Symulator Liszaja wykonał Kacper Adamczyk

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Chapter 1

Namespace Index

1.1 Namespace List

Here is a list of all namespaces with brief descriptions:

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Hierarchical Index

2.1 Class Hierarchy

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

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dsp::GraphicCell . . . 26
dsp::Object . . . 28
  dsp::Arrows . . . 11
  dsp::Button . . . 16
  dsp::Caption . . . 20
  dsp::Value . . . 51
Point . . . 32
StartUpParams . . . 50
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Chapter 3

Class Index

3.1 Class List

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

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dsp::Button 16
dsp::Caption 20
Cell 22
dsp::GraphicCell 26
dsp::Object 28
Point 32
dsp::Program 33
dsp::Settings 43
StartUpParams 50
dsp::Value 51
dsp::Window 57

Chapter 4

File Index

4.1 File List

Here is a list of all files with brief descriptions:

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Chapter 5

Namespace Documentation

5.1 dsp Namespace Reference

Classes

- class Arrows
- class Button
- class Caption
- struct GraphicCell
- class Object
- class Program
- class Settings
- class Value
- class Window

Enumerations

- enum ButtonType { TEXT_BUTTON, NEXT_BUTTON, REFRESH_BUTTON }
- enum Action { RESUMED = 0, PAUSED = 1, STEPPED = 2 }

Functions

- void onButtonRefreshClick (void *_this)
- void onButtonPauseClick (void *_this)
- void onButtonNextClick (void *_this)
- void onButtonStartClick (void *)

5.1.1 Enumeration Type Documentation

5.1.1.1 Action

`enum dsp::Action`

Stany pracy aplikacji

Enumerator

RESUMED	Wznowiona
PAUSED	Pauza
STEPPED	Praca krokowa

5.1.1.2 ButtonType

```
enum dsp::ButtonType
```

Typy przyciskow

Enumerator

TEXT_BUTTON	Przycisk z tekstem
NEXT_BUTTON	Przycisk next
REFRESH_BUTTON	Przycisk refresh

5.1.2 Function Documentation

5.1.2.1 onButtonNextClick()

```
void dsp::onButtonNextClick (
            void * _this )
```

Funkcja obslugi przycisku ButtonNext

5.1.2.2 onButtonPauseClick()

```
void dsp::onButtonPauseClick (
            void * _this )
```

Funkcja obslugi przycisku ButtonPause

5.1.2.3 onButtonRefreshClick()

```
void dsp::onButtonRefreshClick (
            void * _this )
```

Funkcja obslugi przycisku ButtonRefresh

5.1.2.4 onButtonStartClick()

```
void dsp::onButtonStartClick (
            void * _this )
```

Funkcja obslugi przycisku ButtonStart

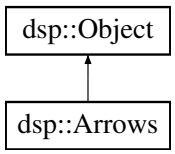
Chapter 6

Class Documentation

6.1 dsp::Arrows Class Reference

`#include <arrows.h>`

Inheritance diagram for dsp::Arrows:



Public Member Functions

- Arrows (Object *, bool, bool, unsigned int *=nullptr, unsigned int=0, unsigned int=UINT_MAX, int=1, float=1, float=1, float=0.1)
- void Assign ()
- sf::Vector2f getSize ()
- void AddToList ()
- void AddToClickableList ()
- sf::Vector2f getEndPoint () const
- void Draw ()
- bool isClicked (sf::Vector2f)
- void setMin (unsigned int)
- void setMax (unsigned int)
- void AssignValue (unsigned int *)

Static Public Member Functions

- static sf::Texture * getTexture ()

Private Attributes

- sf::Sprite left_
- sf::Sprite right_
- float scale_
- int step_
- float fractionR_
- float fractionL_
- unsigned int * value_
- unsigned int min_
- unsigned int max_

Static Private Attributes

- static sf::Texture texture_

Additional Inherited Members

6.1.1 Constructor & Destructor Documentation

6.1.1.1 Arrows()

```
dsp::Arrows::Arrows (
            Object * parent,
            bool add_to_list,
            bool is_clickable,
            unsigned int * value = nullptr,
            unsigned int min = 0,
            unsigned int max = UINT_MAX,
            int step = 1,
            float fractionR = 1,
            float fractionL = 1,
            float scale = 0.1 )
```

Konstruktor

6.1.2 Member Function Documentation

6.1.2.1 AddToClickableList()

```
void dsp::Arrows::AddToClickableList ( )
```

Dodaj do listy obiektow ktore moga byc nacisniete

6.1.2.2 AddToList()

```
void dsp::Arrows::AddToList ( )  [virtual]
```

Dodaj do listy objektow

Implements dsp::Object.

6.1.2.3 Assign()

```
void dsp::Arrows::Assign ( )  [virtual]
```

Ustawienie sprite'ow na odpowiednich pozycjach

Implements dsp::Object.

6.1.2.4 AssignValue()

```
void dsp::Arrows::AssignValue (
            unsigned int * value )
```

Ustawia adres modyfikowanej zmiennej

6.1.2.5 Draw()

```
void dsp::Arrows::Draw ( )  [virtual]
```

Wyswietl sprite'y

Implements dsp::Object.

6.1.2.6 getEndPoint()

```
sf::Vector2f dsp::Arrows::getEndPoint ( ) const  [virtual]
```

Zwraca punkt konca sprite'a prawej strzalki

Implements dsp::Object.

6.1.2.7 getSize()

```
sf::Vector2f dsp::Arrows::getSize ( )  [virtual]
```

Zwraca rozmiar sprite'a

Implements dsp::Object.

6.1.2.8 getTexture()

```
sf::Texture * dsp::Arrows::getTexture ( )  [static]
```

Zwraca wskaznik na teksture

6.1.2.9 isClicked()

```
bool dsp::Arrows::isClicked (
            sf::Vector2f mouse_position )  [virtual]
```

Sprawdz czy nastapilo klikniecie

Reimplemented from dsp::Object.

6.1.2.10 setMax()

```
void dsp::Arrows::setMax (
            unsigned int max )
```

Ustawia maksimum

6.1.2.11 setMin()

```
void dsp::Arrows::setMin (
            unsigned int min )
```

Ustawia minimum

6.1.3 Member Data Documentation

6.1.3.1 fractionL_

```
float dsp::Arrows::fractionL_  [private]
```

Wspolczynnik wypelnienia przestrzeni w ktorej jest wyswietlana lewa strzalka

6.1.3.2 fractionR_

```
float dsp::Arrows::fractionR_  [private]
```

Wspolczynnik wypelnienia przestrzeni w ktorej jest wyswietlana prawa strzalka

6.1.3.3 left_

```
sf::Sprite dsp::Arrows::left_  [private]
```

Sprite lewej strzalki

6.1.3.4 max_

```
unsigned int dsp::Arrows::max_  [private]
```

Maksymalna wartosc zmiennej

6.1.3.5 min_

```
unsigned int dsp::Arrows::min_  [private]
```

Minimalna wartosc zmiennej

6.1.3.6 right_

```
sf::Sprite dsp::Arrows::right_  [private]
```

Sprite prawej strzalki

6.1.3.7 scale_

```
float dsp::Arrows::scale_  [private]
```

Skala sprite wzgledem tekstury

6.1.3.8 step_

```
int dsp::Arrows::step_  [private]
```

Wartosc o jaka jest zmieniana zmienna

6.1.3.9 texture_

```
sf::Texture dsp::Arrows::texture_  [static], [private]
```

Tekstura strzalki (taka sama dla wszystkich obiektow)

6.1.3.10 value_

```
unsigned int* dsp::Arrows::value_  [private]
```

Modyfikowana zmienna

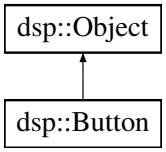
The documentation for this class was generated from the following files:

- Projekt/Projekt/arrows.h
- Projekt/Projekt/arrows.cpp

6.2 dsp::Button Class Reference

`#include <button.h>`

Inheritance diagram for dsp::Button:



Public Member Functions

- Button (Object *, void(*)(void *), bool, bool, ButtonType, std::string="", bool=true, int=30)
- bool isClicked (sf::Vector2f)
- void setText (std::string, int=-1)
- void setActive (bool)
- void Assign ()
- sf::Vector2f getSize ()
- void AddToList ()
- void AddToClickableList ()
- sf::Vector2f getEndPoint () const
- void Draw ()

