Yuki

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Class Index

3.1 Class List

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4.1 File List

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Chapter 5

Namespace Documentation

5.1 yuki Namespace Reference

Namespaces

- namespace GameFont
- namespace YukiColor

Classes

- struct AttackInfo
- class BasicAttack
- class BubbleItem
- class Button
- class CircularSector
- struct Elementum
- class ElementumPanel
- struct ElementumReaction
- class FloatingBubble
- class Focusable
- class GranuleAttack
- class InfoBar
- class MainScene
- class Map
- class Menu
- class MilitaryBase
- class MouseEventProcessEngine
- class NormalSoldier
- class ResultScene
- class SeniorSoldier
- class SkillBar
- class SkillIcon
- class Soldier
- class StartupScene
- class StatusBar
- class Tile
- struct TileInfo
- class Touchable
- class TouchableObject
- class TouchableSprite
- class YukiScene

Enumerations

- enum class Direction {
  Down = 0 , Left , Right , Up ,
  Other }
- enum class Camp { Own , Enemy , Other }
- enum class ElementumType { None , Pyro , Hydro , Cyro }
- enum class ElementumReactionType { None , Evaporation , Freeze , Melt }
- enum class TileCategory {
  Building , Decor , Greenery , Land ,
  River , Road , Stones , Tree }

Functions

- auto isOppositeDirection (const Direction direction1, const Direction direction2)
- sf::Vector2f getVectorSpeed (const Direction direction, const float speed)
- ElementumReactionType getElementumReactionType (const Elementum &lhs, const Elementum &rhs)
- Elementum getReactedElementum (const Elementum &lhs, const Elementum &rhs)
- ElementumReaction getElementumReaction (const Elementum &lhs, const Elementum &rhs)
- std::unique_ptr< NormalSoldier > getNormalSoldier (Camp camp=Camp::Own)
- std::unique_ptr< Soldier > getSoldier (const std::string &name, Camp camp=Camp::Own)
- StatusBar getHealthBar (Camp camp=Camp::Own, const sf::Vector2f &size={30.f, 5.f})
- std::string getTileCategoryName (const TileCategory category)
- std::string getTileSrcName (const TileInfo &tile_info)
- sf::Vector2f getTileScaleFactor (const TileInfo &tile_info)

Variables

- constexpr auto kWindowWidth = 960
- constexpr auto kWindowHeight = 640
- constexpr auto kPi = 3.14159265358979323846f
- constexpr auto kSkillIconBorderDistance = 3.f

5.1.1 Enumeration Type Documentation

5.1.1.1 Camp

```
enum class yuki::Camp  [strong]
```

Enumerator

Own	
Enemy	
Other	

5.1.1.2 Direction

`enum class yuki::Direction [strong]`

Enumerator

Down	
Left	
Right	
Up	
Other	

5.1.1.3 ElementumReactionType

`enum class yuki::ElementumReactionType [strong]`

Enumerator

None	
Evaporation	
Freeze	
Melt	

5.1.1.4 ElementumType

`enum class yuki::ElementumType [strong]`

Enumerator

None	
Pyro	
Hydro	
Cyro	

5.1.1.5 TileCategory

`enum class yuki::TileCategory [strong]`

Enumerator

Building	

Enumerator

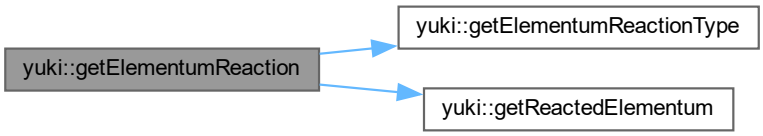
Decor	
Greenery	
Land	
River	
Road	
Stones	
Tree	

5.1.2 Function Documentation

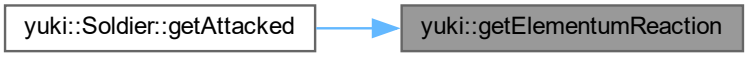
5.1.2.1 getElementumReaction()

```
ElementumReaction yuki::getElementumReaction (
            const Elementum & lhs,
            const Elementum & rhs )
```

Here is the call graph for this function:



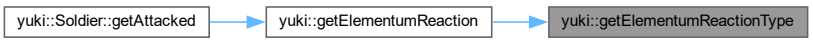
Here is the caller graph for this function:



5.1.2.2 getElementumReactionType()

```
ElementumReactionType yuki::getElementumReactionType (
            const Elementum & lhs,
            const Elementum & rhs )
```

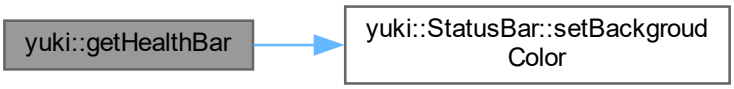
Here is the caller graph for this function:



5.1.2.3 getHealthBar()

```
StatusBar yuki::getHealthBar (
            Camp camp = Camp::Own,
            const sf::Vector2f & size = {30.f, 5.f} )
```

Here is the call graph for this function:

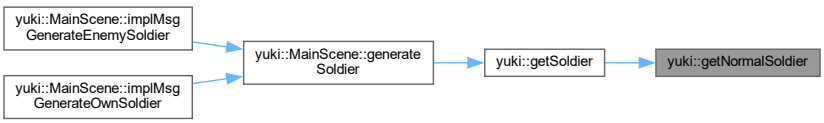


Here is the caller graph for this function:

5.1.2.4 getNormalSoldier()

```
std::unique_ptr< NormalSoldier > yuki::getNormalSoldier (
            Camp camp = Camp::Own )
```

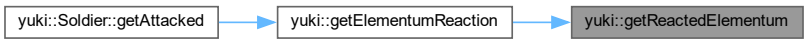
Here is the caller graph for this function:



5.1.2.5 getReactedElementum()

```
Elementum yuki::getReactedElementum (
            const Elementum & lhs,
            const Elementum & rhs )
```

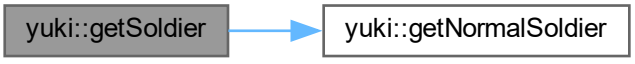
Here is the caller graph for this function:



5.1.2.6 getSoldier()

```
std::unique_ptr< Soldier > yuki::getSoldier (
            const std::string & name,
            Camp camp = Camp::Own )
```

Here is the call graph for this function:

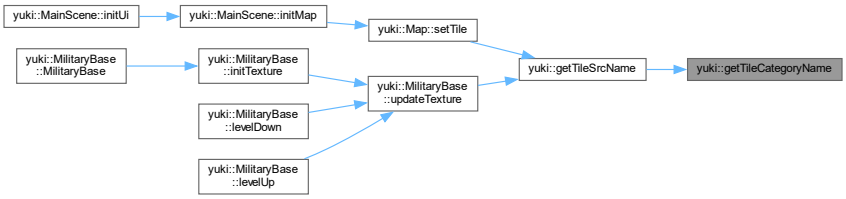


Here is the caller graph for this function:

5.1.2.7 getTileCategoryName()

```
std::string yuki::getTileCategoryName (
            const TileCategory category )
```

Here is the caller graph for this function:



5.1.2.8 getTileScaleFactor()

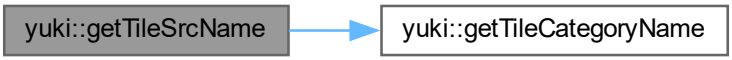
```
sf::Vector2f yuki::getTileScaleFactor (
            const TileInfo & tile_info )
```

Here is the caller graph for this function:

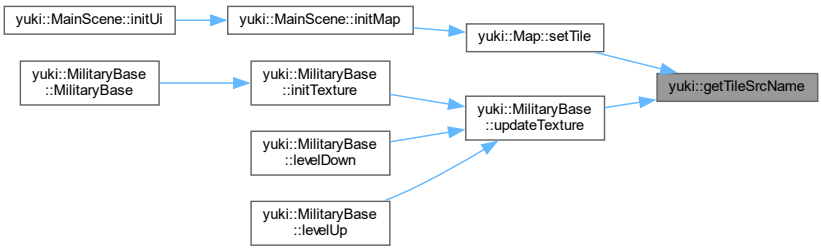
5.1.2.9 getTileSrcName()

```
std::string yuki::getTileSrcName (
            const TileInfo & tile_info )
```

Here is the call graph for this function:



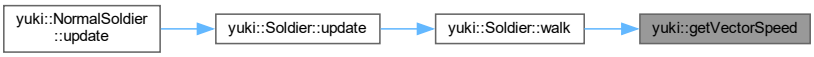
Here is the caller graph for this function:



5.1.2.10 getVectorSpeed()

```
sf::Vector2f yuki::getVectorSpeed (
            const Direction direction,
            const float speed )  [inline]
```

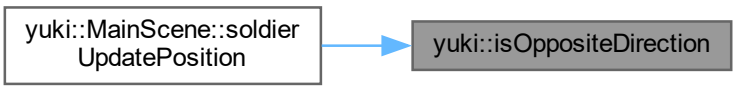
Here is the caller graph for this function:



5.1.2.11 isOppositeDirection()

```
auto yuki::isOppositeDirection (
            const Direction direction1,
            const Direction direction2 )  [inline]
```

Here is the caller graph for this function:



5.1.3 Variable Documentation

5.1.3.1 kPi

```
constexpr auto yuki::kPi = 3.14159265358979323846f  [constexpr]
```

5.1.3.2 kSkillIconBorderDistance

```
constexpr auto yuki::kSkillIconBorderDistance = 3.f  [constexpr]
```

5.1.3.3 kWindowHeight

```
constexpr auto yuki::kWindowHeight = 640  [constexpr]
```

5.1.3.4 kWindowWidth

```
constexpr auto yuki::kWindowWidth = 960  [constexpr]
```

5.2 yuki::GameFont Namespace Reference

Functions

- auto initFont (const sf::String &font_path)

Variables

- static const auto DefaultFont = initFont("assets/font/ARLRDBD.ttf")

5.2.1 Function Documentation

5.2.1.1 initFont()

```
auto yuki::GameFont::initFont (
            const sf::String & font_path )  [inline]
```

5.2.2 Variable Documentation

5.2.2.1 DefaultFont

```
const auto yuki::GameFont::DefaultFont = initFont("assets/font/ARLRDBD.ttf")  [static]
```

5.3 yuki::YukiColor Namespace Reference

Functions

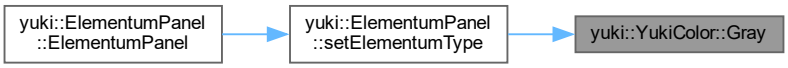
- static const sf::Color Transparent_50 (255, 255, 255, 128)
- static const sf::Color Transparent (255, 255, 255, 0)
- static const sf::Color Transparent_25 (255, 255, 255, 192)
- static const sf::Color Transparent_75 (255, 255, 255, 64)
- static const sf::Color Normal (255, 255, 255, 255)
- static const sf::Color Gray (128, 128, 128, 255)

5.3.1 Function Documentation

5.3.1.1 Gray()

```
static const sf::Color yuki::YukiColor::Gray (
            128 ,
            128 ,
            128 ,
            255  )  [static]
```

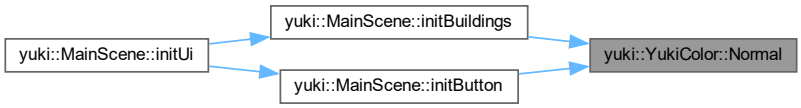
Here is the caller graph for this function:



5.3.1.2 Normal()

```
static const sf::Color yuki::YukiColor::Normal (
            255 ,
            255 ,
            255 ,
            255  )  [static]
```

Here is the caller graph for this function:



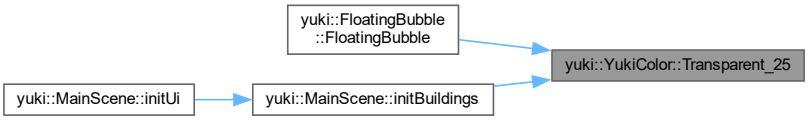
5.3.1.3 Transparent()

```
static const sf::Color yuki::YukiColor::Transparent (
            255 ,
            255 ,
            255 ,
            0  )  [static]
```

5.3.1.4 Transparent_25()

```
static const sf::Color yuki::YukiColor::Transparent_25 (
            255 ,
            255 ,
            255 ,
            192  )  [static]
```

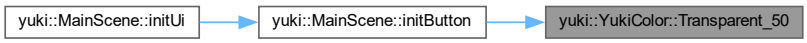
Here is the caller graph for this function:



5.3.1.5 Transparent_50()

```
static const sf::Color yuki::YukiColor::Transparent_50 (
            255 ,
            255 ,
            255 ,
            128  )  [static]
```

Here is the caller graph for this function:



5.3.1.6 Transparent_75()

```
static const sf::Color yuki::YukiColor::Transparent_75 (
            255 ,
            255 ,
            255 ,
            64  )  [static]
```

Chapter 6

Class Documentation

6.1 yuki::AttackInfo Struct Reference

```
#include <Attack.hpp>
```

Public Member Functions

- AttackInfo (ElementumType elementum_type=ElementumType::None, float elementum_level=0.0f, float damage=0.0f)

