopijuojama
```

## 5.6.1.4 ∼Trackable()

```
Trackable::~Trackable ( )

Destruktorius
24 {
25 amount--;
26 }
```

### 5.6.2 Member Function Documentation

## 5.6.2.1 getName()

```
std::string Trackable::getName ( ) const [virtual]
de facto to string
```

#### Returns

## Reimplemented in Person.

### 5.6.2.2 getProtected() [1/2]

```
TrackableProtected * Trackable::getProtected ( ) [protected]
```

## 5.6.2.3 getProtected() [2/2]

```
const TrackableProtected * Trackable::getProtected ( ) const [protected]
```

### Returns

## rodykle i protected klase

```
76 {
77     return proc;
78 }
```

## 5.6.2.4 operator=() [1/2]

Copy assignment

**Parameters** 

other Trackable, is kurio kopijuojama

#### Returns

### nukopijuotas trackable

```
54
55    return *this = Trackable(other);
56 }
```

### 5.6.2.5 operator=() [2/2]

Move assignment

## **Parameters**

other | Trackable is kurio imti

#### Returns

### Moveintas Trackable

```
62
63     if(this == &other) {
64         return *this;
65     }
66     proc->Name = other.proc->Name;
67     ID=other.ID;
68     other.proc->Name = "";
69     other.ID = 0;
70     return *this;
71 }
```

## 5.6.2.6 print()

```
void Trackable::print ( ) const [virtual]
```

vardo rasymas

```
Reimplemented in Person.
```

## 5.6.3 Member Data Documentation

## 5.6.3.1 amount

```
unsigned long Trackable::amount = 0 [static]
```

### 5.6.3.2 ID

```
unsigned long Trackable::ID
```

### 5.6.3.3 proc

```
TrackableProtected* Trackable::proc [private]
```

### 5.6.3.4 type

```
unsigned Trackable::type
```

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

- · Trackable.h
- · Trackable.cpp

## 5.7 TrackableProtected Class Reference

```
#include <TrackableProtected.h>
```

### **Public Member Functions**

- TrackableProtected (const TrackableProtected \*tra)
- TrackableProtected (std::string name)
- TrackableProtected ()

## **Public Attributes**

- std::string Name
- time\_t Time

## **Static Public Attributes**

• static unsigned long NID = 0

## 5.7.1 Constructor & Destructor Documentation

## 5.7.1.1 TrackableProtected() [1/3]

### Copy konstruktorius

#### **Parameters**

```
tra TrackableProtected, kuris kopijuojamas
```

```
12 : Time(tra->Time) {
13 Name = tra->Name;
```

14 }

### 5.7.1.2 TrackableProtected() [2/3]

## Paprastaas konstruktorius

Pavadinimas

# Parameters name

```
20 :Time(time(0)){
21 Name = name;
22
23 }
```

### 5.7.1.3 TrackableProtected() [3/3]

### 5.7.2 Member Data Documentation

### 5.7.2.1 Name

```
std::string TrackableProtected::Name
```

#### 5.7.2.2 NID

```
unsigned long TrackableProtected::NID = 0 [static]
```

## 5.7.2.3 Time

```
time_t TrackableProtected::Time
```

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

- TrackableProtected.h
- TrackableProtected.cpp

## **File Documentation**

# 6.1 cmake-build-debug/CMakeFiles/3.27.0/CompilerIdC/CMake CCompilerId.c File Reference

#### **Macros**

- #define has include(x) 0
- #define COMPILER\_ID ""
- #define STRINGIFY\_HELPER(X) #X
- #define STRINGIFY(X) STRINGIFY\_HELPER(X)
- #define PLATFORM\_ID
- #define ARCHITECTURE\_ID
- #define DEC(n)
- #define HEX(n)
- #define C\_VERSION

### **Functions**

• int main (int argc, char \*argv[])

### **Variables**

```
• char const * info_compiler = "INFO" ":" "compiler[" COMPILER_ID "]"
```

- char const \* info\_platform = "INFO" ":" "platform[" PLATFORM\_ID "]"
- char const \* info arch = "INFO" ":" "arch[" ARCHITECTURE ID "]"
- · const char \* info\_language\_standard\_default
- · const char \* info\_language\_extensions\_default

## 6.1.1 Macro Definition Documentation

# 6.1.1.1 \_\_has\_include