Static Public Member Functions

- static sf::Texture * getTextBtnTexture ()
- static sf::Texture * getNextBtnTexture ()
- static sf::Texture * getRefreshBtnTexture ()

Private Attributes

- void(* onClickFunction_)(void *)
- sf::Texture * texture_
- sf::Sprite button_
- sf::Text text_
- ButtonType button_type_
- bool active_
- const float scale_ [3]

Static Private Attributes

- static sf::Texture text_button_
- static sf::Texture next_button_
- static sf::Texture refresh_button_

Additional Inherited Members

6.2.1 Constructor & Destructor Documentation

6.2.1.1 Button()

```
dsp::Button::Button (
            Object * parent,
            void(*)(void *) onClickFunction,
            bool add_to_list,
            bool is_clickable,
            ButtonType button_type,
            std::string text = "",
            bool active = true,
            int font_size = 30 )
```

Konstruktor

6.2.2 Member Function Documentation

6.2.2.1 AddToClickableList()

```
void dsp::Button::AddToClickableList ( )
```

Dodaj do listy obiektow ktore moga byc nacisniete

6.2.2.2 AddToList()

```
void dsp::Button::AddToList ( )  [virtual]
```

Dodaj do listy objektow

Implements dsp::Object.

6.2.2.3 Assign()

```
void dsp::Button::Assign ( )  [virtual]
```

Ustawienie sprite'a i pola tekstowego na odpowiednich pozycjach

Implements dsp::Object.

6.2.2.4 Draw()

```
void dsp::Button::Draw ( )  [virtual]
```

Wyswietl sprite i pole tekstowe

Implements dsp::Object.

6.2.2.5 getEndPoint()

```
sf::Vector2f dsp::Button::getEndPoint ( ) const  [virtual]
```

Zwraca punkt konca sprite'a

Implements dsp::Object.

6.2.2.6 getNextBtnTexture()

```
sf::Texture * dsp::Button::getNextBtnTexture ( )  [static]
```

Zwraca wskaznik na teksture przycisku NEXT_BUTTON

6.2.2.7 getRefreshBtnTexture()

```
sf::Texture * dsp::Button::getRefreshBtnTexture ( )  [static]
```

Zwraca wskaznik na teksture przycisku REFRESH_BUTTON

6.2.2.8 getSize()

```
sf::Vector2f dsp::Button::getSize ( )  [virtual]
```

Zwraca rozmiar sprite'a

Implements dsp::Object.

6.2.2.9 getTextBtnTexture()

```
sf::Texture * dsp::Button::getTextBtnTexture ( )  [static]
```

Zwraca wskaznik na teksture przycisku TEXT_BUTTON

6.2.2.10 isClicked()

```
bool dsp::Button::isClicked (
            sf::Vector2f mouse_position )  [virtual]
```

Sprawdz czy nastapilo klikniecie

Reimplemented from dsp::Object.

6.2.2.11 setActive()

```
void dsp::Button::setActive (
            bool state )
```

Aktywuj przycisk

6.2.2.12 setText()

```
void dsp::Button::setText (
            std::string text,
            int font_size = -1 )
```

Ustawia tekst przycisku

6.2.3 Member Data Documentation

6.2.3.1 active_

```
bool dsp::Button::active_  [private]
```

Informacja o tym czy przycisk jest aktywny

6.2.3.2 button_

```
sf::Sprite dsp::Button::button_  [private]
```

Aktualny sprite przycisku

6.2.3.3 button_type_

```
ButtonType dsp::Button::button_type_  [private]
```

Tym przycisku

6.2.3.4 next_button_

```
sf::Texture dsp::Button::next_button_  [static], [private]
```

Tekstura dla przycisku next

6.2.3.5 onClickFunction_

```
void(* dsp::Button::onClickFunction_) (void *)  [private]
```

Wskaznik na funkcje obslugujaca klikniecie

6.2.3.6 refresh_button_

```
sf::Texture dsp::Button::refresh_button_  [static], [private]
```

Tekstura dla przycisku refresh

6.2.3.7 scale_

```
const float dsp::Button::scale_[3]  [private]
```

Tablica ze skala tekstur dla wszystkich typow przyciskow

6.2.3.8 text_

```
sf::Text dsp::Button::text_  [private]
```

Tekst ktory jest wyswietlany na przycisku, jesli jego typ to TEXT_BUTTON

6.2.3.9 text_button_

```
sf::Texture dsp::Button::text_button_  [static], [private]
```

Tekstura dla przycisku z tekstem

6.2.3.10 texture_

```
sf::Texture* dsp::Button::texture_  [private]
```

Aktualna tekstura przycisku

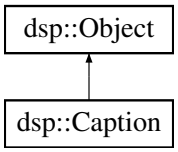
The documentation for this class was generated from the following files:

- Projekt/Projekt/button.h
- Projekt/Projekt/button.cpp

6.3 dsp::Caption Class Reference

```
#include <caption.h>
```

Inheritance diagram for dsp::Caption:



Public Member Functions

- Caption (dsp::Object *, bool, std::string="", int=30)
- void Assign ()
- sf::Vector2f getSize ()
- void AddToList ()
- sf::Vector2f getEndPoint () const
- void Draw ()

Private Attributes

- sf::Text text_

Additional Inherited Members

6.3.1 Constructor & Destructor Documentation

6.3.1.1 Caption()

```
dsp::Caption::Caption (
            dsp::Object * parent,
            bool add_to_list,
            std::string text = "",
            int font_size = 30 )
```

Konstruktor

6.3.2 Member Function Documentation

6.3.2.1 AddToList()

```
void dsp::Caption::AddToList ( )  [virtual]
```

Dodaj do listy objektow

Implements dsp::Object.

6.3.2.2 Assign()

```
void dsp::Caption::Assign ( )  [virtual]
```

Ustawienie pola tekstowego na odpowiedniej pozycji

Implements dsp::Object.

6.3.2.3 Draw()

```
void dsp::Caption::Draw ( )  [virtual]
```

Wyswietl pole tekstowe

Implements dsp::Object.

6.3.2.4 getEndPoint()

```
sf::Vector2f dsp::Caption::getEndPoint ( ) const  [virtual]
```

Zwraca punkt konca pola tekstowego

Implements dsp::Object.

6.3.2.5 getSize()

```
sf::Vector2f dsp::Caption::getSize ( )  [virtual]
```

Zwraca rozmiar pola tekstowego

Implements dsp::Object.

6.3.3 Member Data Documentation

6.3.3.1 text_

```
sf::Text dsp::Caption::text_  [private]
```

Tekst ktory jest wyswietlany

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

- Projekt/Projekt/caption.h
- Projekt/Projekt/caption.cpp

6.4 Cell Class Reference

```
#include <cell.h>
```

Public Member Functions

- Cell (unsigned int=6, unsigned int=4, unsigned int=50)
- sf::Color getColor () const
- State getState () const
- void setState (State)
- unsigned int getAge () const
- unsigned int getInfectionTime () const
- unsigned int * getInfectionTimePtr ()
- unsigned int getImmuneTime () const
- unsigned int * getImmuneTimePtr ()
- unsigned int getInfectionPropability () const
- unsigned int * getInfectionPropabilityPtr ()
- void setInfectionTime (unsigned int)
- void setImmuneTime (unsigned int)
- void setInfectionPropability (unsigned int)
- void setAge (unsigned int)
- void Life ()
- void beInfected ()
- void Infect ()

Private Attributes

- State state_
- unsigned int age_
- unsigned int infection_time_
- unsigned int immune_time_
- unsigned int infection_propabitity_

6.4.1 Constructor & Destructor Documentation

6.4.1.1 Cell()

```
Cell::Cell (
            unsigned int infection_time = 6,
            unsigned int immune_time = 4,
            unsigned int infection_propability = 50 )
```

Konstruktor

6.4.2 Member Function Documentation

6.4.2.1 beInfected()

```
void Cell::beInfected ( )
```

Infekowanie sasiednich komorek

6.4.2.2 getAge()

```
unsigned int Cell::getAge ( ) const
```

Zwraca wiek

6.4.2.3 getColor()

```
sf::Color Cell::getColor ( ) const
```

Zwraca kolor

6.4.2.4 getImmuneTime()

```
unsigned int Cell::getImmuneTime ( ) const
```

Zwraca czas odpornosci

6.4.2.5 getImmuneTimePtr()

```
unsigned int * Cell::getImmuneTimePtr ( )
```

Zwraca wskaznik do zmiennej 'immune_time_'