Public Attributes

- ElementumType elementum_type
- float elementum_level
- float damage

6.1.1 Constructor & Destructor Documentation

6.1.1.1 AttackInfo()

```
yuki::AttackInfo::AttackInfo (
            ElementumType elementum_type = ElementumType::None,
            float elementum_level = 0.0f,
            float damage = 0.0f )  [inline]
```

6.1.2 Member Data Documentation

6.1.2.1 damage

```
float yuki::AttackInfo::damage
```

6.1.2.2 elementum_level

```
float yuki::AttackInfo::elementum_level
```

6.1.2.3 elementum_type

```
ElementumType yuki::AttackInfo::elementum_type
```

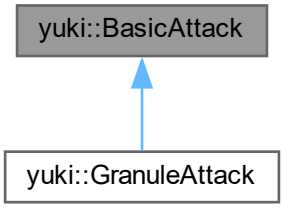
The documentation for this struct was generated from the following file:

- E:/Project/Yuki/include/Attack.hpp

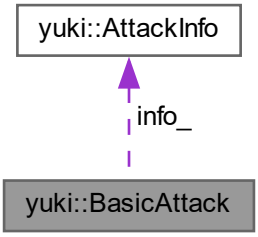
6.2 yuki::BasicAttack Class Reference

```
#include <Attack.hpp>
```

Inheritance diagram for yuki::BasicAttack:



Collaboration diagram for yuki::BasicAttack:



Public Member Functions

- BasicAttack ()=default
- BasicAttack (ElementumType elementum_type, float elementum_level, float damage)
- BasicAttack (const AttackInfo &info)
- const auto & getAttackInfo () const
- const auto getElementum () const
- const auto getDamage () const
- virtual ~BasicAttack ()

Protected Attributes

- AttackInfo info_

6.2.1 Constructor & Destructor Documentation

6.2.1.1 BasicAttack() [1/3]

```
yuki::BasicAttack::BasicAttack ( ) [default]
```

6.2.1.2 BasicAttack() [2/3]

```
yuki::BasicAttack::BasicAttack (
            ElementumType elementum_type,
            float elementum_level,
            float damage ) [inline]
```

6.2.1.3 BasicAttack() [3/3]

```
yuki::BasicAttack::BasicAttack (
            const AttackInfo & info ) [inline]
```

6.2.1.4 ~BasicAttack()

```
virtual yuki::BasicAttack::~BasicAttack ( ) [inline], [virtual]
```

6.2.2 Member Function Documentation

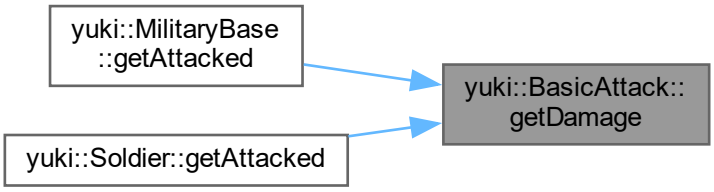
6.2.2.1 getAttackInfo()

```
const auto & yuki::BasicAttack::getAttackInfo ( ) const  [inline]
```

6.2.2.2 getDamage()

```
const auto yuki::BasicAttack::getDamage ( ) const  [inline]
```

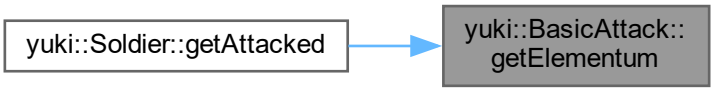
Here is the caller graph for this function:



6.2.2.3 getElementum()

```
const auto yuki::BasicAttack::getElementum ( ) const  [inline]
```

Here is the caller graph for this function:



6.2.3 Member Data Documentation

6.2.3.1 info_

```
AttackInfo yuki::BasicAttack::info_ [protected]
```

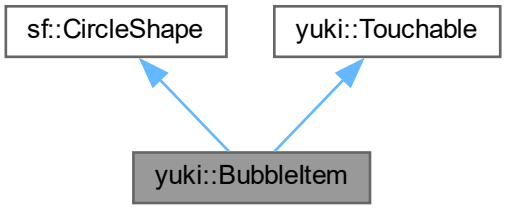
The documentation for this class was generated from the following file:

- E:/Project/Yuki/include/Attack.hpp

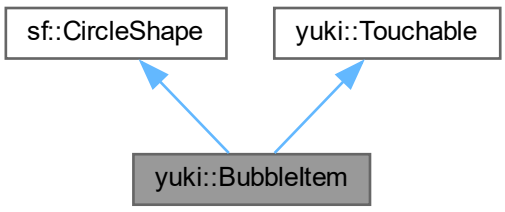
6.3 yuki::BubbleItem Class Reference

```
#include <FloatingBubble.hpp>
```

Inheritance diagram for yuki::BubbleItem:



Collaboration diagram for yuki::BubbleItem:



Public Member Functions

- BubbleItem ()=default
- BubbleItem (float radius)
- virtual ~BubbleItem ()=default
- void loadTexture (const std::string &path)

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Private Attributes

- sf::Texture texture_

Friends

- class FloatingBubble

Additional Inherited Members

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.3.1 Constructor & Destructor Documentation

6.3.1.1 BubbleItem() [1/2]

```
yuki::BubbleItem::BubbleItem ( ) [default]
```

6.3.1.2 BubbleItem() [2/2]

```
yuki::BubbleItem::BubbleItem (
            float radius )  [inline]
```

6.3.1.3 ~BubbleItem()

```
virtual yuki::BubbleItem::~BubbleItem ( )  [virtual], [default]
```

6.3.2 Member Function Documentation

6.3.2.1 loadTexture()

```
void yuki::BubbleItem::loadTexture (
            const std::string & path )  [inline]
```

6.3.3 Friends And Related Function Documentation

6.3.3.1 FloatingBubble

```
friend class FloatingBubble  [friend]
```

6.3.4 Member Data Documentation

6.3.4.1 texture_

```
sf::Texture yuki::BubbleItem::texture_  [private]
```

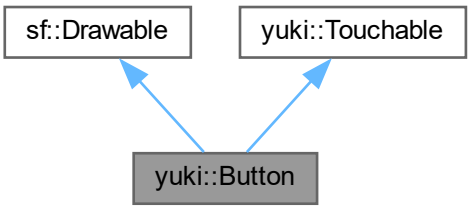
The documentation for this class was generated from the following file:

- E:/Project/Yuki/include/FloatingBubble.hpp

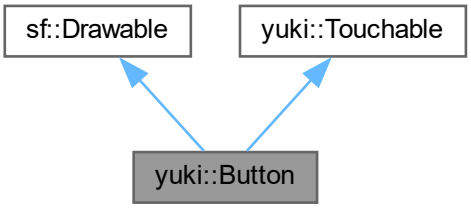
6.4 yuki::Button Class Reference

```
#include <Button.hpp>
```

Inheritance diagram for yuki::Button:



Collaboration diagram for yuki::Button:



Public Types

- enum class Alignment { Left , Center , Right }

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Public Member Functions

- Button ()
- Button (const sf::Vector2f &size)
- Button (const sf::String &text, const Alignment alignment=Alignment::Center)
- Button (const sf::Vector2f &size, const sf::String &text, const Alignment Alignment=Alignment::Center)
- virtual ~Button ()
- void setSize (const sf::Vector2f &size)
- const auto getSize () const
- void setPosition (const sf::Vector2f &position)
- void setPosition (float x, float y)
- const auto getPosition () const
- void setFillColor (const sf::Color &color)
- void setOutlineColor (const sf::Color &color)
- void setOutlineThickness (float thickness)
- void setOrigin (const sf::Vector2f &origin)
- const auto getOrigin () const
- void setTexture (const sf::Texture *texture)
- const auto getTexture () const
- void setTextureRect (const sf::IntRect &rect)
- void setString (const sf::String &text)
- const auto getString () const
- void setTextSize (unsigned int size)
- void setTextFont (const sf::Font &font)
- void setTextFillColor (const sf::Color &color)
- void setTextOutlineColor (const sf::Color &color)
- void setTextOutlineThickness (float thickness)
- void setTextAlignment (Alignment alignment)
- void autoAdjustTextSize ()
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Protected Member Functions

- void adjustTextPosition ()

Protected Attributes

- sf::RectangleShape shape_
- sf::Text text_
- Alignment alignment_ = Alignment::Center

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.4.1 Member Enumeration Documentation

6.4.1.1 Alignment

```
enum class yuki::Button::Alignment  [strong]
```

Enumerator

Left	
Center	
Right	

6.4.2 Constructor & Destructor Documentation

6.4.2.1 Button() [1/4]

```
Button::Button ( )
```

6.4.2.2 Button() [2/4]

```
yuki::Button::Button (
            const sf::Vector2f & size )
```

6.4.2.3 Button() [3/4]

```
yuki::Button::Button (
            const sf::String & text,
            const Alignment alignment = Alignment::Center )
```

6.4.2.4 Button() [4/4]

```
yuki::Button::Button (
            const sf::Vector2f & size,
            const sf::String & text,
            const Alignment Alignment = Alignment::Center )
```

6.4.2.5 ~Button()

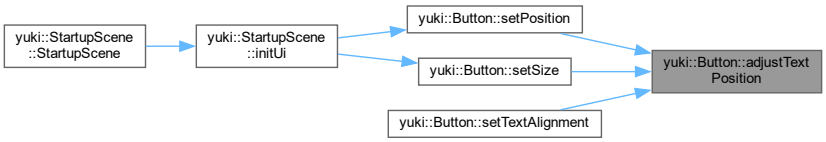
```
Button::~Button ( )  [virtual]
```

6.4.3 Member Function Documentation

6.4.3.1 adjustTextPosition()

```
void Button::adjustTextPosition ( )  [protected]
```

Here is the caller graph for this function:



6.4.3.2 autoAdjustTextSize()

```
void Button::autoAdjustTextSize ( )
```

6.4.3.3 draw()

```
void Button::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [virtual]
```

6.4.3.4 getOrigin()

```
const auto yuki::Button::getOrigin ( ) const  [inline]
```

6.4.3.5 getPosition()

```
const auto yuki::Button::getPosition ( ) const  [inline]
```

6.4.3.6 getSize()

```
const auto yuki::Button::getSize ( ) const  [inline]
```

6.4.3.7 getString()

```
const auto yuki::Button::getString ( ) const  [inline]
```

6.4.3.8 getTexture()

```
const auto yuki::Button::getTexture ( ) const  [inline]
```

6.4.3.9 setFillColor()

```
void yuki::Button::setFillColor (
            const sf::Color & color )  [inline]
```

Here is the caller graph for this function:

6.4.3.10 setOrigin()

```
void yuki::Button::setOrigin (
            const sf::Vector2f & origin )  [inline]
```

Here is the caller graph for this function:

6.4.3.11 setOutlineColor()

```
void yuki::Button::setOutlineColor (
            const sf::Color & color )  [inline]
```

Here is the caller graph for this function:

6.4.3.12 setOutlineThickness()

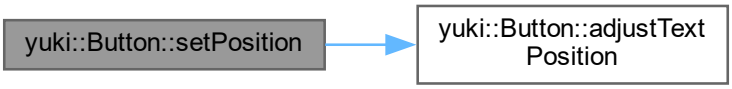
```
void yuki::Button::setOutlineThickness (
            float thickness )  [inline]
```

Here is the caller graph for this function:

6.4.3.13 setPosition() [1/2]

```
void yuki::Button::setPosition (
            const sf::Vector2f & position )  [inline]
```

Here is the call graph for this function:



Here is the caller graph for this function:

6.4.3.14 setPosition() [2/2]

```
void yuki::Button::setPosition (
            float x,
            float y )  [inline]
```

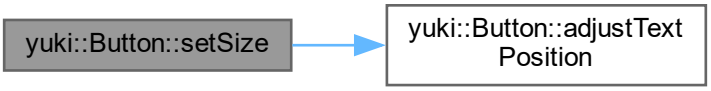
Here is the call graph for this function:

Here is the caller graph for this function:

6.4.3.15 setSize()

```
void yuki::Button::setSize (
            const sf::Vector2f & size )  [inline]
```

Here is the call graph for this function:



Here is the caller graph for this function:

6.4.3.16 setString()

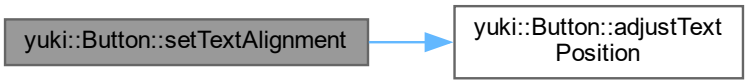
```
void yuki::Button::setString (
            const sf::String & text )  [inline]
```

Here is the caller graph for this function:

6.4.3.17 setTextAlignment()

```
void yuki::Button::setTextAlignment (
            Alignment alignment )  [inline]
```

Here is the call graph for this function:



6.4.3.18 setTextFillColor()

```
void yuki::Button::setTextFillColor (
            const sf::Color & color )  [inline]
```

Here is the caller graph for this function:

6.4.3.19 setTextFont()

```
void yuki::Button::setTextFont (
            const sf::Font & font )  [inline]
```