```
#define __has_include(
            x ) 0
```

#### 6.1.1.2 ARCHITECTURE ID

```
#define ARCHITECTURE_ID
```

# 6.1.1.3 C\_VERSION

```
#define C_VERSION
```

# 6.1.1.4 COMPILER\_ID

```
#define COMPILER_ID ""
```

# 6.1.1.5 DEC

```
#define DEC(
          n)
```

# Value:

```
alue:

('0' + (((n) / 10000000)%10)), \
('0' + (((n) / 1000000)%10)), \
('0' + (((n) / 100000)%10)), \
('0' + (((n) / 10000)%10)), \
('0' + (((n) / 1000)%10)), \
('0' + (((n) / 1000)%10)), \
('0' + (((n) / 100)%10)), \
('0' + (((n) / 100)%10)), \
('0' + (((n) / 10)%10)), \
('0' + (((n) / 10)%10)), \
('0' + (((n) % 10))
```

# 6.1.1.6 HEX

```
#define HEX(
```

#### Value:

```
('0' + ((n) %28 & 0xF)), ('0' + ((n) %24 & 0xF)), ('0' + ((n) %24 & 0xF)), ('0' + ((n) %20 & 0xF)), ('0' + ((n) %16 & 0xF)), ('0' + ((n) %12 & 0xF)), ('0' + ((n) %8 & 0xF)), ('0' + ((n) %4 & 0xF))
```

#### 6.1.1.7 PLATFORM\_ID

```
#define PLATFORM_ID
```

#### 6.1.1.8 STRINGIFY

#### 6.1.1.9 STRINGIFY\_HELPER

```
#define STRINGIFY_HELPER( \it X ) #X
```

#### 6.1.2 Function Documentation

#### 6.1.2.1 main()

```
int main (
                   int argc,
                  char * argv[] )
841 {
842 int require = 0;
843 require += info_compiler[argc];
844 require += info_platform[argc];
845 require += info_arch[argc];
846 #ifdef COMPILER_VERSION_MAJOR
847 require += info_version[argc];
848 #endif
849 #ifdef COMPILER_VERSION_INTERNAL
850 require += info_version_internal[argc];
851 #endif
852 #ifdef SIMULATE_ID
853 require += info_simulate[argc];
854 #endif
855 #ifdef SIMULATE_VERSION_MAJOR
856
       require += info_simulate_version[argc];
857 #endif
858 #if defined(__CRAYXT_COMPUTE_LINUX_TARGET)
859
       require += info_cray[argc];
860 #endif
861 require += info_language_standard_default[argc];
862 require += info_language_extensions_default[argc];
       (void) argv;
864 return require;
865 }
```

#### 6.1.3 Variable Documentation

#### 6.1.3.1 info\_arch

```
char const* info_arch = "INFO" ":" "arch[" ARCHITECTURE_ID "]"
```

#### 6.1.3.2 info\_compiler

```
char const* info_compiler = "INFO" ":" "compiler[" COMPILER_ID "]"
```

#### 6.1.3.3 info\_language\_extensions\_default

```
const char* info_language_extensions_default
```

#### Initial value:

```
= "INFO" ":" "extensions_default[" "OFF"
```

#### 6.1.3.4 info\_language\_standard\_default

```
const char* info_language_standard_default
```

#### Initial value:

```
"INFO" ":" "standard_default[" C_VERSION "]"
```

#### 6.1.3.5 info\_platform

```
char const* info_platform = "INFO" ":" "platform[" PLATFORM_ID "]"
```

# 6.2 cmake-build-debug/CMakeFiles/3.27.0/CompilerIdCXX/CMake ← **CXXCompilerId.cpp** File Reference

#### **Macros**

- #define \_\_has\_include(x) 0
- #define COMPILER ID ""
- #define STRINGIFY\_HELPER(X) #X
- #define STRINGIFY(X) STRINGIFY\_HELPER(X)
- #define PLATFORM\_ID
- #define ARCHITECTURE ID
- #define DEC(n)
- #define HEX(n)
- #define CXX\_STD \_\_cplusplus

# **Functions**

• int main (int argc, char \*argv[])

#### **Variables**

```
    char const * info_compiler = "INFO" ":" "compiler[" COMPILER_ID "]"
    char const * info_platform = "INFO" ":" "platform[" PLATFORM ID "]"
```

- char const \* info\_arch = "INFO" ":" "arch[" ARCHITECTURE\_ID "]"
- const char \* info\_language\_standard\_default
- const char \* info\_language\_extensions\_default

# 6.2.1 Macro Definition Documentation

# 6.2.1.1 \_\_has\_include