6.4.2.6 getInfectionPropability()

```
unsigned int Cell::getInfectionPropability ( ) const
```

Zwraca prawdopodobienstwo infekcji

6.4.2.7 getInfectionPropabilityPtr()

```
unsigned int * Cell::getInfectionPropabilityPtr ( )
```

Zwraca wskaznik do zmiennej 'infection_propabitity_'

6.4.2.8 getInfectionTime()

```
unsigned int Cell::getInfectionTime ( ) const
```

Zwraca czas infekcji

6.4.2.9 getInfectionTimePtr()

```
unsigned int * Cell::getInfectionTimePtr ( )
```

Zwraca wskaznik do zmiennej 'infection_time_'

6.4.2.10 getState()

```
State Cell::getState ( ) const
```

Zwraca stan komorki

6.4.2.11 Infect()

```
void Cell::Infect ( )
```

Infekuje komorke

6.4.2.12 Life()

```
void Cell::Life ( )
```

Obsluga zycia komorki

6.4.2.13 setAge()

```
void Cell::setAge (
            unsigned int age )
```

Ustawia wiek

6.4.2.14 setImmuneTime()

```
void Cell::setImmuneTime (
            unsigned int immune_time )
```

Ustawia czas trwania odpornosci

6.4.2.15 setInfectionPropability()

```
void Cell::setInfectionPropability (
            unsigned int infection_propability )
```

Ustawia prawdopodobienstwo zarazenia

6.4.2.16 setInfectionTime()

```
void Cell::setInfectionTime (
            unsigned int infection_time )
```

Ustawia czas trwania infekcji

6.4.2.17 setState()

```
void Cell::setState (
            State state )
```

Ustawia stan komorki

6.4.3 Member Data Documentation

6.4.3.1 age_

```
unsigned int Cell::age_  [private]
```

Ilosc cykli komorki

6.4.3.2 immune_time_

```
unsigned int Cell::immune_time_  [private]
```

Ilosc cykli jaka musi uplynac do zmiany stanu z opronej na zdrowa

6.4.3.3 infection_propabitity_

```
unsigned int Cell::infection_propabitity_  [private]
```

Szansa na infekcje sasiednich komorek w %

6.4.3.4 infection_time_

```
unsigned int Cell::infection_time_  [private]
```

Ilosc cylki jaka musi uplynac do zmiany stanu z zarazonej na odporna

6.4.3.5 state_

```
State Cell::state_  [private]
```

Stan komorki

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

- Projekt/Projekt/cell.h
- Projekt/Projekt/cell.cpp

6.5 dsp::GraphicCell Struct Reference

```
#include <program.h>
```

Public Member Functions

- GraphicCell ()
- GraphicCell (unsigned int infection_time, unsigned int immune_time, unsigned int infection_propability)
- GraphicCell getModel ()

Public Attributes

- Cell cell
- sf::RectangleShape rect

6.5.1 Detailed Description

Definicja struktury graficznej komorki

6.5.2 Constructor & Destructor Documentation

6.5.2.1 GraphicCell() [1/2]

```
dsp::GraphicCell::GraphicCell ( )  [inline]
```

6.5.2.2 GraphicCell() [2/2]

```
dsp::GraphicCell::GraphicCell (
            unsigned int infection_time,
            unsigned int immune_time,
            unsigned int infection_propability )  [inline]
```

Konstruktor domyslny

Konstruktor

6.5.3 Member Function Documentation

6.5.3.1 getModel()

```
dsp::GraphicCell dsp::GraphicCell::getModel ( )
```

Zwroc model komorki ktory bedzie powielony na reszte nowych komorek

6.5.4 Member Data Documentation

6.5.4.1 cell

```
Cell dsp::GraphicCell::cell
```

Logiczna czesc komorki typu Cell

6.5.4.2 rect

```
sf::RectangleShape dsp::GraphicCell::rect
```

Graficzna reprezentacja komorki

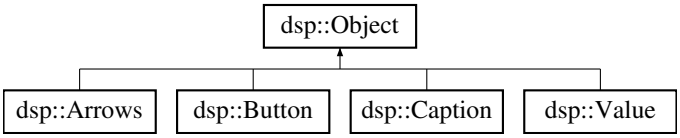
The documentation for this struct was generated from the following files:

- Projekt/Projekt/program.h
- Projekt/Projekt/program.cpp

6.6 dsp::Object Class Reference

`#include <object.h>`

Inheritance diagram for dsp::Object:



Public Member Functions

- Object (Object *=NULL)
- sf::Vector2f getValidPosition (Object *) const
- virtual void Assign ()=0
- virtual sf::Vector2f getSize ()=0
- virtual void AddToList ()=0
- virtual sf::Vector2f getEndPoint () const =0
- virtual void Draw ()=0
- virtual bool isClicked (sf::Vector2f)

Static Public Member Functions

- static std::vector< Object * > getObjectList ()
- static std::vector< Object * > getClickableObjectList ()
- static void ResetObjectList ()
- static void ResetClickableObjectList ()
- static void setRenderWindow (sf::RenderWindow *)
- static void setWindowClass (Window *)
- static void setPointOfReference (Point, Point)
- static sf::Font * getFont ()
- static int FindInObjectList (Object *)

Protected Attributes

- Object * parent_
- unsigned int spacer_

Static Protected Attributes

- static std::vector< Object * > object_list_
- static std::vector< Object * > clickable_object_list_
- static Point point_of_reference_start_
- static Point point_of_reference_size_
- static sf::RenderWindow * window_ = nullptr
- static Window * window_class_ = nullptr
- static sf::Font font_

6.6.1 Constructor & Destructor Documentation

6.6.1.1 Object()

```
dsp::Object::Object (
            dsp::Object * parent = NULL )
```

Konstruktor

6.6.2 Member Function Documentation

6.6.2.1 AddToList()

```
virtual void dsp::Object::AddToList ( )  [pure virtual]
```

Implemented in dsp::Button, dsp::Arrows, dsp::Value, and dsp::Caption.

6.6.2.2 Assign()

```
virtual void dsp::Object::Assign ( )  [pure virtual]
```

Implemented in dsp::Button, dsp::Arrows, dsp::Value, and dsp::Caption.

6.6.2.3 Draw()

```
virtual void dsp::Object::Draw ( )  [pure virtual]
```

Implemented in dsp::Button, dsp::Arrows, dsp::Value, and dsp::Caption.

6.6.2.4 FindInObjectList()

```
int dsp::Object::FindInObjectList (
            Object * object )  [static]
```

6.6.2.5 getClickableObjectList()

```
std::vector< dsp::Object * > dsp::Object::getClickableObjectList ( )  [static]
```

6.6.2.6 getEndPoint()

```
virtual sf::Vector2f dsp::Object::getEndPoint ( ) const  [pure virtual]
```

Implemented in dsp::Button, dsp::Arrows, dsp::Value, and dsp::Caption.

6.6.2.7 getFont()

```
sf::Font * dsp::Object::getFont ( )  [static]
```

6.6.2.8 getObjectList()

```
std::vector< dsp::Object * > dsp::Object::getObjectList ( )  [static]
```

6.6.2.9 getSize()

```
virtual sf::Vector2f dsp::Object::getSize ( )  [pure virtual]
```

Implemented in dsp::Button, dsp::Arrows, dsp::Value, and dsp::Caption.

6.6.2.10 getValidPosition()

```
sf::Vector2f dsp::Object::getValidPosition (
            dsp::Object * object ) const
```

6.6.2.11 isClicked()

```
virtual bool dsp::Object::isClicked (
            sf::Vector2f  )  [inline], [virtual]
```

Reimplemented in dsp::Value, dsp::Button, and dsp::Arrows.