6.4.3.20 setTextOutlineColor()

```
void yuki::Button::setTextOutlineColor (
            const sf::Color & color )  [inline]
```

6.4.3.21 setTextOutlineThickness()

```
void yuki::Button::setTextOutlineThickness (
            float thickness )  [inline]
```

6.4.3.22 setTextSize()

```
void yuki::Button::setTextSize (
            unsigned int size )  [inline]
```

6.4.3.23 setTexture()

```
void yuki::Button::setTexture (
            const sf::Texture * texture )  [inline]
```

6.4.3.24 setTextureRect()

```
void yuki::Button::setTextureRect (
            const sf::IntRect & rect )  [inline]
```

6.4.4 Member Data Documentation

6.4.4.1 alignment_

```
Alignment yuki::Button::alignment_ = Alignment::Center  [protected]
```

6.4.4.2 shape_

```
sf::RectangleShape yuki::Button::shape_  [protected]
```

6.4.4.3 text_

```
sf::Text yuki::Button::text_  [protected]
```

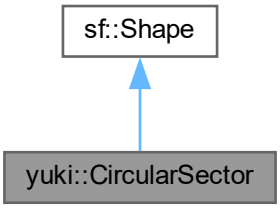
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/Button.hpp
- E:/Project/Yuki/src/Button.cpp

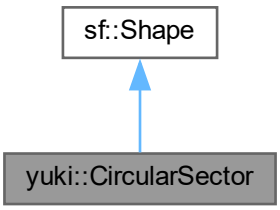
6.5 yuki::CircularSector Class Reference

```
#include <CircularSector.hpp>
```

Inheritance diagram for yuki::CircularSector:



Collaboration diagram for yuki::CircularSector:



Public Member Functions

- CircularSector (const sf::Vector2f &center, float radius, int start_angle, int end_angle)
- void setCenter (const sf::Vector2f &center)
- void setRadius (float radius)
- void setStartAngle (float start_angle)
- void setEndAngle (float end_angle)
- const sf::Vector2f & getCenter () const
- sf::Vector2f getPoint (std::size_t index) const override
- std::size_t getPointCount () const override

Private Attributes

- sf::Vector2f center_
- float radius_
- int start_angle_
- int end_angle_

6.5.1 Constructor & Destructor Documentation

6.5.1.1 CircularSector()

```
yuki::CircularSector::CircularSector (
            const sf::Vector2f & center,
            float radius,
            int start_angle,
            int end_angle )  [inline]
```

6.5.2 Member Function Documentation

6.5.2.1 getCenter()

```
const sf::Vector2f & yuki::CircularSector::getCenter ( ) const  [inline]
```

6.5.2.2 getPoint()

```
Vector2f CircularSector::getPoint (
            std::size_t index ) const  [override]
```

6.5.2.3 getPointCount()

```
std::size_t yuki::CircularSector::getPointCount ( ) const  [inline], [override]
```

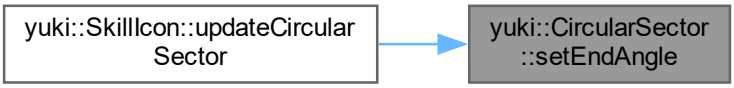
6.5.2.4 setCenter()

```
void yuki::CircularSector::setCenter (
            const sf::Vector2f & center )  [inline]
```

6.5.2.5 setEndAngle()

```
void yuki::CircularSector::setEndAngle (
            float end_angle )  [inline]
```

Here is the caller graph for this function:



6.5.2.6 setRadius()

```
void yuki::CircularSector::setRadius (
            float radius )  [inline]
```

6.5.2.7 setStartAngle()

```
void yuki::CircularSector::setStartAngle (
            float start_angle )  [inline]
```

6.5.3 Member Data Documentation

6.5.3.1 center_

```
sf::Vector2f yuki::CircularSector::center_ [private]
```

6.5.3.2 end_angle_

```
int yuki::CircularSector::end_angle_ [private]
```

6.5.3.3 radius_

```
float yuki::CircularSector::radius_ [private]
```

6.5.3.4 start_angle_

```
int yuki::CircularSector::start_angle_ [private]
```

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

- E:/Project/Yuki/include/CircularSector.hpp
- E:/Project/Yuki/src/CircularSector.cpp

6.6 yuki::Elementum Struct Reference

```
#include <Elementum.hpp>
```

Public Member Functions

- Elementum (ElementumType type=ElementumType::None, float level=0.0f)

Public Attributes

- ElementumType type
- float level

6.6.1 Constructor & Destructor Documentation

6.6.1.1 Elementum()

```
yuki::Elementum::Elementum (
            ElementumType type = ElementumType::None,
            float level = 0.0f )  [inline]
```

6.6.2 Member Data Documentation

6.6.2.1 level

```
float yuki::Elementum::level
```

6.6.2.2 type

```
ElementumType yuki::Elementum::type
```

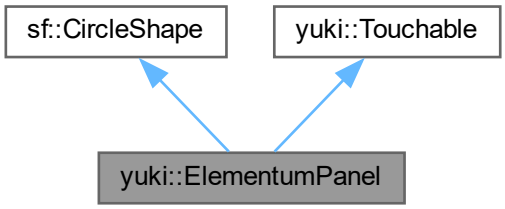
The documentation for this struct was generated from the following file:

- E:/Project/Yuki/include/Elementum.hpp

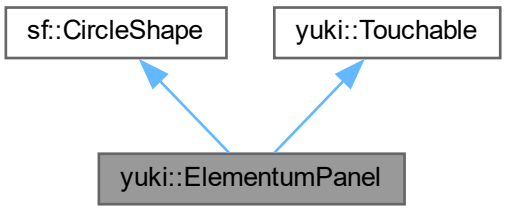
6.7 yuki::ElementumPanel Class Reference

```
#include <ElementumPanel.hpp>
```

Inheritance diagram for yuki::ElementumPanel:



Collaboration diagram for yuki::ElementumPanel:



Public Member Functions

- ElementumPanel (ElementumType type=ElementumType::Pyro)
- void activate ()
- void deactivate ()
- void setElementumType (ElementumType type)
- constexpr auto getElementumType () const

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Private Attributes

- ElementumType elementum_type_

Additional Inherited Members

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Touchable

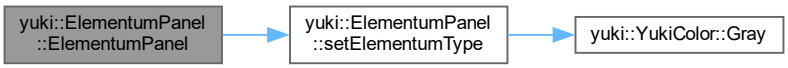
- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.7.1 Constructor & Destructor Documentation

6.7.1.1 ElementumPanel()

```
yuki::ElementumPanel::ElementumPanel (
            ElementumType type = ElementumType::Pyro )  [inline]
```

Here is the call graph for this function:



6.7.2 Member Function Documentation

6.7.2.1 activate()

```
void ElementumPanel::activate ( )
```

6.7.2.2 deactivate()

```
void ElementumPanel::deactivate ( )
```

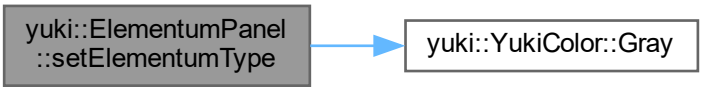
6.7.2.3 getElementumType()

```
constexpr auto yuki::ElementumPanel::getElementumType ( ) const  [inline], [constexpr]
```

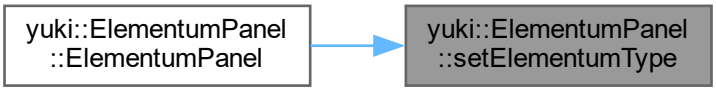
6.7.2.4 setElementumType()

```
void ElementumPanel::setElementumType (
            ElementumType type )
```

Here is the call graph for this function:



Here is the caller graph for this function:



6.7.3 Member Data Documentation

6.7.3.1 elementum_type_

```
ElementumType yuki::ElementumPanel::elementum_type_  [private]
```

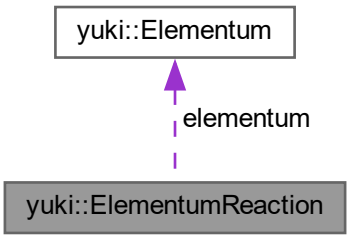
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/ElementumPanel.hpp
- E:/Project/Yuki/src/ElementumPanel.cpp

6.8 yuki::ElementumReaction Struct Reference

```
#include <Elementum.hpp>
```

Collaboration diagram for yuki::ElementumReaction:



Public Attributes

- ElementumReactionType type
- Elementum elementum

6.8.1 Member Data Documentation

6.8.1.1 elementum

```
Elementum yuki::ElementumReaction::elementum
```

6.8.1.2 type

```
ElementumReactionType yuki::ElementumReaction::type
```

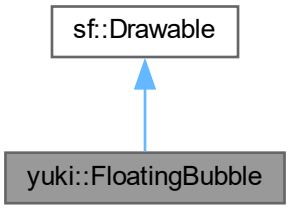
The documentation for this struct was generated from the following file:

- E:/Project/Yuki/include/Elementum.hpp

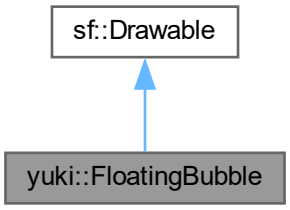
6.9 yuki::FloatingBubble Class Reference

```
#include <FloatingBubble.hpp>
```

Inheritance diagram for yuki::FloatingBubble:



Collaboration diagram for yuki::FloatingBubble:



Public Member Functions

- FloatingBubble (const sf::Vector2f &position, const float distribute_radius, const int bubble_num, const float bubble_radius=10.f, const Direction direction=Direction::Down)
- FloatingBubble ()=default
- void setPosition (const sf::Vector2f &position)
- const auto getPosition () const
- void setBubbleRadius (const float radius)
- const auto getBubbleRadius () const
- int getIndexByPosition (const sf::Vector2f &position) const
- auto & getBubbleItems ()
- const auto & getBubbleItems () const
- void draw (sf::RenderTarget &target, sf::RenderStates states) const override

Private Member Functions

- sf::Vector2f getBubblePosition (const int index)
- void updateBubblesPosition ()

Private Attributes

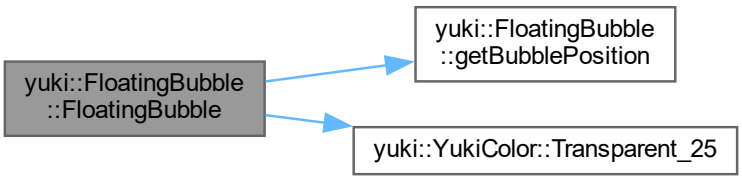
- sf::Vector2f position_
- float distribute_radius_
- int bubble_num_
- float bubble_radius_
- Direction direction_
- std::vector< std::unique_ptr< BubbleItem > > bubbles_

6.9.1 Constructor & Destructor Documentation

6.9.1.1 FloatingBubble() [1/2]

```
yuki::FloatingBubble::FloatingBubble (
            const sf::Vector2f & position,
            const float distribute_radius,
            const int bubble_num,
            const float bubble_radius = 10.f,
            const Direction direction = Direction::Down )  [inline]
```

Here is the call graph for this function:



6.9.1.2 FloatingBubble() [2/2]

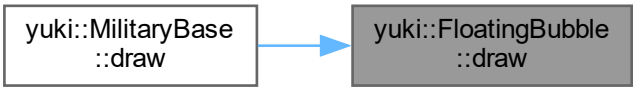
```
yuki::FloatingBubble::FloatingBubble ( )  [default]
```

6.9.2 Member Function Documentation

6.9.2.1 draw()

```
void FloatingBubble::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override]
```

Here is the caller graph for this function:



6.9.2.2 getBubbleItems() [1/2]

```
auto & yuki::FloatingBubble::getBubbleItems ( )  [inline]
```

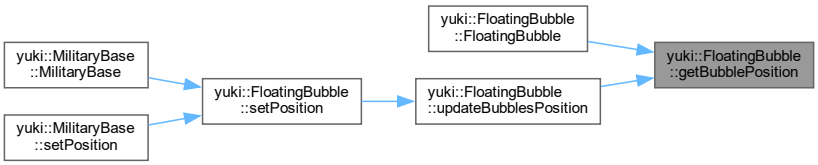
6.9.2.3 getBubbleItems() [2/2]

```
const auto & yuki::FloatingBubble::getBubbleItems ( ) const  [inline]
```

6.9.2.4 getBubblePosition()

```
Vector2f FloatingBubble::getBubblePosition (
            const int index )  [private]
```

Here is the caller graph for this function:



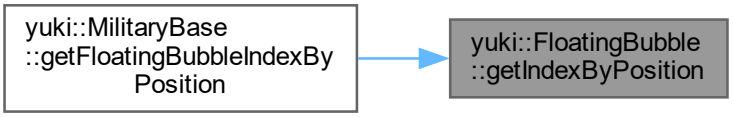
6.9.2.5 getBubbleRadius()

```
const auto yuki::FloatingBubble::getBubbleRadius ( ) const  [inline]
```

6.9.2.6 getIndexByPosition()

```
int FloatingBubble::getIndexByPosition (
            const sf::Vector2f & position ) const
```