```
#define __has_include( x ) 0
```

# 6.2.1.2 ARCHITECTURE\_ID

#define ARCHITECTURE\_ID

# 6.2.1.3 COMPILER\_ID

#define COMPILER\_ID ""

# 6.2.1.4 CXX\_STD

#define CXX\_STD \_\_cplusplus

# 6.2.1.5 DEC

# 6.2.1.6 HEX

# 6.2.1.7 PLATFORM\_ID

```
#define PLATFORM_ID
```

#### 6.2.1.8 STRINGIFY

# 6.2.1.9 STRINGIFY\_HELPER

```
#define STRINGIFY_HELPER( \it X ) #X
```

# 6.2.2 Function Documentation

#### 6.2.2.1 main()

```
int main (
                   int argc,
                  char * argv[] )
831 {
832 int require = 0;
833 require += info_compiler[argc];
834 require += info_platform[argc];
835 require += info_arch[argc];
836 #ifdef COMPILER_VERSION_MAJOR
837
       require += info_version[argc];
838 #endif
839 #ifdef COMPILER_VERSION_INTERNAL
840
       require += info_version_internal[argc];
841 #endif
842 #ifdef SIMULATE_ID
843 require += info_simulate[argc];
844 #endif
845 #ifdef SIMULATE_VERSION_MAJOR
846 require += info_simulate_version[argc];
847 #endif
848 #if defined(__CRAYXT_COMPUTE_LINUX_TARGET)
849
       require += info_cray[argc];
850 #endif
851 require += info_language_standard_default[argc];
852 require += info_language_extensions_default[argc];
853 (void)argv;
854 return require;
855 }
```

#### 6.2.3 Variable Documentation

#### 6.2.3.1 info\_arch

```
char const* info_arch = "INFO" ":" "arch[" ARCHITECTURE_ID "]"
```

# 6.2.3.2 info\_compiler

```
char const* info_compiler = "INFO" ":" "compiler[" COMPILER_ID "]"
```

# 6.2.3.3 info\_language\_extensions\_default

```
\verb|const| char* info_language_extensions_default|
```

#### Initial value:

```
= "INFO" ":" "extensions_default["
   "OFF"
"]"
```

#### 6.2.3.4 info\_language\_standard\_default

```
const char* info_language_standard_default
```

#### Initial value:

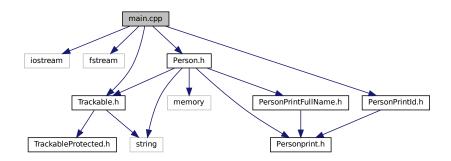
```
= "INFO" ":" "standard_default["
"98"
"]"
```

# 6.2.3.5 info\_platform

```
char const* info_platform = "INFO" ":" "platform[" PLATFORM_ID "]"
```

# 6.3 main.cpp File Reference

```
#include <iostream>
#include <fstream>
#include "Trackable.h"
#include "Person.h"
#include "PersonPrintId.h"
Include dependency graph for main.cpp:
```



# **Functions**

- void printAmount ()
- int main ()

# 6.3.1 Function Documentation

#### 6.3.1.1 main()