6.6.2.12 ResetClickableObjectList()

```
void dsp::Object::ResetClickableObjectList ( )  [static]
```

6.6.2.13 ResetObjectList()

```
void dsp::Object::ResetObjectList ( )  [static]
```

6.6.2.14 setPointOfReference()

```
void dsp::Object::setPointOfReference (
            Point start,
            Point size )  [static]
```

6.6.2.15 setRenderWindow()

```
void dsp::Object::setRenderWindow (
            sf::RenderWindow * window )  [static]
```

6.6.2.16 setWindowClass()

```
void dsp::Object::setWindowClass (
            dsp::Window * window_class )  [static]
```

6.6.3 Member Data Documentation

6.6.3.1 clickable_object_list_

```
std::vector< dsp::Object * > dsp::Object::clickable_object_list_  [static], [protected]
```

6.6.3.2 font_

```
sf::Font dsp::Object::font_  [static], [protected]
```

6.6.3.3 object_list_

```
std::vector< dsp::Object * > dsp::Object::object_list_  [static], [protected]
```

6.6.3.4 parent_

```
Object* dsp::Object::parent_  [protected]
```

6.6.3.5 point_of_reference_size_

```
Point dsp::Object::point_of_reference_size_  [static], [protected]
```

6.6.3.6 point_of_reference_start_

```
Point dsp::Object::point_of_reference_start_  [static], [protected]
```

6.6.3.7 spacer_

```
unsigned int dsp::Object::spacer_  [protected]
```

6.6.3.8 window_

```
sf::RenderWindow * dsp::Object::window_ = nullptr  [static], [protected]
```

6.6.3.9 window_class_

```
dsp::Window * dsp::Object::window_class_ = nullptr  [static], [protected]
```

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

- Projekt/Projekt/object.h
- Projekt/Projekt/object.cpp

6.7 Point Struct Reference

```
#include <common.h>
```

Public Member Functions

- Point ()
- Point (int, int)
- unsigned int getQuantity ()

Public Attributes

- unsigned int x
- unsigned int y

6.7.1 Constructor & Destructor Documentation

6.7.1.1 Point() [1/2]

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

Konstruktor domyslny

6.7.1.2 Point() [2/2]

```
Point::Point (
            int x,
            int y )
```

(int x, int y)

6.7.2 Member Function Documentation

6.7.2.1 getQuantity()

```
unsigned int Point::getQuantity ( )
```

Zwraca iloczyn x i y

6.7.3 Member Data Documentation

6.7.3.1 x

```
unsigned int Point::x
```

Wspolrzedna x

6.7.3.2 y

```
unsigned int Point::y
```

Wspolrzedna y

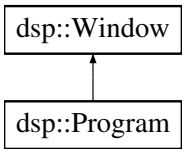
The documentation for this struct was generated from the following files:

- Projekt/Projekt/common.h
- Projekt/Projekt/common.cpp

6.8 dsp::Program Class Reference

```
#include <program.h>
```

Inheritance diagram for dsp::Program:



Public Member Functions

- Program (sf::RenderWindow &, StartUpParams *, Point)
- void setFramer (unsigned int)
- void Draw ()
- void ResizeWnd ()
- void isButtonClicked ()
- void ClickedKey (sf::Keyboard::Key)

Private Member Functions

- void Allocate ()
- Point get2DPosition (unsigned int)
- bool Framer (bool=true)
- void Resize ()
- void CalcMaxSize ()
- void CalcMinWndSize ()
- void CalculateGcellParams ()
- void initDraw ()
- void PrepGCells ()
- void AssignValues ()
- void Infect1st ()
- void Infect ()
- void InfectByClick (sf::Vector2f)
- void Look4ParamChanges ()
- void ChangeFramesPerTick (float)

Private Attributes

- std::vector< GraphicCell > field_
- Point size_
- Point old_size_
- Point max_size_
- Point min_window_size_
- Point draw_area_size_
- unsigned int gcell_size_
- unsigned int frames_since_last_tick_
- unsigned int frames_per_tick_
- unsigned int healthy_cells_
- unsigned int immune_cells_
- unsigned int infected_cells_
- Action action_
- dsp::Caption text_infection_time_
- dsp::Value value_infection_time_
- dsp::Arrows arrows_infection_time_
- dsp::Caption text_immune_time_
- dsp::Value value_immune_time_
- dsp::Arrows arrows_immune_time_
- dsp::Caption text_propability_
- dsp::Value value_propability_
- dsp::Arrows arrows_propability_
- dsp::Caption text_speed_
- dsp::Value value_speed_
- dsp::Arrows arrows_speed_
- dsp::Caption text_size_x_
- dsp::Value value_size_x_
- dsp::Arrows arrows_size_x_
- dsp::Caption text_size_y_
- dsp::Value value_size_y_
- dsp::Arrows arrows_size_y_
- dsp::Value value_healthy_counter_
- dsp::Value value_immune_counter_
- dsp::Button button_refresh_
- dsp::Value value_infected_counter_
- dsp::Button button_pause_
- dsp::Button button_next_

Friends

- void onButtonRefreshClick (void *_this)
- void onButtonPauseClick (void *_this)
- void onButtonNextClick (void *_this)

Additional Inherited Members

6.8.1 Constructor & Destructor Documentation

6.8.1.1 Program()

```
dsp::Program::Program (
            sf::RenderWindow & render_window,
            StartUpParams * start_up_params,
            Point draw_area_start_point )
```

Konstruktor (sf::RenderWindow& render_window, StartUpParams* start_up_params, Point draw_area_start_point)

6.8.2 Member Function Documentation

6.8.2.1 Allocate()

```
void dsp::Program::Allocate ( )  [private]
```

Ustawia rozmiar wektora

6.8.2.2 AssignValues()

```
void dsp::Program::AssignValues ( )  [private]
```

Przypisanie wskaznikow wartosci do pol z wartosciami

6.8.2.3 CalcMaxSize()

```
void dsp::Program::CalcMaxSize ( )  [private]
```

Oblicz maksymalny rozmiar pola

6.8.2.4 CalcMinWndSize()

```
void dsp::Program::CalcMinWndSize ( )  [private]
```

Oblicz minimalny rozmiar okna

6.8.2.5 CalculateGcellParams()

```
void dsp::Program::CalculateGcellParams ( )  [private]
```

Oblicza rozmiar graficzny komorki

6.8.2.6 ChangeFramesPerTick()

```
void dsp::Program::ChangeFramesPerTick (
            float difference )  [private]
```

Zmiana wartosci trwania ticku programu

6.8.2.7 ClickedKey()

```
void dsp::Program::ClickedKey (
            sf::Keyboard::Key key )  [virtual]
```

Zmiana wartosci edytowanych pol tekstowych wartosciami z klawiatury

Implements dsp::Window.

6.8.2.8 Draw()

```
void dsp::Program::Draw ( )  [virtual]
```

Rysowanie grafik

Implements dsp::Window.

6.8.2.9 Framer()

```
bool dsp::Program::Framer (
            bool inc = true )  [private]
```

Ustala moment ticku

6.8.2.10 get2DPosition()

```
Point dsp::Program::get2DPosition (
            unsigned int _1DPosition )  [private]
```

Konwertuje pozycje 1D na pozycje 2D

6.8.2.11 Infect()

```
void dsp::Program::Infect ( )  [private]
```

Infekcja sasiednich komorek zarazonej komorki

6.8.2.12 Infect1st()

```
void dsp::Program::Infect1st ( )  [private]
```

Infekuj pierwsza komorke znajdujaca sie na srodku

6.8.2.13 InfectByClick()

```
void dsp::Program::InfectByClick (
            sf::Vector2f mouse_position )  [private]
```

Obsluga infekcji przez klikniecie komorki

6.8.2.14 initDraw()

```
void dsp::Program::initDraw ( )  [private], [virtual]
```

Inicjalizacja grafik

Implements dsp::Window.

6.8.2.15 isButtonClicked()

```
void dsp::Program::isButtonClicked ( )  [virtual]
```

Obsluga przyciskow

Implements dsp::Window.