Here is the caller graph for this function:



6.9.2.7 getPosition()

```
const auto yuki::FloatingBubble::getPosition ( ) const  [inline]
```

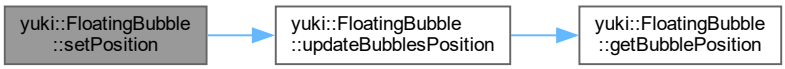
6.9.2.8 setBubbleRadius()

```
void yuki::FloatingBubble::setBubbleRadius (
            const float radius )  [inline]
```

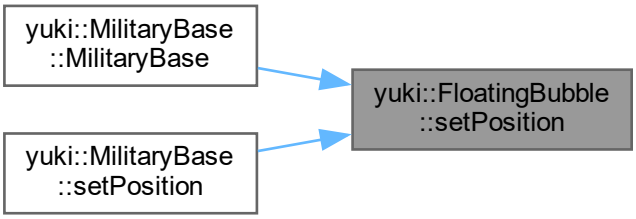
6.9.2.9 setPosition()

```
void yuki::FloatingBubble::setPosition (
            const sf::Vector2f & position )  [inline]
```

Here is the call graph for this function:



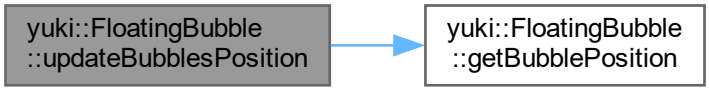
Here is the caller graph for this function:



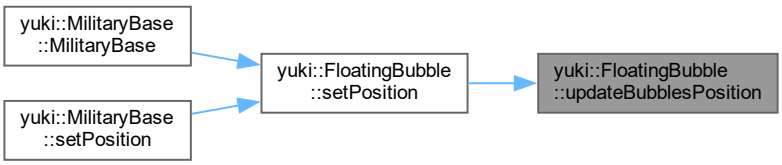
6.9.2.10 updateBubblesPosition()

```
void FloatingBubble::updateBubblesPosition ( )  [private]
```

Here is the call graph for this function:



Here is the caller graph for this function:



6.9.3 Member Data Documentation

6.9.3.1 bubble_num_

```
int yuki::FloatingBubble::bubble_num_ [private]
```

6.9.3.2 bubble_radius_

```
float yuki::FloatingBubble::bubble_radius_ [private]
```

6.9.3.3 bubbles_

```
std::vector<std::unique_ptr<BubbleItem> > yuki::FloatingBubble::bubbles_ [private]
```

6.9.3.4 direction_

```
Direction yuki::FloatingBubble::direction_ [private]
```

6.9.3.5 distribute_radius_

```
float yuki::FloatingBubble::distribute_radius_ [private]
```

6.9.3.6 position_

```
sf::Vector2f yuki::FloatingBubble::position_ [private]
```

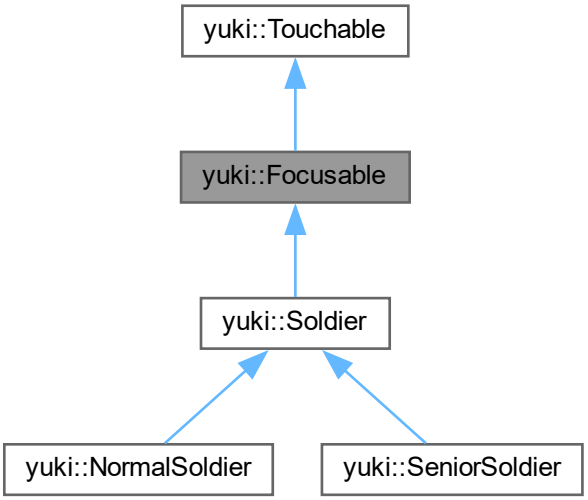
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/FloatingBubble.hpp
- E:/Project/Yuki/src/FloatingBubble.cpp

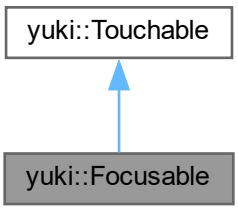
6.10 yuki::Focusable Class Reference

```
#include <InteractiveObject.hpp>
```

Inheritance diagram for yuki::Focusable:



Collaboration diagram for yuki::Focusable:



Public Types

- using Callback = std::function< void(sf::Event e)>

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Public Member Functions

- Focusable ()=default
- virtual ~Focusable ()
- virtual void onFocus (sf::Event e)
- virtual void onUnfocus (sf::Event e)
- constexpr auto isFocused () const
- void bindFocus (Callback callback)
- void bindUnfocus (Callback callback)
- void updateStatus (sf::Event event)

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Private Attributes

- bool is_focused_ = false
- Callback on_focusCallback_ = [ ](sf::Event) {}
- Callback on_unfocusCallback_ = [ ](sf::Event) {}

Additional Inherited Members

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.10.1 Member Typedef Documentation

6.10.1.1 Callback

```
using yuki::Focusable::Callback = std::function<void(sf::Event e)>
```

6.10.2 Constructor & Destructor Documentation

6.10.2.1 Focusable()

```
yuki::Focusable::Focusable ( )  [default]
```

6.10.2.2 ~Focusable()

```
virtual yuki::Focusable::~Focusable ( )  [inline], [virtual]
```

6.10.3 Member Function Documentation

6.10.3.1 bindFocus()

```
void yuki::Focusable::bindFocus (
            Callback callback )  [inline]
```

6.10.3.2 bindUnfocus()

```
void yuki::Focusable::bindUnfocus (
            Callback callback )  [inline]
```

6.10.3.3 isFocused()

```
constexpr auto yuki::Focusable::isFocused ( ) const  [inline], [constexpr]
```

6.10.3.4 onFocus()

```
virtual void yuki::Focusable::onFocus (
            sf::Event e )  [inline], [virtual]
```

Here is the caller graph for this function:

6.10.3.5 onUnfocus()

```
virtual void yuki::Focusable::onUnfocus (
            sf::Event e )  [inline], [virtual]
```

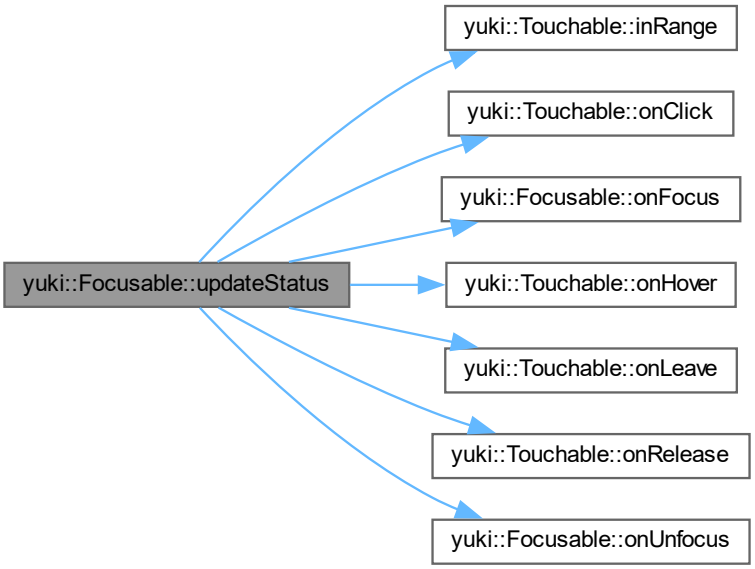
Here is the caller graph for this function:

6.10.3.6 updateStatus()

```
void Focusable::updateStatus (
            sf::Event event )  [virtual]
```

Reimplemented from yuki::Touchable.

Here is the call graph for this function:



6.10.4 Member Data Documentation

6.10.4.1 is_focused_

```
bool yuki::Focusable::is_focused_ = false  [private]
```

6.10.4.2 on_focusCallback_

```
Callback yuki::Focusable::on_focusCallback_ = [](sf::Event) {}  [private]
```

6.10.4.3 on_unfocusCallback_

```
Callback yuki::Focusable::on_unfocusCallback_ = [](sf::Event) {}  [private]
```

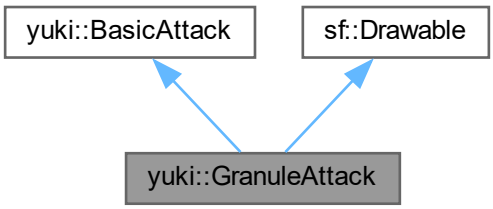
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/InteractiveObject.hpp
- E:/Project/Yuki/src/InteractiveObject.cpp

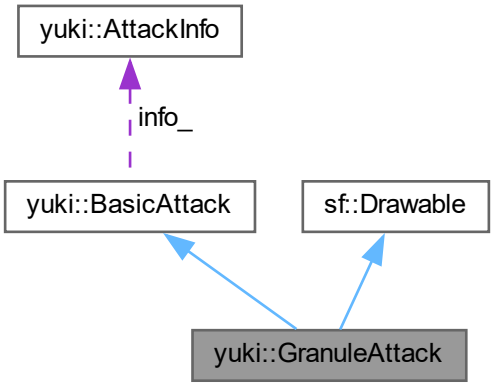
6.11 yuki::GranuleAttack Class Reference

```
#include <Attack.hpp>
```

Inheritance diagram for yuki::GranuleAttack:



Collaboration diagram for yuki::GranuleAttack:



Public Member Functions

- GranuleAttack ()
- GranuleAttack (const sf::Vector2f &position, float speed, Direction direction, const AttackInfo &attck_info)
- virtual ~GranuleAttack ()
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- virtual void update ()
- auto getPosition () const

Public Member Functions inherited from yuki::BasicAttack

- BasicAttack ()=default
- BasicAttack (ElementumType elementum_type, float elementum_level, float damage)
- BasicAttack (const AttackInfo &info)
- const auto & getAttackInfo () const
- const auto getElementum () const
- const auto getDamage () const
- virtual ~BasicAttack ()

Protected Member Functions

- void updateGranule ()

Protected Attributes

- sf::CircleShape granule_
- float speed_
- Direction direction_

Protected Attributes inherited from yuki::BasicAttack

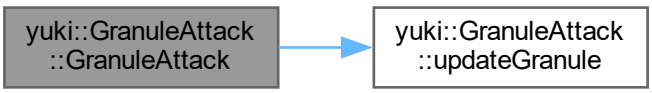
- AttackInfo info_

6.11.1 Constructor & Destructor Documentation

6.11.1.1 GranuleAttack() [1/2]

```
yuki::GranuleAttack::GranuleAttack ( ) [inline]
```

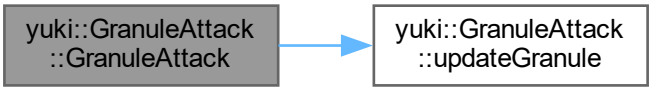
Here is the call graph for this function:



6.11.1.2 GranuleAttack() [2/2]

```
yuki::GranuleAttack::GranuleAttack (
            const sf::Vector2f & position,
            float speed,
            Direction direction,
            const AttackInfo & attck_info )  [inline]
```

Here is the call graph for this function:



6.11.1.3 ~GranuleAttack()

```
virtual yuki::GranuleAttack::~GranuleAttack ( )  [inline], [virtual]
```

6.11.2 Member Function Documentation

6.11.2.1 draw()

```
void GranuleAttack::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [virtual]
```

6.11.2.2 getPosition()

```
auto yuki::GranuleAttack::getPosition ( ) const  [inline]
```

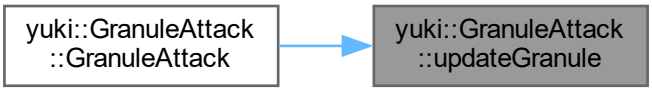
6.11.2.3 update()

```
void GranuleAttack::update ( )  [virtual]
```

6.11.2.4 updateGranule()

```
void GranuleAttack::updateGranule ( ) [protected]
```

Here is the caller graph for this function:



6.11.3 Member Data Documentation

6.11.3.1 direction_

```
Direction yuki::GranuleAttack::direction_ [protected]
```

6.11.3.2 granule_

```
sf::CircleShape yuki::GranuleAttack::granule_ [protected]
```

6.11.3.3 speed_

```
float yuki::GranuleAttack::speed_ [protected]
```

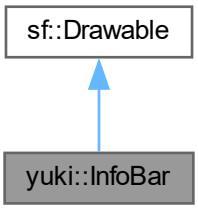
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/Attack.hpp
- E:/Project/Yuki/src/Attack.cpp

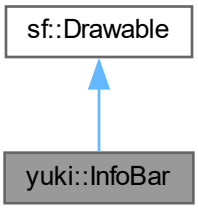
6.12 yuki::InfoBar Class Reference

```
#include <InfoBar.hpp>
```

Inheritance diagram for yuki::InfoBar:



Collaboration diagram for yuki::InfoBar:



Public Member Functions

- InfoBar ()
- InfoBar (const sf::Vector2f &position, const sf::Vector2f &size=sf::Vector2f(256.f, 32.f))
- virtual ~InfoBar ()=default
- void setMoney (const int money)
- void setPosition (const sf::Vector2f &position)
- const auto & getPosition () const
- void setSize (const sf::Vector2f &size)
- const auto & getSize () const