```
int main ( )
```

```
Pagrindinė funkcija skirta pademonstruoti reigistro pagrindinį veikimą.
```

```
Trackable* test1 = new Trackable("Netipizuotas irasas");
16
       std::ofstream out("TEST.abc");
18
       test1->print();
       printAmount();
19
       Trackable* test2 = new Person("vardas", "pavarde");
2.0
21
       test2->print();
       printAmount();
22
       //Trackable *Entries[7];
Trackable ** Ent;
23
24
25
       Ent = new Trackable*[7];
26
       for (int i = 0; i < 3; ++i) {
           std::string name;
27
           std::cin » name;
Ent[i] = new Trackable(name);
28
30
           //Entries[i] = new Trackable(name);
32
       for (int i = 0; i < 4; ++i) {
           std::string f, 1;
std::cin » f » 1;
Ent[3 + i] = new Person(f, 1);
3.3
34
35
            //Entries[3 + i] = new Person(f, 1);
37
38
       /*for(auto Entry : Entries) {
39 Entry->print();
40 } */
       for(int i = 0; i < 7; ++i) {
    Ent[i]->print();
41
42
43
44
             Person::changeName("Vardenis", Entries[6]);
4.5
           Person::changeName("Vardenis", Ent[6]);
46
47
       }catch(std::bad_cast) {
49
          std::cout«"Klaida keiciant 6\n";
50
51
             Person::changeName("Vardenis", Entries[0]);
52
           Person::changeName("Vardenis", Ent[0]);
53
54
       }catch(std::bad_cast) {
           std::cout«"Klaida keiciant 0\n";
56
57
       Person *cast = dynamic_cast<Person*>(Ent[6]);
58
       out«*cast;
59
       out.close();
60
      /* for(auto Entry : Entries) {
61 Entry->print();
63
       for (int i = 0; i < 7; i++) {
           Ent[i]->print();
64
65
       printAmount();
66
       //delete Entries[6];
68
       delete Ent[6];
69
       printAmount();
70
       Person *p = new Person("A", "B");
71
       p->print();
       p->prt=new PersonPrintId();
72
73
       p->print();
74
75
       std::ifstream in("TEST.abc");
76
       Person per;
77
78
       in»per;
79
       per.print();
81
       return 0;
82 }
```

#### 6.3.1.2 printAmount()

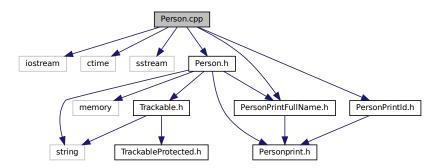
```
void printAmount ( )
```

Funkcija atspaauzdinti registre esanciu elementu kieki.

```
9  {
10    std::cout«Trackable::amount«std::endl;
11 }
```

# 6.4 Person.cpp File Reference

```
#include <iostream>
#include <ctime>
#include <sstream>
#include "Person.h"
#include "PersonPrintFullName.h"
#include "PersonPrintId.h"
Include dependency graph for Person.cpp:
```



#### **Classes**

struct Person::Impl

#### **Functions**

- std::ostream & operator<< (std::ostream &o, const Person &p)
- std::istream & operator>> (std::istream &i, Person &p)

# 6.4.1 Function Documentation

# 6.4.1.1 operator<<()

Išvedimo srauto perrašymas.

#### **Parameters**

0	output stautas
р	Žmogus p, kuris paduodamas srautą.

#### Returns

#### srautas o

```
123
              owp.pimpl->firstName;
ow" "wp.pimpl->lastName«" ";
std::ostringstream ss;
124
125
              std::ostringstream ss;
ss@p.parentp->Time;
owss.str() «" ";
owp.ID«" ";
owp.type«" ";
Personprint* pri = dynamic_cast<PersonPrintFullName*>(p.prt);
if(pri) {
    ow"N\n":
126
127
128
129
130
131
132
133
                      o«"N\n";
134
               }else{
135
                      o«"I\n";
136
137
               return o;
138 }
```

#### 6.4.1.2 operator>>()

```
std::istream & operator>> (  std::istream \& i, \\  Person \& p )
```

Ivesties binarinio srauto perrašymas, kada būtų galima objektą perduoti į jį.

#### **Parameters**

i	input sraautas
р	Žmogus p, kurio duomenys imami iš srauto.

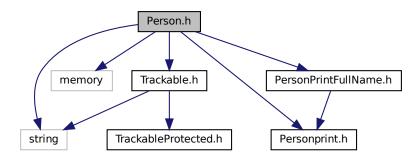
#### Returns

#### input srautas

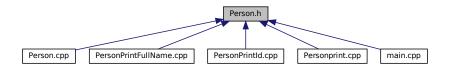
```
145
                                                          {
146
        i»p.pimpl->firstName;
147
        i»p.pimpl->lastName;
148
        std::string raw, type;
149
        i»raw;
150
151
        std::istringstream is(raw);
        is»p.parentp->Time;
        i»p.ID;
i»p.type;
152
153
154
        i»type;
155
        if (type == "N") {
156
157
            p.prt = new PersonPrintFullName;
        }else{
158
           p.prt = new PersonPrintId;
159
160
        return i;
161 }
```

# 6.5 Person.h File Reference

```
#include <string>
#include <memory>
#include "Trackable.h"
#include "Personprint.h"
#include "PersonPrintFullName.h"
Include dependency graph for Person.h:
```



This graph shows which files directly or indirectly include this file:



# **Classes**

class Person

# 6.6 Person.h

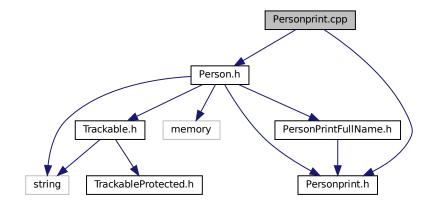
#### Go to the documentation of this file.