6.8.2.16 Look4ParamChanges()

```
void dsp::Program::Look4ParamChanges ( )  [private]
```

Zastosowanie zmian parametrow na wszystkie komorki

6.8.2.17 PrepGCells()

```
void dsp::Program::PrepGCells ( )  [private]
```

Przygotowanie graficznej czesci komorek

6.8.2.18 Resize()

```
void dsp::Program::Resize ( )  [private]
```

Zmien rozmiar pola

6.8.2.19 ResizeWnd()

```
void dsp::Program::ResizeWnd ( )
```

Zmien rozmiar okna

6.8.2.20 setFramer()

```
void dsp::Program::setFramer (
            unsigned int frames_per_tick )
```

Ustawia ilosc klatek na jednostke czasu

6.8.3 Friends And Related Function Documentation

6.8.3.1 onButtonNextClick

```
void onButtonNextClick (
            void * _this )  [friend]
```

Zaprzyjaznienie funkcji obslugi klikniecia przycisku ButtonNext

Funkcja obslugi przycisku ButtonNext

6.8.3.2 onButtonPauseClick

```
void onButtonPauseClick (
            void * _this )  [friend]
```

Zaprzyjaznienie funkcji obslugi klikniecia przycisku ButtonPause

Funkcja obslugi przycisku ButtonPause

6.8.3.3 onButtonRefreshClick

```
void onButtonRefreshClick (
            void * _this )  [friend]
```

Zaprzyjaznienie funkcji obslugi klikniecia przycisku ButtonRefresh

Funkcja obslugi przycisku ButtonRefresh

6.8.4 Member Data Documentation

6.8.4.1 action_

```
Action dsp::Program::action_  [private]
```

Aktualny stan pracy programu

6.8.4.2 arrows_immune_time_

```
dsp::Arrows dsp::Program::arrows_immune_time_ [private]
```

Strzalki do zmiany wartosci czasu odpornosci

6.8.4.3 arrows_infection_time_

```
dsp::Arrows dsp::Program::arrows_infection_time_ [private]
```

Strzalki do zmiany wartosci czasu infekcji

6.8.4.4 arrows_propability_

```
dsp::Arrows dsp::Program::arrows_propability_ [private]
```

Strzalki do zmiany wartosci prawdopodobienstwa infekcji

6.8.4.5 arrows_size_x_

```
dsp::Arrows dsp::Program::arrows_size_x_ [private]
```

Strzalki do zmiany wartosci rozmiaru pola x

6.8.4.6 arrows_size_y_

```
dsp::Arrows dsp::Program::arrows_size_y_ [private]
```

Strzalki do zmiany wartosci rozmiaru pola y

6.8.4.7 arrows_speed_

```
dsp::Arrows dsp::Program::arrows_speed_ [private]
```

Strzalki do zmiany wartosci predkosci symulacji

6.8.4.8 button_next_

```
dsp::Button dsp::Program::button_next_ [private]
```

Przycisk do pracy krokowej podczas pauzy

6.8.4.9 button_pause_

```
dsp::Button dsp::Program::button_pause_ [private]
```

Przycisk do pauzaowania/wznawiania symulacji

6.8.4.10 button_refresh_

```
dsp::Button dsp::Program::button_refresh_  [private]
```

Przycisk do czyszczenia pola komorek

6.8.4.11 draw_area_size_

```
Point dsp::Program::draw_area_size_  [private]
```

Rozmiary strefy rysowania pola

6.8.4.12 field_

```
std::vector<GraphicCell> dsp::Program::field_  [private]
```

Wektor o dlugosc x∗y (size_) typu GraphicCell

6.8.4.13 frames_per_tick_

```
unsigned int dsp::Program::frames_per_tick_  [private]
```

Ilosc klatek na tick programu

6.8.4.14 frames_since_last_tick_

```
unsigned int dsp::Program::frames_since_last_tick_  [private]
```

Ilosc klatek od ostatniego ticku programu

6.8.4.15 gcell_size_

```
unsigned int dsp::Program::gcell_size_  [private]
```

Rozmiar graficzny komorki

6.8.4.16 healthy_cells_

```
unsigned int dsp::Program::healthy_cells_  [private]
```

Ilosci zdrowych komorek w danej chwili

6.8.4.17 immune_cells_

```
unsigned int dsp::Program::immune_cells_  [private]
```

Ilosci odpornych komorek w danej chwili

6.8.4.18 infected_cells_

```
unsigned int dsp::Program::infected_cells_ [private]
```

Ilosci zainfekowanych komorek w danej chwili

6.8.4.19 max_size_

```
Point dsp::Program::max_size_ [private]
```

Maksymalny rozmiar pola ktory zmiesci sie w polu o danej rozdzielczosci

6.8.4.20 min_window_size_

```
Point dsp::Program::min_window_size_ [private]
```

Minimalna rozdzielczosc okna ktora zmiesi pole gdy komorki maja wielkosc 1px x 1px

6.8.4.21 old_size_

```
Point dsp::Program::old_size_ [private]
```

Rozmiar pola przed zmiana rozmiaru

6.8.4.22 size_

```
Point dsp::Program::size_ [private]
```

Rozmiar pola

6.8.4.23 text_immune_time_

```
dsp::Caption dsp::Program::text_immune_time_ [private]
```

Pole teksowe z informacja o czasie odpornosci

6.8.4.24 text_infection_time_

```
dsp::Caption dsp::Program::text_infection_time_ [private]
```

Pole teksowe z informacja o czasie infekcji

6.8.4.25 text_propability_

```
dsp::Caption dsp::Program::text_propability_ [private]
```

Pole teksowe z informacja o prawdopodobienstwie infekcji

6.8.4.26 text_size_x_

```
dsp::Caption dsp::Program::text_size_x_ [private]
```

Pole teksowe z informacja o rozmiarze pola x

6.8.4.27 text_size_y_

```
dsp::Caption dsp::Program::text_size_y_ [private]
```

Pole teksowe z informacja o rozmiarze pola y

6.8.4.28 text_speed_

```
dsp::Caption dsp::Program::text_speed_ [private]
```

Pole teksowe z informacja o predkosci symulacji

6.8.4.29 value_healthy_counter_

```
dsp::Value dsp::Program::value_healthy_counter_ [private]
```

Wartosci z iloscia zdrowych komorek

6.8.4.30 value_immune_counter_

```
dsp::Value dsp::Program::value_immune_counter_ [private]
```

Wartosci z iloscia odpornych komorek

6.8.4.31 value_immune_time_

```
dsp::Value dsp::Program::value_immune_time_ [private]
```

Wartosc czasu odpornosci

6.8.4.32 value_infected_counter_

```
dsp::Value dsp::Program::value_infected_counter_ [private]
```

Wartosci z iloscia zainfekowanych komorek

6.8.4.33 value_infection_time_

```
dsp::Value dsp::Program::value_infection_time_ [private]
```

Wartosc czasu infekcji

6.8.4.34 value_propability_

```
dsp::Value dsp::Program::value_propability_  [private]
```

Wartosc prawdopodobienstwa infekcji

6.8.4.35 value_size_x_

```
dsp::Value dsp::Program::value_size_x_  [private]
```

Wartosc rozmiaru pola x

6.8.4.36 value_size_y_

```
dsp::Value dsp::Program::value_size_y_  [private]
```

Wartosc rozmiaru pola y

6.8.4.37 value_speed_

```
dsp::Value dsp::Program::value_speed_  [private]
```

Wartosc predkosci symulacji

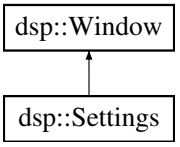
The documentation for this class was generated from the following files:

- Projekt/Projekt/program.h
- Projekt/Projekt/program.cpp

6.9 dsp::Settings Class Reference

```
#include <settings.h>
```

Inheritance diagram for dsp::Settings:



Public Member Functions

- Settings (sf::RenderWindow &, StartUpParams *, Point=Point(10, 10))
- void Draw ()
- void isButtonClicked ()
- void ClickedKey (sf::Keyboard::Key)

Private Member Functions

- void initDraw ()
- void CalcMaxSize ()

Private Attributes

- Point max_size_
- Point min_window_size_
- dsp::Caption text_resolution_
- dsp::Caption text_resolution_x_
- dsp::Value value_resolution_x_
- dsp::Arrows arrows_resolution_x_
- dsp::Caption text_resolution_y_
- dsp::Value value_resolution_y_
- dsp::Arrows arrows_resolution_y_
- dsp::Caption text_size_
- dsp::Caption text_size_x_
- dsp::Value value_size_x_
- dsp::Arrows arrows_size_x_
- dsp::Caption text_size_y_
- dsp::Value value_size_y_
- dsp::Arrows arrows_size_y_
- dsp::Caption text_speed_
- dsp::Value value_speed_
- dsp::Arrows arrows_speed_
- dsp::Caption text_infection_time_
- dsp::Value value_infection_time_
- dsp::Arrows arrows_infection_time_
- dsp::Caption text_immune_time_
- dsp::Value value_immune_time_
- dsp::Arrows arrows_immune_time_
- dsp::Caption text_propability_
- dsp::Value value_propability_
- dsp::Arrows arrows_propability_
- dsp::Caption _SPACER_button_start_
- dsp::Button button_start_

