

ALG-projekt 1 BAI0033

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Chapter 1

Class Index

1.1 Class List

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

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Point	9

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

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build/CMakeFiles/3.26.3/CompilerIdCXX/ CMakeCXXCompilerId.cpp	17
build/CMakeFiles/project.dir/ main.cpp.o.d	24
CMakeFiles/3.26.3/CompilerIdC/ CMakeCCompilerId.c	14
CMakeFiles/3.26.3/CompilerIdCXX/ CMakeCXXCompilerId.cpp	21
CMakeFiles/project.dir/ main.cpp.o.d	24
src/ Component.cpp	25
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src/headers/ Component.h	25
src/headers/ Graph.h	25
src/headers/ Point.h	26

Chapter 3

Class Documentation

3.1 Component Class Reference

```
#include <Component.h>
```

Public Member Functions

- [Component](#) ()
- [~Component](#) ()
- void [getExcentricities](#) ()
- int [getDiameter](#) ()
- int [getRadius](#) ()

Public Attributes

- std::vector< [Point](#) * > [points](#)

3.1.1 Detailed Description

Třída komponenta

3.1.2 Constructor & Destructor Documentation

3.1.2.1 Component()

```
Component::Component ( )
```

Konstruktor

3.1.2.2 ~Component()

```
Component::~~Component ( )
```

Destruktor

3.1.3 Member Function Documentation

3.1.3.1 getDiameter()

```
int Component::getDiameter ( )
```

Získání průměru Vybere největší excentricitu

3.1.3.2 getExcentricities()

```
void Component::getExcentricities ( )
```

Získání excentricit

3.1.3.3 getRadius()

```
int Component::getRadius ( )
```

Získání poloměru Vybere nejmenší excentricitu

3.1.4 Member Data Documentation

3.1.4.1 points

```
std::vector<Point *> Component::points
```

vektor bodů, které komponenta obsahuje

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

- src/headers/[Component.h](#)
- src/[Component.cpp](#)

3.2 Graph Class Reference

```
#include <Graph.h>
```

Public Member Functions

- [Graph](#) (std::string fileName)
- [~Graph](#) ()
- void [findComponents](#) ()
- int [where](#) (int a)
- [Component](#) * [biggestComponent](#) ()

Public Attributes

- std::vector< [Point](#) * > [points](#)
- std::vector< [Component](#) * > [components](#)

3.2.1 Detailed Description

Třída graf

3.2.2 Constructor & Destructor Documentation

3.2.2.1 Graph()

```
Graph::Graph (  
    std::string fileName )
```

Konstruktor s načítáním grafu

Parameters

<i>fileName</i>	soubor s grafem
-----------------	-----------------

3.2.2.2 ~Graph()

```
Graph::~~Graph ( )
```

Destruktor Smaže všechny pointy

3.2.3 Member Function Documentation

3.2.3.1 biggestComponent()

```
Component * Graph::biggestComponent ( )
```

Nalezení největší komponenty

3.2.3.2 findComponents()

```
void Graph::findComponents ( )
```

Nalezení komponenty

3.2.3.3 where()

```
int Graph::where (
    int a )
```

Nalezení indexu

Parameters

<i>a</i>	vrchol, kterému chceme nalézt index
----------	-------------------------------------

3.2.4 Member Data Documentation

3.2.4.1 components

```
std::vector<Component *> Graph::components
```

vektor komponent nacházejících se v grafu

3.2.4.2 points

```
std::vector<Point *> Graph::points
```

vektor bodů nacházejících se v grafu

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

- src/headers/[Graph.h](#)
- src/[Graph.cpp](#)

3.3 Point Class Reference

```
#include <Point.h>
```

Public Member Functions

- [Point](#) (int [value](#))
- [~Point](#) ()

Public Attributes

- int [value](#)
- std::vector< [Point](#) * > [neighbors](#)
- bool [checked](#) = false
- int [excentricity](#) = 0
- int [distance](#) = 0

3.3.1 Detailed Description

Třída [Point](#)

3.3.2 Constructor & Destructor Documentation

3.3.2.1 Point()

```
Point::Point (  
    int value )
```

vzdálenost bodu od počátečního bodu

Konstruktor

Parameters

<i>value</i>	nastavení hodnoty bodu
--------------	------------------------

3.3.2.2 ~Point()

```
Point::~~Point ( )
```

Destruktor

3.3.3 Member Data Documentation

3.3.3.1 checked

```
bool Point::checked = false
```

kontrola, jestli byl bod projet

3.3.3.2 distance

```
int Point::distance = 0
```

3.3.3.3 excentricity

```
int Point::excentricity = 0
```

excentricita bodu

3.3.3.4 neighbors

```
std::vector<Point *> Point::neighbors
```

vektor sousedů bodu

3.3.3.5 value

```
int Point::value
```

hodnota bodu

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

- [src/headers/Point.h](#)
- [src/Point.cpp](#)