```
1 //
2 // Created by arnas on 2/12/24.
3 //
4
5 #ifndef CPP_2024_1_PERSON_H
6 #define CPP_2024_1_PERSON_H
7
8
9 #include <string>
10 #include <memory>
11
12
13
14 #include "Trackable.h"
```

```
15 #include "Personprint.h"
16 class Personprint;
17 #include "PersonPrintFullName.h"
18 class PersonPrintFullName;
19
20 class Person: public Trackable {
21 private:
22
       class Impl;
23
       Impl *pimpl;
2.4
       TrackableProtected *parentp;
25 public:
      Personprint *prt = nullptr;
static unsigned long NID;
26
28
       Person(std::string name, std::string lastName);
29
       Person();
30
       std::string getName() const;
31
       void print() const override;
       ~Person();
32
33
       Person(const Person& other);
       Person& operator=(const Person& other);
35
       Person& operator=(Person&& other);
36
       static void changeName(std::string NewName, Trackable *obj);
37
       friend std::ostream & operator « (std::ostream &o, const Person &p);
38
       friend std::istream & operator » (std::istream &i, Person &p);
39 };
40
41
42 #endif //CPP_2024_1_PERSON_H
```

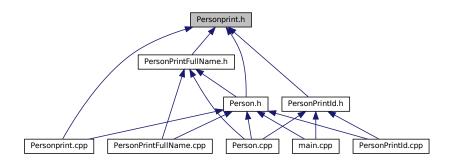
# 6.7 Personprint.cpp File Reference

```
#include "Personprint.h"
#include "Person.h"
Include dependency graph for Personprint.cpp:
```



# 6.8 Personprint.h File Reference

This graph shows which files directly or indirectly include this file:



#### Classes

· class Personprint

# 6.9 Personprint.h

#### Go to the documentation of this file.

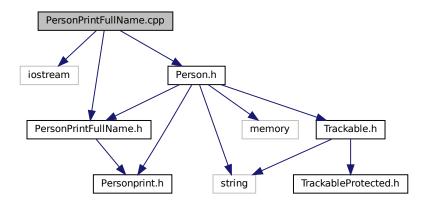
```
1 //
2 // Created by arnas on 4/28/24.
3 //
4
5 #ifndef CPP_2024_1_PERSONPRINT_H
6 #define CPP_2024_1_PERSONPRINT_H
7
8
9 class Person;
10
11 class Personprint {//Interface
12
13 public:
14     virtual void print(const Person &p);
15 };
16
17
18 #endif //CPP_2024_1_PERSONPRINT_H
```

# 6.10 PersonPrintFullName.cpp File Reference

```
#include <iostream>
#include "PersonPrintFullName.h"
```

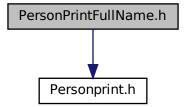
#include "Person.h"

Include dependency graph for PersonPrintFullName.cpp:

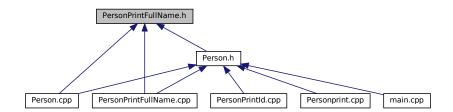


# 6.11 PersonPrintFullName.h File Reference

#include "Personprint.h"
Include dependency graph for PersonPrintFullName.h:



This graph shows which files directly or indirectly include this file:



# Classes

• class PersonPrintFullName

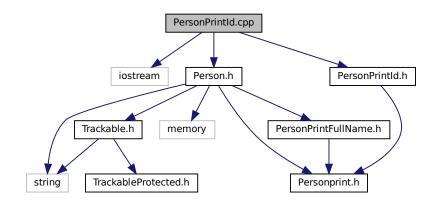
# 6.12 PersonPrintFullName.h

#### Go to the documentation of this file.