Friends

- void onButtonStartClick (void *)

Additional Inherited Members

6.9.1 Constructor & Destructor Documentation

6.9.1.1 Settings()

```
dsp::Settings::Settings (
            sf::RenderWindow & render_window,
            StartUpParams * start_up_params,
            Point draw_area_start_point = Point(10, 10) )
```

Konstruktor

6.9.2 Member Function Documentation

6.9.2.1 CalcMaxSize()

```
void dsp::Settings::CalcMaxSize ( )  [private]
```

Oblicz maksymalny rozmiar pola

6.9.2.2 ClickedKey()

```
void dsp::Settings::ClickedKey (
            sf::Keyboard::Key key )  [virtual]
```

Zmiana wartosci edytowanych pol tekstowych wartosciami z klawiatury

Implements dsp::Window.

6.9.2.3 Draw()

```
void dsp::Settings::Draw ( )  [virtual]
```

Rysowanie grafik

Implements dsp::Window.

6.9.2.4 initDraw()

```
void dsp::Settings::initDraw ( )  [private], [virtual]
```

Inicjalizacja grafik

Implements dsp::Window.

6.9.2.5 isButtonClicked()

```
void dsp::Settings::isButtonClicked ( )  [virtual]
```

Obsluga przyciskow

Implements dsp::Window.

6.9.3 Friends And Related Function Documentation

6.9.3.1 onButtonStartClick

```
void onButtonStartClick (
            void * )  [friend]
```

Zaprzyjaznienie funkcji obslugi klikniecia przycisku ButtonStart

Funkcja obslugi przycisku ButtonStart

6.9.4 Member Data Documentation

6.9.4.1 _SPACER_button_start_

```
dsp::Caption dsp::Settings::_SPACER_button_start_  [private]
```

Pole tekstowe pelniace role wysrodkowania przycisku

6.9.4.2 arrows_immune_time_

```
dsp::Arrows dsp::Settings::arrows_immune_time_  [private]
```

Strzalki do zmiany wartosci czasu odpornosci

6.9.4.3 arrows_infection_time_

```
dsp::Arrows dsp::Settings::arrows_infection_time_  [private]
```

Strzalki do zmiany wartosci czasu infekcji

6.9.4.4 arrows_propability_

```
dsp::Arrows dsp::Settings::arrows_propability_  [private]
```

Strzalki do zmiany wartosci prawdopodobienstwa infekcji

6.9.4.5 arrows_resolution_x_

```
dsp::Arrows dsp::Settings::arrows_resolution_x_  [private]
```

Strzalki do zmiany wartosci rozdzielczosci okna x

6.9.4.6 arrows_resolution_y_

```
dsp::Arrows dsp::Settings::arrows_resolution_y_  [private]
```

Strzalki do zmiany wartosci rozdzielczosci okna y

6.9.4.7 arrows_size_x_

```
dsp::Arrows dsp::Settings::arrows_size_x_  [private]
```

Strzalki do zmiany wartosci wielkosci pola x

6.9.4.8 arrows_size_y_

```
dsp::Arrows dsp::Settings::arrows_size_y_  [private]
```

Strzalki do zmiany wartosci wielkosci pola y

6.9.4.9 arrows_speed_

```
dsp::Arrows dsp::Settings::arrows_speed_  [private]
```

Strzalki do zmiany wartosci predkosci symulacji

6.9.4.10 button_start_

```
dsp::Button dsp::Settings::button_start_  [private]
```

Przycisk do rozpoczecia symulacji

6.9.4.11 max_size_

```
Point dsp::Settings::max_size_  [private]
```

Maksymalny rozmiar pola wzgledem rozdzielczosci okna

6.9.4.12 min_window_size_

```
Point dsp::Settings::min_window_size_  [private]
```

Minimalna rozdzielczosc ekranu wzgledem wielkosci pola

6.9.4.13 text_immune_time_

```
dsp::Caption dsp::Settings::text_immune_time_  [private]
```

Pole teksowe z informacja o czasie odpornosci

6.9.4.14 text_infection_time_

```
dsp::Caption dsp::Settings::text_infection_time_  [private]
```

Pole teksowe z informacja o czasie infekcji

6.9.4.15 text_propability_

```
dsp::Caption dsp::Settings::text_propability_  [private]
```

Pole teksowe z informacja o prawdopodobienstwie infekcji

6.9.4.16 text_resolution_

```
dsp::Caption dsp::Settings::text_resolution_ [private]
```

Pole teksowe z informacja o rozdzielczosc okna

6.9.4.17 text_resolution_x_

```
dsp::Caption dsp::Settings::text_resolution_x_ [private]
```

Pole teksowe z informacja o rozdzielczosc okna x

6.9.4.18 text_resolution_y_

```
dsp::Caption dsp::Settings::text_resolution_y_ [private]
```

Pole teksowe z informacja o rozdzielczosc okna y

6.9.4.19 text_size_

```
dsp::Caption dsp::Settings::text_size_ [private]
```

Pole teksowe z informacja o wielkosci pola

6.9.4.20 text_size_x_

```
dsp::Caption dsp::Settings::text_size_x_ [private]
```

Pole teksowe z informacja o wielkosci pola x

6.9.4.21 text_size_y_

```
dsp::Caption dsp::Settings::text_size_y_ [private]
```

Pole teksowe z informacja o wielkosci pola y

6.9.4.22 text_speed_

```
dsp::Caption dsp::Settings::text_speed_ [private]
```

Pole teksowe z informacja o predkosci symulacji

6.9.4.23 value_immune_time_

```
dsp::Value dsp::Settings::value_immune_time_ [private]
```

Wartosc czasu odpornosci

6.9.4.24 value_infection_time_

```
dsp::Value dsp::Settings::value_infection_time_  [private]
```

Wartosc czasu infekcji

6.9.4.25 value_propability_

```
dsp::Value dsp::Settings::value_propability_  [private]
```

Wartosc prawdopodobienstwa infekcji

6.9.4.26 value_resolution_x_

```
dsp::Value dsp::Settings::value_resolution_x_  [private]
```

Wartosc rozdzielczosci okna x

6.9.4.27 value_resolution_y_

```
dsp::Value dsp::Settings::value_resolution_y_  [private]
```

Wartosc rozdzielczosci okna y

6.9.4.28 value_size_x_

```
dsp::Value dsp::Settings::value_size_x_  [private]
```

Wartosci wielkosci pola x

6.9.4.29 value_size_y_

```
dsp::Value dsp::Settings::value_size_y_  [private]
```

Wartosci wielkosci pola y

6.9.4.30 value_speed_

```
dsp::Value dsp::Settings::value_speed_  [private]
```

Wartosc predkosci symulacji

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

- Projekt/Projekt/settings.h
- Projekt/Projekt/settings.cpp

6.10 StartUpParams Struct Reference

`#include <common.h>`

Public Member Functions

- StartUpParams ()

Public Attributes

- Point size
- Point window_resolution
- Point settings_size
- unsigned int frame_rate
- unsigned int frames_per_tick
- unsigned int infection_time
- unsigned int immune_time
- unsigned int infection_propability

6.10.1 Constructor & Destructor Documentation

6.10.1.1 StartUpParams()

```
StartUpParams::StartUpParams ( )
```

6.10.2 Member Data Documentation

6.10.2.1 frame_rate

```
unsigned int StartUpParams::frame_rate
```

Ilosc FPS

6.10.2.2 frames_per_tick

```
unsigned int StartUpParams::frames_per_tick
```

Ilosc klatek na klatke logiczna

6.10.2.3 immune_time

```
unsigned int StartUpParams::immune_time
```

Czas trwania odpornosci

6.10.2.4 infection_propability

```
unsigned int StartUpParams::infection_propability
```