Chapter 4

File Documentation

4.1 build/CMakeFiles/3.26.3/CompilerIdC/CMakeCCompilerId.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`

4.1.1 Macro Definition Documentation

4.1.1.1 __has_include

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

4.1.1.2 ARCHITECTURE_ID

```
#define ARCHITECTURE_ID
```

4.1.1.3 C_VERSION

```
#define C_VERSION
```

4.1.1.4 COMPILER_ID

```
#define COMPILER_ID ""
```

4.1.1.5 DEC

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

Value:

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

4.1.1.6 HEX

```
#define HEX(  
    n )
```

Value:

```
('0' + ((n) >> 28 & 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)), \  
( '0' + ((n) & 0xF))
```

4.1.1.7 PLATFORM_ID

```
#define PLATFORM_ID
```

4.1.1.8 STRINGIFY

```
#define STRINGIFY(  
    X ) STRINGIFY_HELPER(X)
```

4.1.1.9 STRINGIFY_HELPER

```
#define STRINGIFY_HELPER(  
    X ) #X
```

4.1.2 Function Documentation

4.1.2.1 main()

```
int main (  
    int argc,  
    char * argv[] )
```

4.1.3 Variable Documentation

4.1.3.1 info_arch

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

4.1.3.2 info_compiler

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

4.1.3.3 info_language_extensions_default

```
const char* info_language_extensions_default
```

Initial value:

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

```
    "OFF"
"]"
```

4.1.3.4 info_language_standard_default

```
const char* info_language_standard_default
```

Initial value:

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

4.1.3.5 info_platform

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

4.2 CMakeFiles/3.26.3/CompilerIdC/CMakeCCompilerId.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](#)

4.2.1 Macro Definition Documentation

4.2.1.1 __has_include

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

4.2.1.2 ARCHITECTURE_ID

```
#define ARCHITECTURE_ID
```

4.2.1.3 C_VERSION

```
#define C_VERSION
```

4.2.1.4 COMPILER_ID

```
#define COMPILER_ID ""
```

4.2.1.5 DEC

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

Value:

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

4.2.1.6 HEX

```
#define HEX(  
    n )
```

Value:

```
('0' + ((n)>>28 & 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)), \  
( '0' + ((n)    & 0xF))
```

4.2.1.7 PLATFORM_ID

```
#define PLATFORM_ID
```

4.2.1.8 STRINGIFY

```
#define STRINGIFY(  
    X ) STRINGIFY\_HELPER(X)
```

4.2.1.9 STRINGIFY_HELPER

```
#define STRINGIFY_HELPER(  
    X ) #X
```

4.2.2 Function Documentation

4.2.2.1 main()

```
int main (  
    int argc,  
    char * argv[] )
```

4.2.3 Variable Documentation

4.2.3.1 info_arch

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

4.2.3.2 info_compiler

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

4.2.3.3 info_language_extensions_default

```
const char* info_language_extensions_default
```

Initial value:

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

```
"OFF"
```

```
"]"
```

4.2.3.4 info_language_standard_default

```
const char* info_language_standard_default
```

Initial value:

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

4.2.3.5 info_platform

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

4.3 build/CMakeFiles/3.26.3/CompilerIdCXX/CMakeCXXCompilerId.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](#)

4.3.1 Macro Definition Documentation

4.3.1.1 __has_include

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

4.3.1.2 ARCHITECTURE_ID

```
#define ARCHITECTURE_ID
```

4.3.1.3 COMPILER_ID

```
#define COMPILER_ID ""
```

4.3.1.4 CXX_STD

```
#define CXX_STD __cplusplus
```


4.3.1.5 DEC

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

Value:

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

4.3.1.6 HEX

```
#define HEX(
    n )
```

Value:

```
('0' + ((n) >> 28 & 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)), \
('0' + ((n) & 0xF))
```

4.3.1.7 PLATFORM_ID

```
#define PLATFORM_ID
```

4.3.1.8 STRINGIFY

```
#define STRINGIFY(
    X ) STRINGIFY_HELPER(X)
```

4.3.1.9 STRINGIFY_HELPER

```
#define STRINGIFY_HELPER(
    X ) #X
```

4.3.2 Function Documentation

4.3.2.1 main()

```
int main (
    int argc,
    char * argv[] )
```

4.3.3 Variable Documentation

4.3.3.1 info_arch

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

4.3.3.2 info_compiler

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

4.3.3.3 info_language_extensions_default

```
const char* info_language_extensions_default
```