```
1 //
2 // Created by arnas on 4/28/24.
3 //
4
5 #ifndef CPP_2024_1_PERSONPRINTFULLNAME_H
6 #define CPP_2024_1_PERSONPRINTFULLNAME_H
7
8
9
10 #include "Personprint.h"
11
12 class PersonPrintFullName : public Personprint{
13 public:
14     void print(const Person &p) override;
15
16 };
17
18
19 #endif //CPP_2024_1_PERSONPRINTFULLNAME_H
```

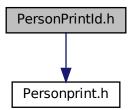
# 6.13 PersonPrintld.cpp File Reference

```
#include <iostream>
#include "PersonPrintId.h"
#include "Person.h"
Include dependency graph for PersonPrintId.cpp:
```

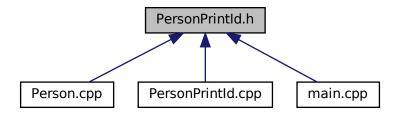


# 6.14 PersonPrintld.h File Reference

#include "Personprint.h"
Include dependency graph for PersonPrintId.h:



This graph shows which files directly or indirectly include this file:



# **Classes**

· class PersonPrintId

# 6.15 PersonPrintld.h

# Go to the documentation of this file.

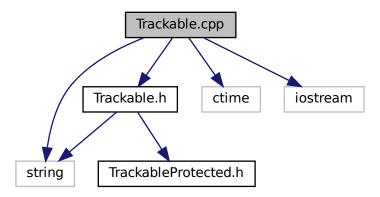
```
2 // Created by arnas on 4/28/24.
3 //
4 5 #ifndef CPP_2024_1_PERSONPRINTID_H
6 #define CPP_2024_1_PERSONPRINTID_H
7 8
9 #include "Personprint.h"
10
11 class PersonPrintId : public Personprint{
12 public:
13 void print(const Person &p) override;
14
15 };
16
17
18 #endif //CPP_2024_1_PERSONPRINTID_H
```

# 6.16 README.md File Reference

# 6.17 Trackable.cpp File Reference

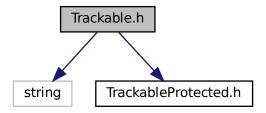
#include "Trackable.h"
#include <string>
#include <ctime>
#include <iostream>

Include dependency graph for Trackable.cpp:



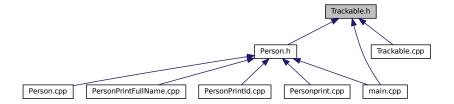
# 6.18 Trackable.h File Reference

#include <string>
#include "TrackableProtected.h"
Include dependency graph for Trackable.h:



6.19 Trackable.h 47

This graph shows which files directly or indirectly include this file:



#### **Classes**

· class Trackable

# 6.19 Trackable.h

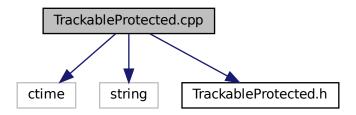
# Go to the documentation of this file.

```
// Created by arnas on 2/25/24.
3 //
5 #ifndef CPP_2024_1_TRACKABLE_H
6 #define CPP_2024_1_TRACKABLE_H
7 #include <string>
8 #include "TrackableProtected.h"
10 class Trackable {
11 private:
        TrackableProtected *proc;
13 protected:
        const TrackableProtected* getProtected() const;
        TrackableProtected* getProtected();
15
16 public:
        virtual std::string getName() const;
18
        unsigned type;
19
        static unsigned long amount;
20
        unsigned long ID;
2.1
        Trackable(std::string Name);
22
        Trackable();
        Trackable(),
virtual void print() const;
Trackable(const Trackable@ other);
Trackable@ operator=(const Trackable@ other);
23
25
26
        Trackable& operator=(Trackable&& other) noexcept;
2.7
         ~Trackable();
28 };
31 #endif //CPP_2024_1_TRACKABLE_H
```

# 6.20 TrackableProtected.cpp File Reference

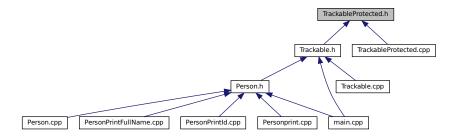
```
#include <ctime>
#include <string>
```

#include "TrackableProtected.h"
Include dependency graph for TrackableProtected.cpp:



# 6.21 TrackableProtected.h File Reference

This graph shows which files directly or indirectly include this file:



#### **Classes**

· class TrackableProtected

# 6.22 TrackableProtected.h

#### Go to the documentation of this file.

```
1 //
2 // Created by arnas on 3/24/24.
3 //
4
5 #ifndef CPP_2024_1_TRACKABLEPROTECTED_H
6 #define CPP_2024_1_TRACKABLEPROTECTED_H
7
8
9 class TrackableProtected {
10 public:
11    static unsigned long NID;
12    std::string Name;
13    time_t Time;
14    TrackableProtected(const TrackableProtected *tra);
15    TrackableProtected(std::string name);
16    TrackableProtected();
17    };
18
19
20 #endif //CPP_2024_1_TRACKABLEPROTECTED_H
```

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