Prawdopodobinenstwo infekcji

6.10.2.5 infection_time

```
unsigned int StartUpParams::infection_time
```

Czas trwania infekcji

6.10.2.6 settings_size

```
Point StartUpParams::settings_size
```

Rozmiar pola ustawien

6.10.2.7 size

```
Point StartUpParams::size
```

Rozmiar pola

6.10.2.8 window_resolution

```
Point StartUpParams::window_resolution
```

Rozdzielczosc okna

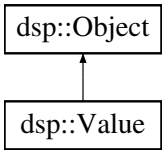
The documentation for this struct was generated from the following files:

- Projekt/Projekt/common.h
- Projekt/Projekt/common.cpp

6.11 dsp::Value Class Reference

```
#include <value.h>
```

Inheritance diagram for dsp::Value:



Public Member Functions

- Value (Object ∗, bool, bool, unsigned int ∗, unsigned int=0, unsigned int=UINT_MAX, float=1, int=40, sf::↩ Color=sf::Color::Transparent)
- void ChangeValue (int)
- void Assign ()
- sf::Vector2f getSize ()
- void AddToList ()
- void AddToClickableList ()
- sf::Vector2f getEndPoint () const
- void Draw ()
- void AssignValue (unsigned int ∗)
- unsigned int getMin () const
- unsigned int getMax () const
- void setMin (unsigned int)
- void setMax (unsigned int)
- void CheckValue ()
- bool isClicked (sf::Vector2f)

Static Public Member Functions

- static bool isEdited (Value ∗)
- static void EditFromKeyboard (sf::Keyboard::Key key)

Private Attributes

- sf::Text text_value_
- sf::RectangleShape rectangle_
- unsigned int ∗ value_
- unsigned int min_
- unsigned int max_
- float fraction_
- bool is_edited_

Static Private Attributes

- static Value ∗ edited_ = nullptr

Additional Inherited Members

6.11.1 Constructor & Destructor Documentation

6.11.1.1 Value()

```
dsp::Value::Value (
            Object * parent,
            bool add_to_list,
            bool is_clickable,
            unsigned int * value,
            unsigned int min = 0,
            unsigned int max = UINT_MAX,
            float fraction = 1,
            int font_size = 40,
            sf::Color background_color = sf::Color::Transparent )
```

Konstruktor

6.11.2 Member Function Documentation

6.11.2.1 AddToClickableList()

```
void dsp::Value::AddToClickableList ( )
```

Dodaj do listy obiektow ktore moga byc nacisniete

6.11.2.2 AddToList()

```
void dsp::Value::AddToList ( )  [virtual]
```

Dodaj do listy objektow

Implements dsp::Object.

6.11.2.3 Assign()

```
void dsp::Value::Assign ( )  [virtual]
```

Ustawienie pola tekstowego i tla na odpowiednich pozycjach

Implements dsp::Object.

6.11.2.4 AssignValue()

```
void dsp::Value::AssignValue (
            unsigned int * value )
```

Ustawia adres modyfikowanej zmiennej

6.11.2.5 ChangeValue()

```
void dsp::Value::ChangeValue (
            int step )  [inline]
```

Zmien wartosc zmiennej

6.11.2.6 CheckValue()

```
void dsp::Value::CheckValue ( )
```

Sprawdz czy wartosc nalezy do dozwolonego przedzialu

6.11.2.7 Draw()

```
void dsp::Value::Draw ( )  [virtual]
```

Wyswietl pole tekstowe i tlo

Implements dsp::Object.

6.11.2.8 EditFromKeyboard()

```
void dsp::Value::EditFromKeyboard (
            sf::Keyboard::Key key )  [static]
```

Zmien wartosc edytowanego pola wartosciami wprowadzanymi z klawiatury

6.11.2.9 getEndPoint()

```
sf::Vector2f dsp::Value::getEndPoint ( ) const  [virtual]
```

Zwraca punkt konca pola tekstowego z wartoscia

Implements dsp::Object.

6.11.2.10 getMax()

```
unsigned int dsp::Value::getMax ( ) const
```

Zwraca maksimum wartosci

6.11.2.11 getMin()

```
unsigned int dsp::Value::getMin ( ) const
```

Zwraca minimum wartosci

6.11.2.12 getSize()

```
sf::Vector2f dsp::Value::getSize ( )  [virtual]
```

Zwraca rozmiar tla

Implements dsp::Object.

6.11.2.13 isClicked()

```
bool dsp::Value::isClicked (
            sf::Vector2f mouse_position )  [virtual]
```

Sprawdz czy nastapilo klikniecie

Reimplemented from dsp::Object.

6.11.2.14 isEdited()

```
bool dsp::Value::isEdited (
            Value * ptr )  [static]
```

Zwraca czy aktualny obiekt jest edytowany

6.11.2.15 setMax()

```
void dsp::Value::setMax (
            unsigned int max )
```

Ustawia maksimum wartosci

6.11.2.16 setMin()

```
void dsp::Value::setMin (
            unsigned int min )
```

Ustawia munimum wartosci

6.11.3 Member Data Documentation

6.11.3.1 edited_

```
dsp::Value * dsp::Value::edited_ = nullptr  [static], [private]
```

Wskaznik na pole z wartoscia ktore jest edytowane z klawiatury

6.11.3.2 fraction_

```
float dsp::Value::fraction_  [private]
```

Wspolczynnik wypelnienia przestrzeni w ktorej jest wyswietlane pole tekstowe

6.11.3.3 is_edited_

```
bool dsp::Value::is_edited_  [private]
```

Informacja o tym czy pole jest aktualnie edytowane

6.11.3.4 max_

```
unsigned int dsp::Value::max_  [private]
```

Maksymalna wartosc zmiennej

6.11.3.5 min_

```
unsigned int dsp::Value::min_  [private]
```

Minimalna wartosc zmiennej

6.11.3.6 rectangle_

```
sf::RectangleShape dsp::Value::rectangle_  [private]
```

Prostokat bedacy tlem

6.11.3.7 text_value_

```
sf::Text dsp::Value::text_value_  [private]
```

Pole tekstowe ktore wyswietla wartosc zmiennej

6.11.3.8 value_

```
unsigned int* dsp::Value::value_  [private]
```

Wskaznik na zmienna

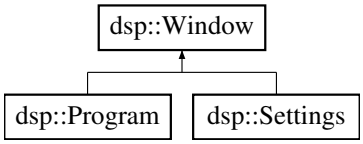
The documentation for this class was generated from the following files:

- Projekt/Projekt/value.h
- Projekt/Projekt/value.cpp

6.12 dsp::Window Class Reference

`#include <window.h>`

Inheritance diagram for dsp::Window:



Public Member Functions

- Window (sf::RenderWindow &, StartUpParams *, Point=Point(0, 0))
- virtual void Draw ()=0
- virtual void isButtonClicked ()=0
- virtual void ClickedKey (sf::Keyboard::Key)=0

Static Public Member Functions

- static sf::Image * getIcon ()

Protected Attributes

- sf::RenderWindow & window_
- StartUpParams * start_up_params_
- Point draw_area_start_point_

Static Protected Attributes

- static sf::Image icon_

Private Member Functions

- virtual void initDraw ()=0

6.12.1 Constructor & Destructor Documentation

6.12.1.1 Window()

```
dsp::Window::Window (
            sf::RenderWindow & window,
            StartUpParams * start_up_params,
            Point draw_area_start_point = Point(0, 0) )
```

6.12.2 Member Function Documentation

6.12.2.1 ClickedKey()

```
virtual void dsp::Window::ClickedKey (
            sf::Keyboard::Key  )  [pure virtual]
```

Obsluga klawiatury

Implemented in dsp::Program, and dsp::Settings.

6.12.2.2 Draw()

```
virtual void dsp::Window::Draw ( )  [pure virtual]
```

Wyswietl grafiki

Implemented in dsp::Program, and dsp::Settings.

6.12.2.3 getIcon()

```
sf::Image * dsp::Window::getIcon ( )  [static]
```

Zwraca ikone

6.12.2.4 initDraw()

```
virtual void dsp::Window::initDraw ( )  [private], [pure virtual]
```

Inicjalizacja grafik

Implemented in dsp::Program, and dsp::Settings.