Initial value:

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

```
    "OFF"
"]"
```

4.3.3.4 info_language_standard_default

```
const char* info_language_standard_default
```

Initial value:

```
= "INFO" ":" "standard_default["
```

```
    "98"
"]"
```

4.3.3.5 info_platform

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

4.4 CMakeFiles/3.26.3/CompilerIdCXX/CMakeCXXCompilerId.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`

4.4.1 Macro Definition Documentation

4.4.1.1 __has_include

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

4.4.1.2 ARCHITECTURE_ID

```
#define ARCHITECTURE_ID
```

4.4.1.3 COMPILER_ID

```
#define COMPILER_ID ""
```

4.4.1.4 CXX_STD

```
#define CXX_STD __cplusplus
```

4.4.1.5 DEC

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

Value:

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

4.4.1.6 HEX

```
#define HEX(  
    n )
```

Value:

```
('0' + ((n) >> 28 & 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)), \
('0' + ((n) & 0xF))
```

4.4.1.7 PLATFORM_ID

```
#define PLATFORM_ID
```

4.4.1.8 STRINGIFY

```
#define STRINGIFY(  
    X ) STRINGIFY_HELPER(X)
```

4.4.1.9 STRINGIFY_HELPER

```
#define STRINGIFY_HELPER(  
    X ) #X
```

4.4.2 Function Documentation

4.4.2.1 main()

```
int main (  
    int argc,  
    char * argv[] )
```

4.4.3 Variable Documentation

4.4.3.1 info_arch

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

4.4.3.2 info_compiler

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

4.4.3.3 info_language_extensions_default

```
const char* info_language_extensions_default
```

Initial value:

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

```
    "OFF"  
    "]"
```

4.4.3.4 info_language_standard_default

```
const char* info_language_standard_default
```

Initial value:

```
= "INFO" ":" "standard_default["
```

```
    "98"  
"]"
```

4.4.3.5 info_platform

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

4.5 build/CMakeFiles/project.dir/main.cpp.o.d File Reference

4.6 CMakeFiles/project.dir/main.cpp.o.d File Reference

4.7 main.cpp File Reference

```
#include "src/headers/Graph.h"
```

Functions

- int [main](#) (int argc, char **argv)

4.7.1 Function Documentation

4.7.1.1 main()

```
int main (  
    int argc,  
    char ** argv )
```

4.8 src/Component.cpp File Reference

```
#include "Component.h"
```

4.9 src/Graph.cpp File Reference

```
#include "Graph.h"
```

4.10 src/headers/Component.h File Reference

```
#include "Point.h"
```

Classes

- class [Component](#)

4.11 Component.h

[Go to the documentation of this file.](#)

```
00001 #include "Point.h"
00002
00006 class Component
00007 {
00008 public:
00009     std::vector<Point *> points;
00011     Component();
00012     ~Component();
00013
00014     void getExcentricities();
00015     int  getDiameter();
00016     int  getRadius();
00017 };
```

4.12 src/headers/Graph.h File Reference

```
#include "Component.h"
```

Classes

- class [Graph](#)

4.13 Graph.h

[Go to the documentation of this file.](#)

```
00001 #include "Component.h"
00005 class Graph
00006 {
00007 public:
00008     std::vector<Point *> points;
00009     std::vector<Component *> components;
00011     Graph(std::string fileName);
00012     ~Graph();
00013
00014     void findComponents();
00015     int where(int a);
00016     Component *biggestComponent();
00017 };
```

4.14 src/headers/Point.h File Reference

```
#include <queue>
#include <vector>
#include <string>
#include <fstream>
#include <iostream>
#include <algorithm>
```

Classes

- class [Point](#)

4.15 Point.h

[Go to the documentation of this file.](#)

```
00001 #include <queue>
00002 #include <vector>
00003 #include <string>
00004 #include <fstream>
00005 #include <iostream>
00006 #include <algorithm>
00010 class Point
00011 {
00012 public:
00013     int value;
00014     std::vector<Point *> neighbors;
00015     bool checked = false;
00016     int excentricity = 0;
00017     // jak daleko je bod, který je od tohoto bodu nejdál tou nejefektivnější trasou
00018
00019     int distance = 0;
00021     Point(int value);
00022     ~Point();
00023 };
```

4.16 src/Point.cpp File Reference

```
#include "Point.h"
```


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