6.12.2.5 isButtonClicked()

```
virtual void dsp::Window::isButtonClicked ( )  [pure virtual]
```

Obsluga klikniecia

Implemented in dsp::Program, and dsp::Settings.

6.12.3 Member Data Documentation

6.12.3.1 draw_area_start_point_

```
Point dsp::Window::draw_area_start_point_  [protected]
```

Poczatek strefy rysowania okna glownego

6.12.3.2 icon_

```
sf::Image dsp::Window::icon_  [static], [protected]
```

Ikona okna

6.12.3.3 start_up_params_

```
StartUpParams* dsp::Window::start_up_params_  [protected]
```

Wskaznik na parametry startowe

6.12.3.4 window_

```
sf::RenderWindow& dsp::Window::window_  [protected]
```

Referencja do glownego okna

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

- Projekt/Projekt/window.h
- Projekt/Projekt/window.cpp

Chapter 7

File Documentation

7.1 Projekt/Projekt/arrows.cpp File Reference

```
#include "arrows.h"
```

7.2 Projekt/Projekt/arrows.h File Reference

```
#include "object.h"
#include "value.h"
```

Classes

- class dsp::Arrows

Namespaces

- dsp

7.3 Projekt/Projekt/button.cpp File Reference

```
#include "button.h"
```

7.4 Projekt/Projekt/button.h File Reference

```
#include "object.h"
```

Classes

- class dsp::Button

Namespaces

- dsp

Enumerations

- enum dsp::ButtonType { dsp::TEXT_BUTTON, dsp::NEXT_BUTTON, dsp::REFRESH_BUTTON }

7.5 Projekt/Projekt/caption.cpp File Reference

```
#include "caption.h"
```

7.6 Projekt/Projekt/caption.h File Reference

```
#include "main.h"
#include "object.h"
```

Classes

- class dsp::Caption

Namespaces

- dsp

7.7 Projekt/Projekt/cell.cpp File Reference

```
#include "main.h"
#include "cell.h"
#include "common.h"
```

7.8 Projekt/Projekt/cell.h File Reference

```
#include "main.h"
```

Classes

- class Cell

Enumerations

- enum State { HEALTHY, IMMUNE, INFECTED }

7.8.1 Enumeration Type Documentation

7.8.1.1 State

```
enum State
```

Staty komorek

Enumerator

HEALTHY	Zdrowa
IMMUNE	Odporna
INFECTED	Zarazona

7.9 Projekt/Projekt/common.cpp File Reference

```
#include "main.h"
#include "common.h"
#include "window.h"
#include "object.h"
#include "arrows.h"
#include "button.h"
#include "resource.h"
```

Functions

- void ErrorMsg (std::string error, std::string title)
- void getParams (int argc, char **argv, StartUpParams &params)
- unsigned int rand (unsigned int beginning, unsigned int end)
- void LoadResources (HINSTANCE &hInstance)

7.9.1 Function Documentation

7.9.1.1 ErrorMsg()

```
void ErrorMsg (
            std::string error,
            std::string title )
```

7.9.1.2 getParams()

```
void getParams (
            int ,
            char ** ,
            StartUpParams &  )
```

x - szerokosc okna y - wysokosc okna f - ramerate okna n - rozmiar okna i - czas trwania infekcji m - czas trwania odpornosci p - prawdopodobienstwo infekcjiWczytywanie parametrow startowych

7.9.1.3 LoadResources()

```
void LoadResources (
            HINSTANCE &  )
```

Wczytuje zasoby z plikow

7.9.1.4 rand()

```
unsigned int rand (
            unsigned int,
            unsigned int )
```

Zwraca losowa wartosc z danego przedzialu

7.10 Projekt/Projekt/common.h File Reference

Classes

- struct Point
- struct StartUpParams

Functions

- void ErrorMsg (std::string error, std::string title)
- void getParams (int, char $**$, StartUpParams &)
- unsigned int rand (unsigned int, unsigned int)
- void LoadResources (HINSTANCE &)
- template<class T >
  bool ConvertPtr (void $*$void_ptr, T $**$type_ptr)

7.10.1 Function Documentation

7.10.1.1 ConvertPtr()

```
template<class T >
bool ConvertPtr (
            void * void_ptr,
            T ** type_ptr )  [inline]
```

Konwertuje wskaznik generyczny na wskaznik danego typu

7.10.1.2 ErrorMsg()

```
void ErrorMsg (
            std::string error,
            std::string title )
```

7.10.1.3 getParams()

```
void getParams (
            int ,
            char ** ,
            StartUpParams &  )
```

x - szerokosc okna y - wysokosc okna f - ramerate okna n - rozmiar okna i - czas trwania infekcji m - czas trwania odpornosci p - prawdopodobienstwo infekcjiWczytywanie parametrow startowych

7.10.1.4 LoadResources()

```
void LoadResources (
            HINSTANCE &  )
```

Wczytuje zasoby z plikow

7.10.1.5 rand()

```
unsigned int rand (
            unsigned int,
            unsigned int )
```

Zwraca losowa wartosc z danego przedzialu

7.11 Projekt/Projekt/main.cpp File Reference

```
#include "main.h"
#include "window.h"
#include "program.h"
#include "settings.h"
#include "value.h"
```

Functions

- int WinMain (HINSTANCE hInstance, HINSTANCE hPrevInstance, LPSTR lpCmdLine, int nShowCmd)

7.11.1 Function Documentation

7.11.1.1 WinMain()

```
int WinMain (
            HINSTANCE hInstance,
            HINSTANCE hPrevInstance,
            LPSTR lpCmdLine,
            int nShowCmd )
```

7.12 Projekt/Projekt/main.h File Reference

```
#include <SFML/Graphics.hpp>
#include <Windows.h>
#include <iostream>
#include <string>
#include <cstdlib>
#include <vector>
```

7.13 Projekt/Projekt/object.cpp File Reference

```
#include "main.h"
#include "object.h"
```

7.14 Projekt/Projekt/object.h File Reference

```
#include "main.h"
#include "window.h"
#include "common.h"
```

Classes

- class dsp::Object

Namespaces

- dsp

Macros

- #define FONT_PROP 0.3f /∗<! Wspolczynnik proporcjonalnosci czcionki ∗/

7.14.1 Macro Definition Documentation

7.14.1.1 FONT_PROP

```
#define FONT_PROP 0.3f /*<!  Wspolczynnik proporcjonalnosci czcionki */
```

7.15 Projekt/Projekt/program.cpp File Reference

```
#include "main.h"
#include "program.h"
```

7.16 Projekt/Projekt/program.h File Reference

```
#include "main.h"
#include "window.h"
#include "cell.h"
#include "common.h"
#include "object.h"
#include "caption.h"
#include "value.h"
#include "arrows.h"
#include "button.h"
```

Classes

- struct dsp::GraphicCell
- class dsp::Program

Namespaces

- dsp

Enumerations

- enum dsp::Action { dsp::RESUMED = 0, dsp::PAUSED = 1, dsp::STEPPED = 2 }

Functions

- void dsp::onButtonRefreshClick (void *_this)
- void dsp::onButtonPauseClick (void *_this)
- void dsp::onButtonNextClick (void *_this)

7.17 Projekt/Projekt/resource.h File Reference

Macros

- #define IDI_ICON 108

7.17.1 Macro Definition Documentation

7.17.1.1 IDI_ICON

```
#define IDI_ICON 108
```

7.18 Projekt/Projekt/settings.cpp File Reference

```
#include "settings.h"
```

7.19 Projekt/Projekt/settings.h File Reference

```
#include "main.h"
#include "window.h"
#include "cell.h"
#include "common.h"
#include "object.h"
#include "caption.h"
#include "value.h"
#include "arrows.h"
#include "button.h"
```

Classes

- class dsp::Settings

Namespaces

- dsp

Functions

- void dsp::onButtonStartClick (void *)

7.20 Projekt/Projekt/value.cpp File Reference

```
#include "main.h"
#include "value.h"
```

7.21 Projekt/Projekt/value.h File Reference

```
#include "object.h"
```

Classes

- class dsp::Value

Namespaces

- dsp

7.22 Projekt/Projekt/window.cpp File Reference

```
#include "window.h"
```

7.23 Projekt/Projekt/window.h File Reference

```
#include "main.h"
#include "common.h"
```

Classes

- class dsp::Window

Namespaces

- dsp

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