Private Member Functions

- void initTextures ()
- void initUi ()
- void draw (sf::RenderTarget &target, sf::RenderStates states) const override

Private Attributes

- sf::RectangleShape background_
- sf::Texture background_texture_
- sf::Sprite icon_money_
- sf::Texture icon_money_texture_
- sf::Text text_money_

Static Private Attributes

- static constexpr float kIconSize = 32.f
- static constexpr float kMoneyIconOffset = 10.f
- static constexpr float kMoneyTextOffset = 60.f

6.12.1 Constructor & Destructor Documentation

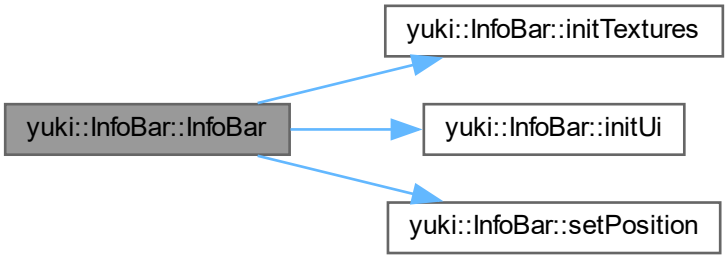
6.12.1.1 InfoBar() [1/2]

```
yuki::InfoBar::InfoBar ( ) [inline]
```

6.12.1.2 InfoBar() [2/2]

```
InfoBar::InfoBar (
            const sf::Vector2f & position,
            const sf::Vector2f & size = sf::Vector2f(256.f, 32.f) )
```

Here is the call graph for this function:



6.12.1.3 ~InfoBar()

```
virtual yuki::InfoBar::~InfoBar ( )  [virtual], [default]
```

6.12.2 Member Function Documentation

6.12.2.1 draw()

```
void InfoBar::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [private]
```

6.12.2.2 getPosition()

```
const auto & yuki::InfoBar::getPosition ( ) const  [inline]
```

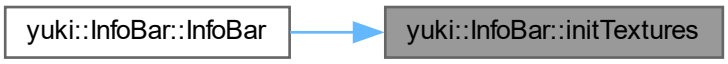
6.12.2.3 getSize()

```
const auto & yuki::InfoBar::getSize ( ) const  [inline]
```

6.12.2.4 initTextures()

```
void InfoBar::initTextures ( )  [private]
```

Here is the caller graph for this function:



6.12.2.5 initUi()

```
void InfoBar::initUi ( ) [private]
```

Here is the caller graph for this function:

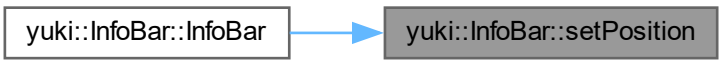
6.12.2.6 setMoney()

```
void InfoBar::setMoney (
            const int money )
```

6.12.2.7 setPosition()

```
void InfoBar::setPosition (
            const sf::Vector2f & position )
```

Here is the caller graph for this function:



6.12.2.8 setSize()

```
void yuki::InfoBar::setSize (
            const sf::Vector2f & size ) [inline]
```

6.12.3 Member Data Documentation

6.12.3.1 background_

```
sf::RectangleShape yuki::InfoBar::background_  [private]
```

6.12.3.2 background_texture_

```
sf::Texture yuki::InfoBar::background_texture_  [private]
```

6.12.3.3 icon_money_

```
sf::Sprite yuki::InfoBar::icon_money_  [private]
```

6.12.3.4 icon_money_texture_

```
sf::Texture yuki::InfoBar::icon_money_texture_  [private]
```

6.12.3.5 kIconSize

```
constexpr float yuki::InfoBar::kIconSize = 32.f  [static], [constexpr], [private]
```

6.12.3.6 kMoneyIconOffset

```
constexpr float yuki::InfoBar::kMoneyIconOffset = 10.f  [static], [constexpr], [private]
```

6.12.3.7 kMoneyTextOffset

```
constexpr float yuki::InfoBar::kMoneyTextOffset = 60.f  [static], [constexpr], [private]
```

6.12.3.8 text_money_

```
sf::Text yuki::InfoBar::text_money_ [private]
```

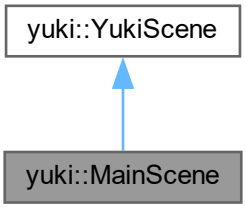
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/InfoBar.hpp
- E:/Project/Yuki/src/InfoBar.cpp

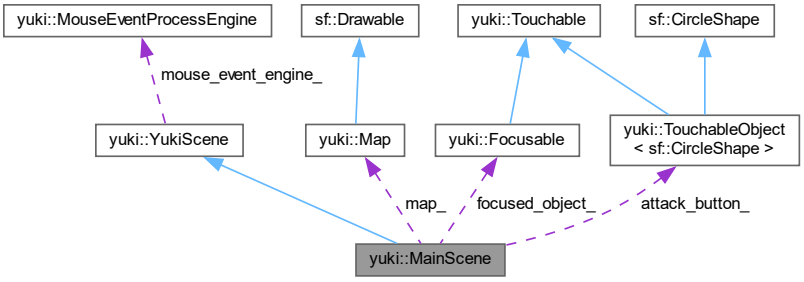
6.13 yuki::MainScene Class Reference

```
#include <MainScene.hpp>
```

Inheritance diagram for yuki::MainScene:



Collaboration diagram for yuki::MainScene:



Public Types

- enum class Message {
  GenerateOwnSoldier , GenerateEnemySoldier , OwnBaseLevelUp , FocusedObjectChanged ,
  OwnWin , EnemyWin }
- enum class ObjectType {
  OwnSoldier , EnemySoldier , OwnBase , EnemyBase ,
  None }

Public Types inherited from yuki::YukiScene

- enum class Notify { None , End }

Public Member Functions

- MainScene (sf::RenderWindow &window)
- virtual ~MainScene ()
- void sendMessage (const Message &message)

Public Member Functions inherited from yuki::YukiScene

- YukiScene (sf::RenderWindow &window)
- virtual ~YukiScene ()
- virtual int show ()

Private Types

- using GranuleAttackWithSenderInfo = std::pair< Soldier *, GranuleAttack >

Private Member Functions

- void increaseOwnMoney (int money)
- void decreaseOwnMoney (int money)
- void increaseEnemyMoney (int money)
- void decreaseEnemyMoney (int money)
- void initUi ()
- void initMap ()
- void initBuildings ()
- void initInfoHint ()
- void setMoney (int money, Camp camp=Camp::Own)
- void increaseMoney (int money, Camp camp=Camp::Own)
- void decreaseMoney (int money, Camp camp=Camp::Own)
- std::unique_ptr< yuki::Soldier > generateSoldier (const std::string &name, Camp camp=Camp::Own)
- void eraseDeadSoldier ()
- void soldierUpdatePosition ()
- void updateAttacks ()
- void enemyBaseMakeDecision ()
- sf::Vector2f coordinateToPixel (const sf::Vector2i &coordinate)
- sf::Vector2i pixelToCoordinate (const sf::Vector2f &pixel_position)
- void registerGranuleAttack (Soldier *soldier, const GranuleAttack &attack)
- void initElementumPanel ()
- void setOwnCurrentElementumType (ElementumType type)
- void setEnemyCurrentElementumType (ElementumType type)
- void initButton ()
- void implMsgGenerateOwnSoldier ()
- void implMsgGenerateEnemySoldier ()
- void normalSoldierAttack (NormalSoldier *attacker)

Private Attributes

- Map map_
- std::unique_ptr< MilitaryBase > own_base_
- std::unique_ptr< MilitaryBase > enemy_base_
- std::unique_ptr< InfoBar > info_bar_
- std::unique_ptr< SkillBar< 3 > > skill_bar_
- int own_money_
- int enemy_money_
- std::vector< std::unique_ptr< Soldier > > soldiers_
- std::vector< std::unique_ptr< Soldier > > enemies_
- Focusable * focused_object_
- ObjectType focused_object_type_
- std::vector< GranuleAttackWithSenderInfo > granule_attacks_
- std::array< ElementumPanel, 3 > elementum_panels_
- ElementumType own_current_elementum_type_
- ElementumType enemy_current_elementum_type_
- TouchableObject< sf::CircleShape > attack_button_
- sf::Texture attack_button_texture_
- std::queue< Message > message_queue_
- sf::Text debug_text_

Static Private Attributes

- static const sf::Vector2i kOwnSoldierBirthCoordinate = {3, 17}
- static const sf::Vector2i kEnemySoldierBirthCoordinate = {25, 17}
- static const sf::Vector2i kOwnBaseCoordinate = {3, 14}
- static const sf::Vector2i kEnemyBaseCoordinate = {26, 14}

Additional Inherited Members

Protected Member Functions inherited from yuki::YukiScene

- void registerTouchableObject (Touchable *object)
- void unregisterTouchableObject (Touchable *object)
- void setReturnCode (int ret_code)
- virtual void processEvent (sf::Event event)
- virtual void draw () const =0
- virtual void updateInfo ()=0

Protected Attributes inherited from yuki::YukiScene

- yuki::MouseEventProcessEngine mouse_event_engine_
- Notify notify_
- int ret_code_
- sf::RenderWindow & window_

6.13.1 Member Typedef Documentation

6.13.1.1 GranuleAttackWithSenderInfo

```
using yuki::MainScene::GranuleAttackWithSenderInfo = std::pair<Soldier*, GranuleAttack>  [private]
```

6.13.2 Member Enumeration Documentation

6.13.2.1 Message

```
enum class yuki::MainScene::Message  [strong]
```

Enumerator

GenerateOwnSoldier	
GenerateEnemySoldier	
OwnBaseLevelUp	
FocusedObjectChanged	
OwnWin	
EnemyWin	

6.13.2.2 ObjectType

```
enum class yuki::MainScene::ObjectType  [strong]
```

Enumerator

OwnSoldier	
EnemySoldier	
OwnBase	
EnemyBase	
None	

6.13.3 Constructor & Destructor Documentation

6.13.3.1 MainScene()

```
MainScene::MainScene (
            sf::RenderWindow & window )
```

6.13.3.2 ~MainScene()

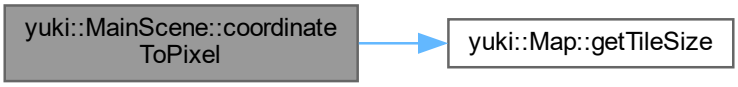
```
virtual yuki::MainScene::~MainScene ( )  [inline], [virtual]
```

6.13.4 Member Function Documentation

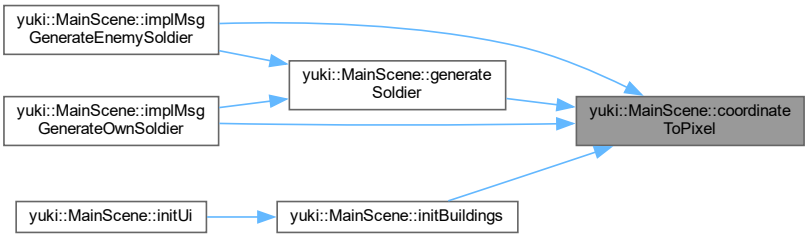
6.13.4.1 coordinateToPixel()

```
sf::Vector2f MainScene::coordinateToPixel (
            const sf::Vector2i & coordinate )  [private]
```

Here is the call graph for this function:



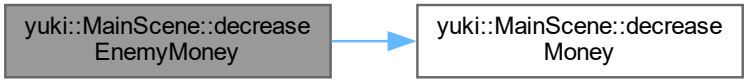
Here is the caller graph for this function:



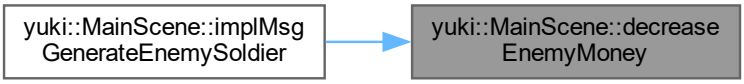
6.13.4.2 decreaseEnemyMoney()

```
void yuki::MainScene::decreaseEnemyMoney (
            int money )  [inline], [private]
```

Here is the call graph for this function:



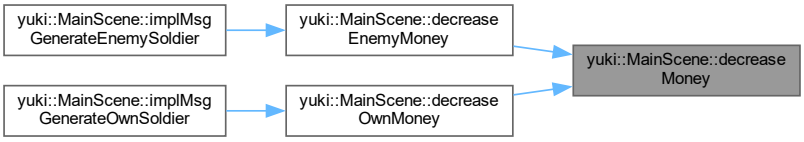
Here is the caller graph for this function:



6.13.4.3 decreaseMoney()

```
void MainScene::decreaseMoney (
            int money,
            Camp camp = Camp::Own )  [private]
```

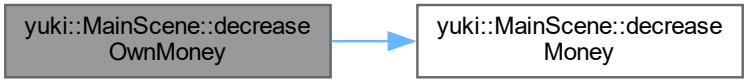
Here is the caller graph for this function:



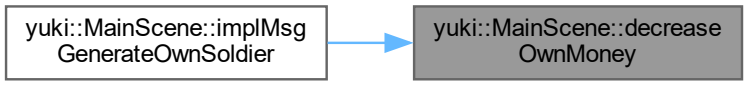
6.13.4.4 decreaseOwnMoney()

```
void yuki::MainScene::decreaseOwnMoney (
            int money )  [inline], [private]
```

Here is the call graph for this function:



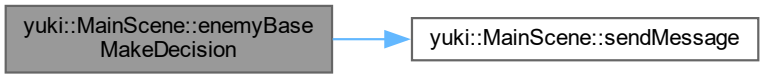
Here is the caller graph for this function:



6.13.4.5 enemyBaseMakeDecision()

```
void MainScene::enemyBaseMakeDecision ( )  [private]
```

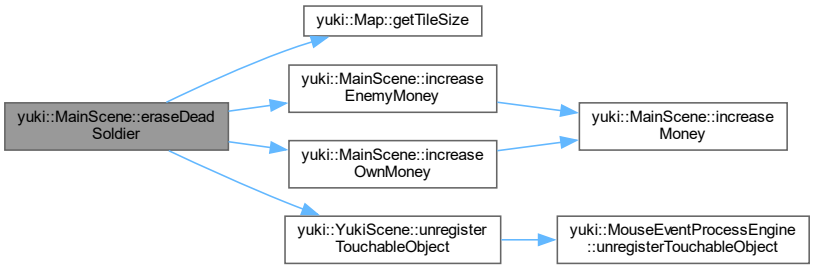
Here is the call graph for this function:



6.13.4.6 eraseDeadSoldier()

```
void MainScene::eraseDeadSoldier ( ) [private]
```

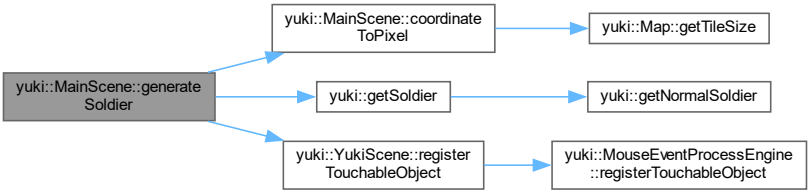
Here is the call graph for this function:



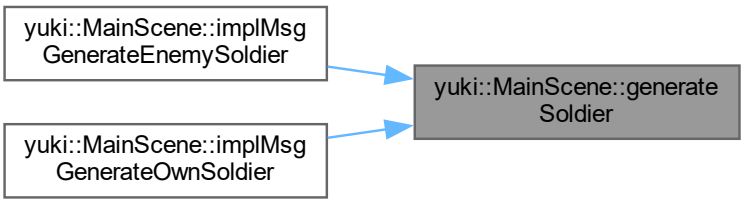
6.13.4.7 generateSoldier()

```
std::unique_ptr< Soldier > MainScene::generateSoldier (
            const std::string & name,
            Camp camp = Camp::Own ) [private]
```

Here is the call graph for this function:



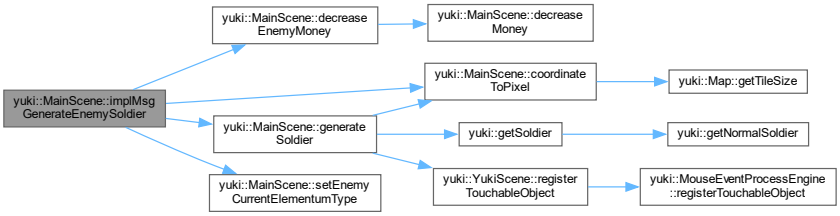
Here is the caller graph for this function:



6.13.4.8 implMsgGenerateEnemySoldier()

```
void MainScene::implMsgGenerateEnemySoldier ( ) [private]
```

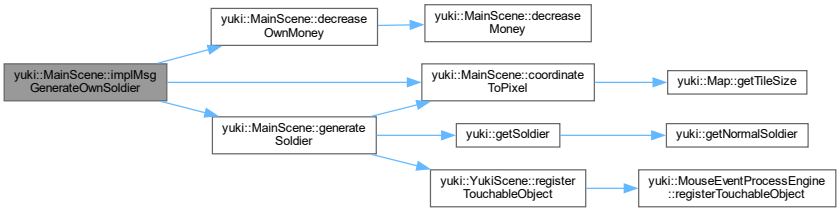
Here is the call graph for this function:



6.13.4.9 implMsgGenerateOwnSoldier()

```
void MainScene::implMsgGenerateOwnSoldier ( ) [private]
```

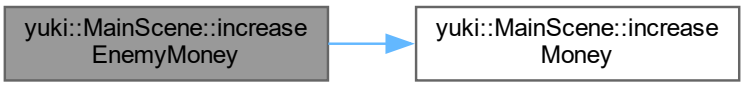
Here is the call graph for this function:



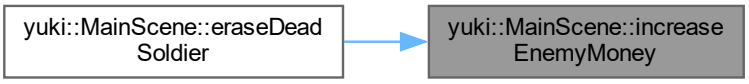
6.13.4.10 increaseEnemyMoney()

```
void yuki::MainScene::increaseEnemyMoney (
            int money ) [inline], [private]
```

Here is the call graph for this function:



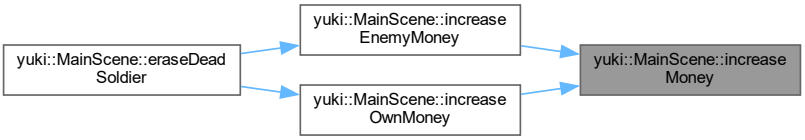
Here is the caller graph for this function:



6.13.4.11 increaseMoney()

```
void MainScene::increaseMoney (
            int money,
            Camp camp = Camp::Own )  [private]
```

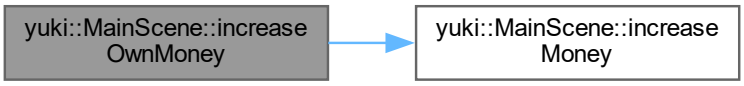
Here is the caller graph for this function:



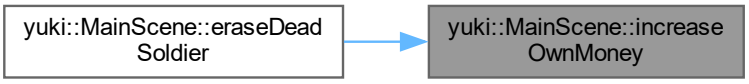
6.13.4.12 increaseOwnMoney()

```
void yuki::MainScene::increaseOwnMoney (
            int money )  [inline], [private]
```

Here is the call graph for this function:



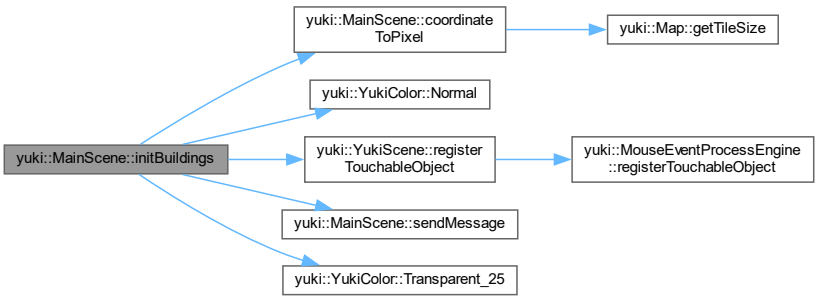
Here is the caller graph for this function:



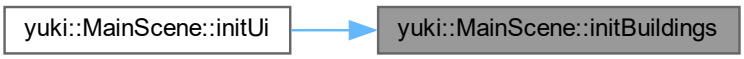
6.13.4.13 initBuildings()

```
void MainScene::initBuildings ( ) [private]
```

Here is the call graph for this function:



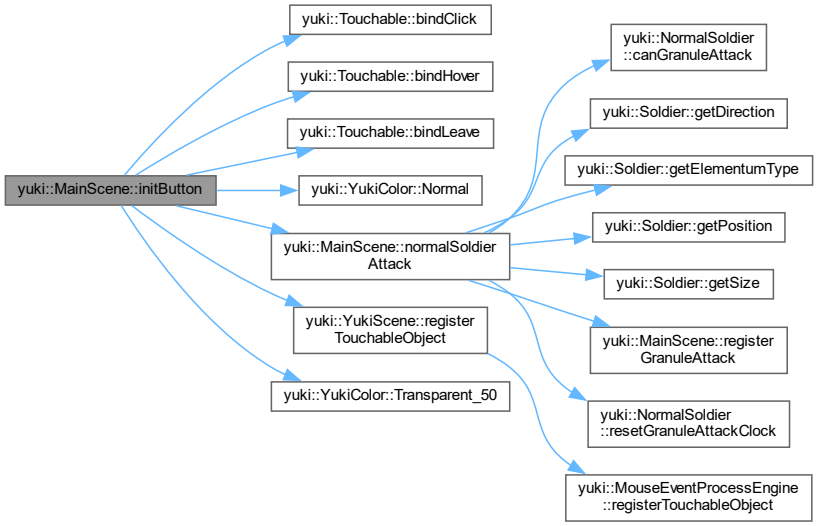
Here is the caller graph for this function:



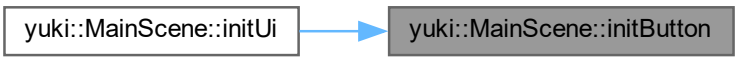
6.13.4.14 initButton()

```
void MainScene::initButton ( ) [private]
```

Here is the call graph for this function:



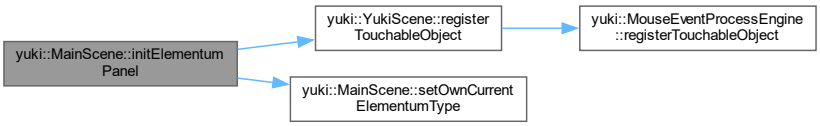
Here is the caller graph for this function:



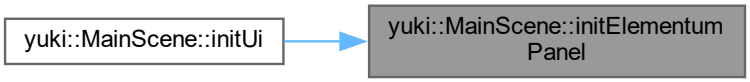
6.13.4.15 initElementumPanel()

```
void MainScene::initElementumPanel ( ) [private]
```

Here is the call graph for this function:



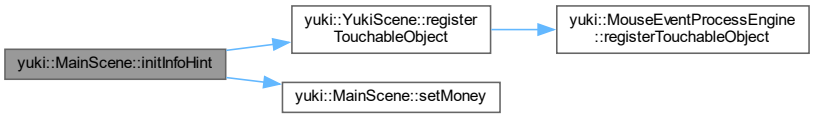
Here is the caller graph for this function:



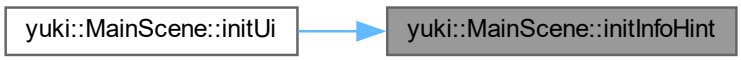
6.13.4.16 initInfoHint()

```
void MainScene::initInfoHint ( ) [private]
```

Here is the call graph for this function:



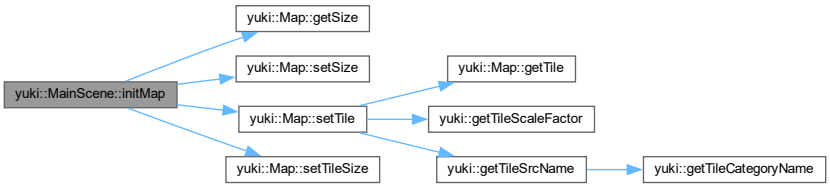
Here is the caller graph for this function:



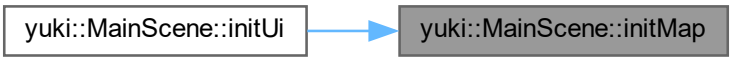
6.13.4.17 initMap()

```
void MainScene::initMap ( ) [private]
```

Here is the call graph for this function:



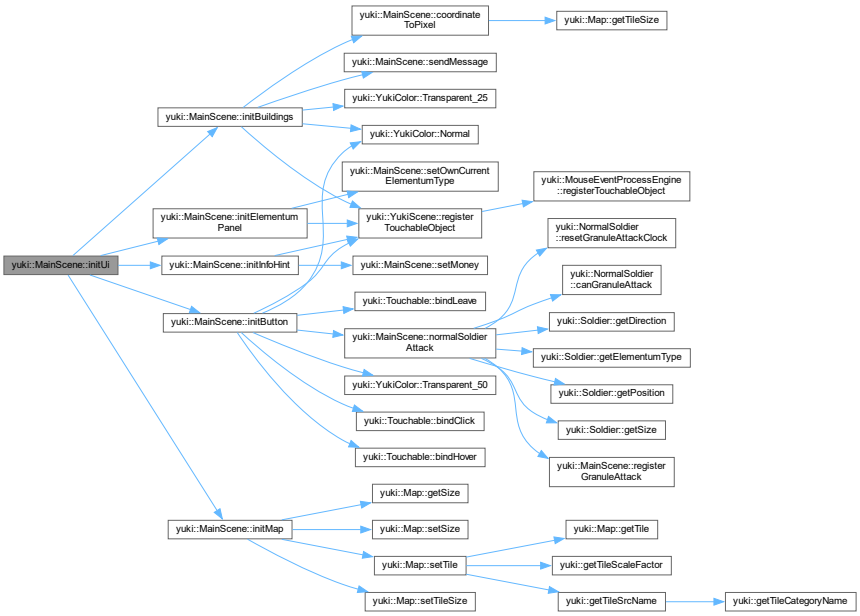
Here is the caller graph for this function:



6.13.4.18 initUi()

```
void MainScene::initUi ( ) [private]
```

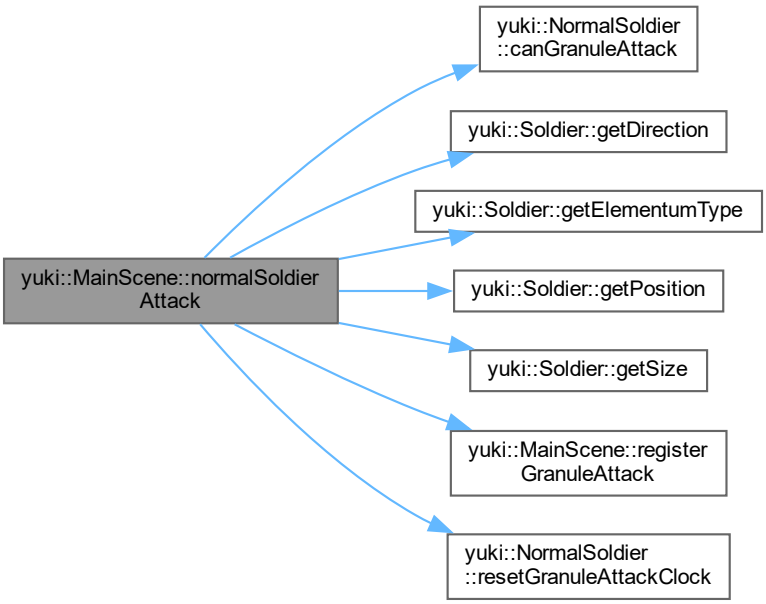
Here is the call graph for this function:



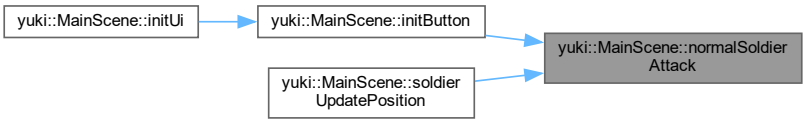
6.13.4.19 normalSoldierAttack()

```
void MainScene::normalSoldierAttack (
            NormalSoldier * attacker )  [private]
```

Here is the call graph for this function:



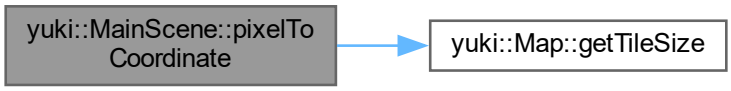
Here is the caller graph for this function:



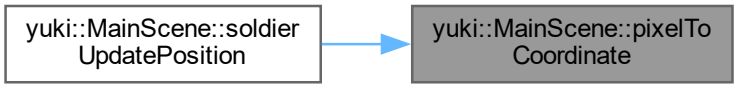
6.13.4.20 pixelToCoordinate()

```
sf::Vector2i MainScene::pixelToCoordinate (
            const sf::Vector2f & pixel_position )  [private]
```

Here is the call graph for this function:



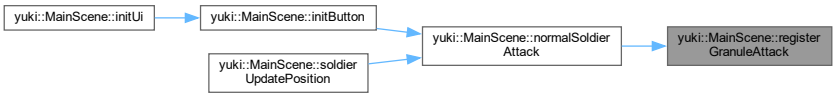
Here is the caller graph for this function:



6.13.4.21 registerGranuleAttack()

```
void yuki::MainScene::registerGranuleAttack (
            Soldier * soldier,
            const GranuleAttack & attack )  [inline], [private]
```

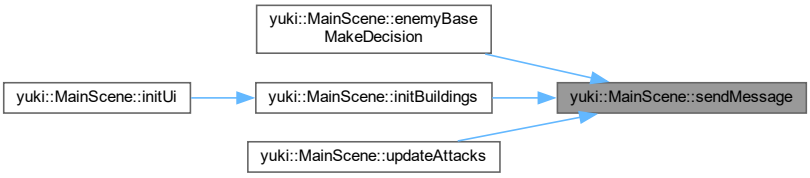
Here is the caller graph for this function:



6.13.4.22 sendMessage()

```
void yuki::MainScene::sendMessage (
            const Message & message )  [inline]
```

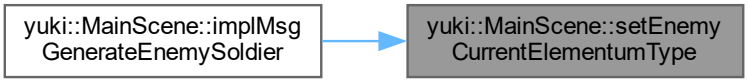
Here is the caller graph for this function:



6.13.4.23 setEnemyCurrentElementumType()

```
void MainScene::setEnemyCurrentElementumType (
            ElementumType type )  [private]
```

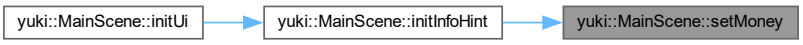
Here is the caller graph for this function:



6.13.4.24 setMoney()

```
void MainScene::setMoney (
            int money,
            Camp camp = Camp::Own )  [private]
```

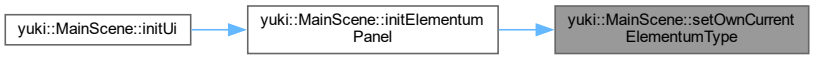
Here is the caller graph for this function:



6.13.4.25 setOwnCurrentElementumType()

```
void MainScene::setOwnCurrentElementumType (
            ElementumType type ) [private]
```

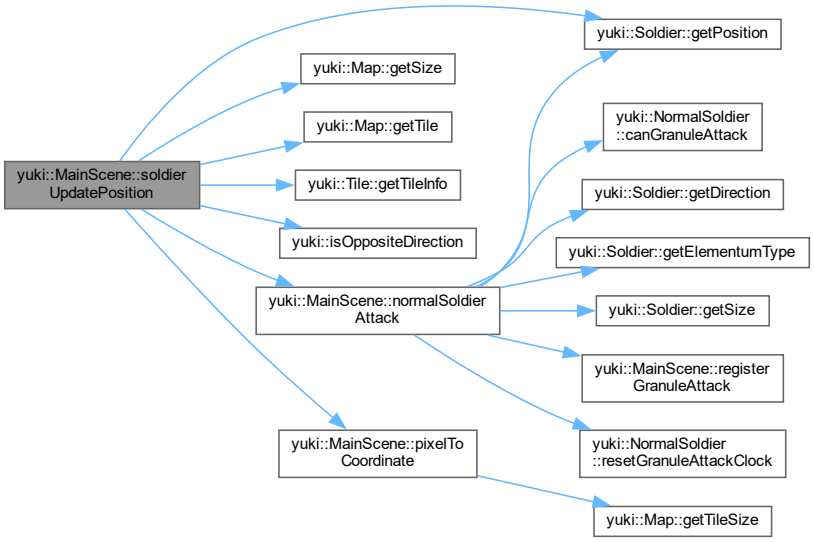
Here is the caller graph for this function:



6.13.4.26 soldierUpdatePosition()

```
void MainScene::soldierUpdatePosition ( ) [private]
```

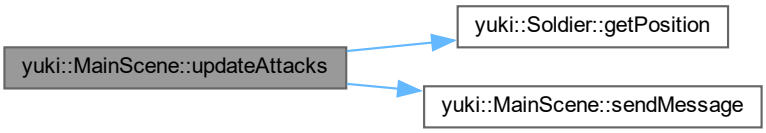
Here is the call graph for this function:



6.13.4.27 updateAttacks()

```
void MainScene::updateAttacks ( ) [private]
```

Here is the call graph for this function:



6.13.5 Member Data Documentation

6.13.5.1 attack_button_

```
TouchableObject<sf::CircleShape> yuki::MainScene::attack_button_ [private]
```

6.13.5.2 attack_button_texture_

```
sf::Texture yuki::MainScene::attack_button_texture_ [private]
```

6.13.5.3 debug_text_

```
sf::Text yuki::MainScene::debug_text_ [private]
```

6.13.5.4 elementum_panels_

```
std::array<ElementumPanel, 3> yuki::MainScene::elementum_panels_ [private]
```

6.13.5.5 enemies_

```
std::vector<std::unique_ptr<Soldier> > yuki::MainScene::enemies_ [private]
```

6.13.5.6 enemy_base_

```
std::unique_ptr<MilitaryBase> yuki::MainScene::enemy_base_ [private]
```

6.13.5.7 enemy_current_elementum_type_

```
ElementumType yuki::MainScene::enemy_current_elementum_type_ [private]
```

6.13.5.8 enemy_money_

```
int yuki::MainScene::enemy_money_ [private]
```

6.13.5.9 focused_object_

```
Focusable* yuki::MainScene::focused_object_ [private]
```

6.13.5.10 focused_object_type_

```
ObjectType yuki::MainScene::focused_object_type_ [private]
```

6.13.5.11 granule_attacks_

```
std::vector<GranuleAttackWithSenderInfo> yuki::MainScene::granule_attacks_ [private]
```

6.13.5.12 info_bar_

```
std::unique_ptr<InfoBar> yuki::MainScene::info_bar_ [private]
```

6.13.5.13 kEnemyBaseCoordinate

```
const sf::Vector2i MainScene::kEnemyBaseCoordinate = {26, 14}  [static], [private]
```

6.13.5.14 kEnemySoldierBirthCoordinate

```
const sf::Vector2i MainScene::kEnemySoldierBirthCoordinate = {25, 17}  [static], [private]
```

6.13.5.15 kOwnBaseCoordinate

```
const sf::Vector2i MainScene::kOwnBaseCoordinate = {3, 14}  [static], [private]
```

6.13.5.16 kOwnSoldierBirthCoordinate

```
const sf::Vector2i MainScene::kOwnSoldierBirthCoordinate = {3, 17}  [static], [private]
```

6.13.5.17 map_

```
Map yuki::MainScene::map_  [private]
```

6.13.5.18 message_queue_

```
std::queue<Message> yuki::MainScene::message_queue_  [private]
```

6.13.5.19 own_base_

```
std::unique_ptr<MilitaryBase> yuki::MainScene::own_base_  [private]
```

6.13.5.20 own_current_elementum_type_

```
ElementumType yuki::MainScene::own_current_elementum_type_  [private]
```

6.13.5.21 own_money_

```
int yuki::MainScene::own_money_ [private]
```

6.13.5.22 skill_bar_

```
std::unique_ptr<SkillBar<3> > yuki::MainScene::skill_bar_ [private]
```

6.13.5.23 soldiers_

```
std::vector<std::unique_ptr<Soldier> > yuki::MainScene::soldiers_ [private]
```

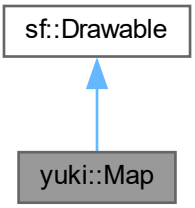
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/MainScene.hpp
- E:/Project/Yuki/src/MainScene.cpp

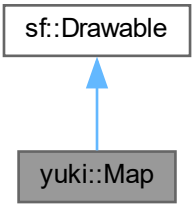
6.14 yuki::Map Class Reference

```
#include <Map.hpp>
```

Inheritance diagram for yuki::Map:



Collaboration diagram for yuki::Map:



Public Member Functions

- Map (const sf::Vector2i &size, const sf::Vector2f &tile_size)
- virtual ~Map ()
- void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- void setSize (const sf::Vector2i &size)
- const auto & getSize () const
- void setTileSize (const sf::Vector2f &tile_size)
- const auto & getTileSize () const
- auto getCoordinate (const sf::Vector2f &position) const
- Tile & getTile (int row, int col)
- const Tile & getTile (int row, int col) const
- Tile & getTile (const sf::Vector2i &coordinate)
- const Tile & getTile (const sf::Vector2i &coordinate) const
- void setTile (int row, int col, const TileInfo &tile_info)

Private Attributes

- sf::Vector2i size_
- sf::Vector2f tile_size_
- std::vector< Tile > tiles_
- sf::Texture bg_texture_
- std::vector< sf::Sprite > bg_tiles_

6.14.1 Constructor & Destructor Documentation

6.14.1.1 Map()

```
Map::Map (
            const sf::Vector2i & size,
            const sf::Vector2f & tile_size )
```

6.14.1.2 ~Map()

```
Map::~Map ( ) [virtual]
```

6.14.2 Member Function Documentation

6.14.2.1 draw()

```
void Map::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override]
```

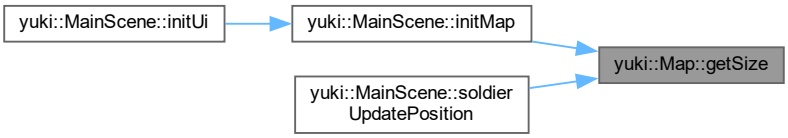
6.14.2.2 getCoordinate()

```
auto yuki::Map::getCoordinate (
            const sf::Vector2f & position ) const  [inline]
```

6.14.2.3 getSize()

```
const auto & yuki::Map::getSize ( ) const  [inline]
```

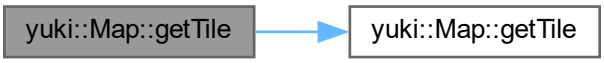
Here is the caller graph for this function:



6.14.2.4 getTile() [1/4]

```
Tile & Map::getTile (
            const sf::Vector2i & coordinate )
```

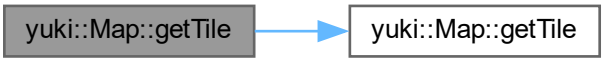
Here is the call graph for this function:



6.14.2.5 getTile() [2/4]

```
const Tile & Map::getTile (
            const sf::Vector2i & coordinate ) const
```

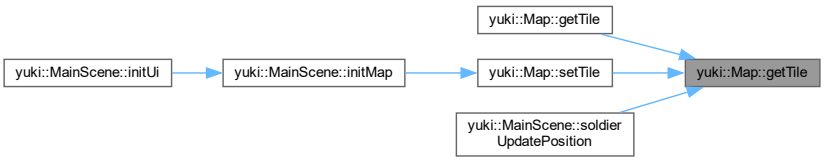
Here is the call graph for this function:



6.14.2.6 getTile() [3/4]

```
Tile & Map::getTile (
            int row,
            int col )
```

Here is the caller graph for this function:



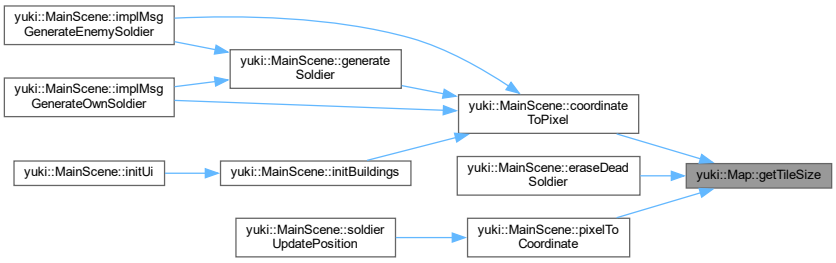
6.14.2.7 getTile() [4/4]

```
const Tile & Map::getTile (
            int row,
            int col ) const
```

6.14.2.8 getTileSize()

```
const auto & yuki::Map::getTileSize ( ) const  [inline]
```

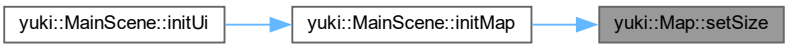
Here is the caller graph for this function:



6.14.2.9 setSize()

```
void yuki::Map::setSize (
            const sf::Vector2i & size )  [inline]
```

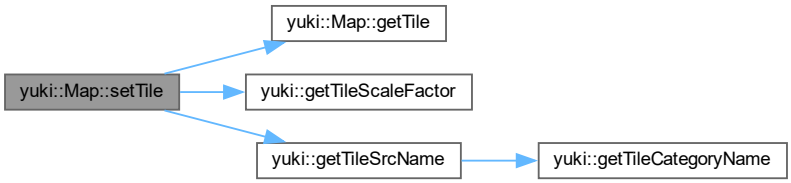
Here is the caller graph for this function:



6.14.2.10 setTile()

```
void Map::setTile (
            int row,
            int col,
            const TileInfo & tile_info )
```

Here is the call graph for this function:

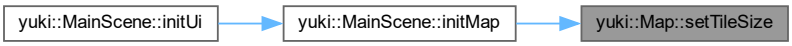


Here is the caller graph for this function:

6.14.2.11 setTileSize()

```
void yuki::Map::setTileSize (
            const sf::Vector2f & tile_size )  [inline]
```

Here is the caller graph for this function:



6.14.3 Member Data Documentation

6.14.3.1 bg_texture_

```
sf::Texture yuki::Map::bg_texture_  [private]
```

6.14.3.2 bg_tiles_

```
std::vector<sf::Sprite> yuki::Map::bg_tiles_  [private]
```

6.14.3.3 size_

```
sf::Vector2i yuki::Map::size_  [private]
```

6.14.3.4 tile_size_

```
sf::Vector2f yuki::Map::tile_size_ [private]
```

6.14.3.5 tiles_

```
std::vector<Tile> yuki::Map::tiles_ [private]
```

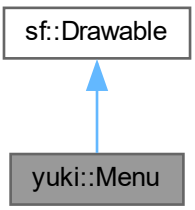
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/Map.hpp
- E:/Project/Yuki/src/Map.cpp

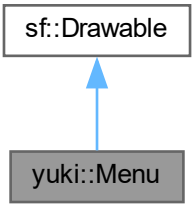
6.15 yuki::Menu Class Reference

```
#include <Menu.hpp>
```

Inheritance diagram for yuki::Menu:



Collaboration diagram for yuki::Menu:



Public Types

- enum class Layout { Vertical , Horizontal }

Public Member Functions

- Menu ()
- virtual ~Menu ()
- void setLayout (Layout layout)
- const Layout & getLayout () const
- void addItem (std::unique_ptr< yuki::Button > item)
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const
- Button & operator[ ] (unsigned int index)
- Button & getByName (const sf::String &name)

Private Member Functions

- void adjustItemsPosition ()

Private Attributes

- std::vector< std::unique_ptr< yuki::Button > > menu_items_
- Layout layout_
- unsigned int spacing_
- sf::Vector2f position_

6.15.1 Member Enumeration Documentation

6.15.1.1 Layout

```
enum class yuki::Menu::Layout  [strong]
```

Enumerator

Vertical	
Horizontal	

6.15.2 Constructor & Destructor Documentation

6.15.2.1 Menu()

```
Menu::Menu ( )
```

6.15.2.2 ~Menu()

```
Menu::~Menu ( )  [virtual]
```

6.15.3 Member Function Documentation

6.15.3.1 addItem()

```
void Menu::addItem (
            std::unique_ptr< yuki::Button > item )
```

6.15.3.2 adjustItemsPosition()

```
void Menu::adjustItemsPosition ( )  [private]
```

6.15.3.3 draw()

```
void Menu::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [virtual]
```

6.15.3.4 getByName()

```
Button & yuki::Menu::getByName (
            const sf::String & name )  [inline]
```

6.15.3.5 getLayout()

```
const Layout & yuki::Menu::getLayout ( ) const  [inline]
```

6.15.3.6 operator[]()

```
Button & yuki::Menu::operator[] (
            unsigned int index )  [inline]
```

6.15.3.7 setLayout()

```
void yuki::Menu::setLayout (
            Layout layout )  [inline]
```

6.15.4 Member Data Documentation

6.15.4.1 layout_

```
Layout yuki::Menu::layout_  [private]
```

6.15.4.2 menu_items_

```
std::vector<std::unique_ptr<yuki::Button> > yuki::Menu::menu_items_  [private]
```

6.15.4.3 position_

```
sf::Vector2f yuki::Menu::position_  [private]
```

6.15.4.4 spacing_

```
unsigned int yuki::Menu::spacing_  [private]
```

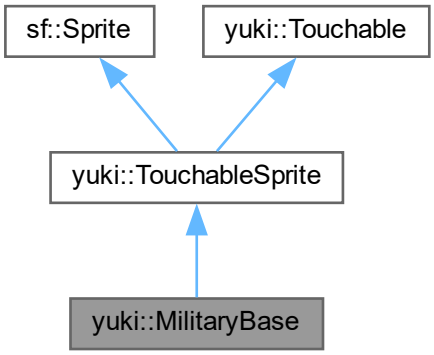
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/Menu.hpp
- E:/Project/Yuki/src/Menu.cpp

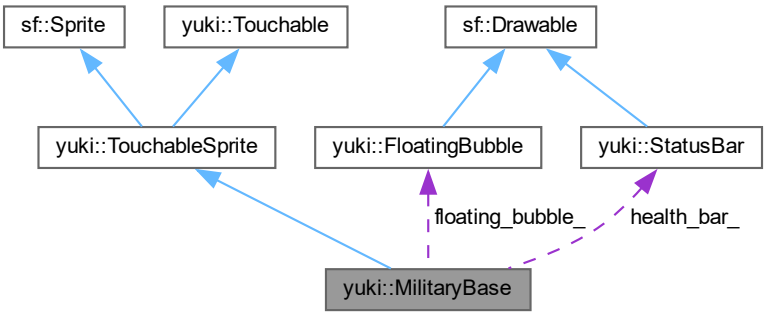
6.16 yuki::MilitaryBase Class Reference

```
#include <MilitaryBase.hpp>
```

Inheritance diagram for yuki::MilitaryBase:



Collaboration diagram for yuki::MilitaryBase:



Public Member Functions

- MilitaryBase (Camp camp=Camp::Own)
- virtual ~MilitaryBase ()
- void levelUp ()
- void levelDown ()
- auto getLevel () const
- void setCurrentHealth (int health)
- void setMaxHealth (int health)
- constexpr auto getCurrentHealth () const

- constexpr auto getMaxHealth () const
- void setPosition (const sf::Vector2f &position)
- void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- void setFloatingBubbleVisible (bool visible)
- constexpr auto getFloatingBubbleVisible () const
- int getFloatingBubbleIndexByPosition (const sf::Vector2f &position)
- auto & getFloatingBubble ()
- const auto & getFloatingBubble () const
- bool canGenerateSoldier ()
- void resetGenerateSoldierClock ()
- void getAttacked (const BasicAttack &attack)

Public Member Functions inherited from yuki::TouchableSprite

- TouchableSprite ()=default
- TouchableSprite (const sf::Texture &texture)
- TouchableSprite (const sf::Texture &texture, const sf::IntRect &rect)
- virtual ~TouchableSprite ()

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Private Member Functions

- void initTexture ()
- void updateTexture ()

Private Attributes

- Camp camp_
- int level_ = 1
- sf::Texture texture_
- FloatingBubble floating_bubble_
- bool floating_bubble_visible_ = false
- StatusBar health_bar_
- sf::Clock generateSoldierClock_

Static Private Attributes

- static constexpr float health_bar_offset_y = -10.f

Additional Inherited Members

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Touchable

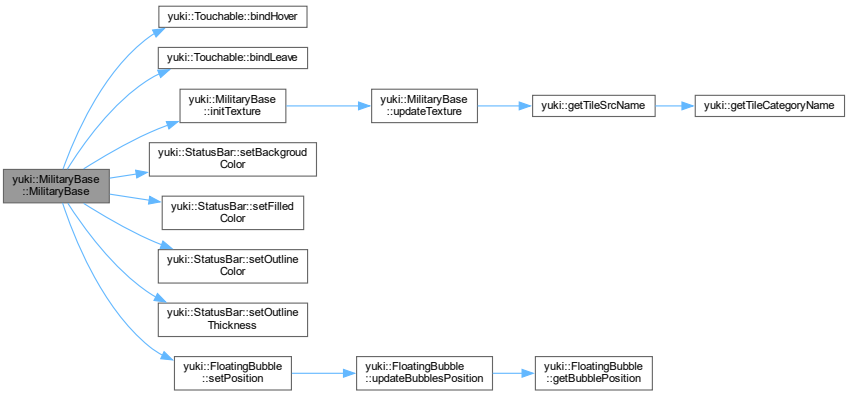
- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.16.1 Constructor & Destructor Documentation

6.16.1.1 MilitaryBase()

```
MilitaryBase::MilitaryBase (
            Camp camp = Camp::Own )
```

Here is the call graph for this function:



6.16.1.2 ~MilitaryBase()

```
virtual yuki::MilitaryBase::~MilitaryBase ( )  [inline], [virtual]
```

6.16.2 Member Function Documentation

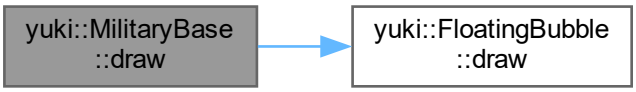
6.16.2.1 canGenerateSoldier()

```
bool MilitaryBase::canGenerateSoldier ( )
```

6.16.2.2 draw()

```
void MilitaryBase::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override]
```

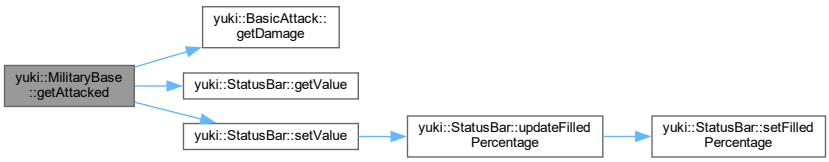
Here is the call graph for this function:



6.16.2.3 getAttacked()

```
void yuki::MilitaryBase::getAttacked (
            const BasicAttack & attack )  [inline]
```

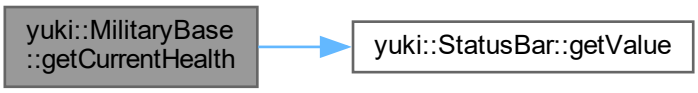
Here is the call graph for this function:



6.16.2.4 getCurrentHealth()

```
constexpr auto yuki::MilitaryBase::getCurrentHealth ( ) const  [inline], [constexpr]
```

Here is the call graph for this function:



6.16.2.5 getFloatingBubble() [1/2]

```
auto & yuki::MilitaryBase::getFloatingBubble ( )  [inline]
```

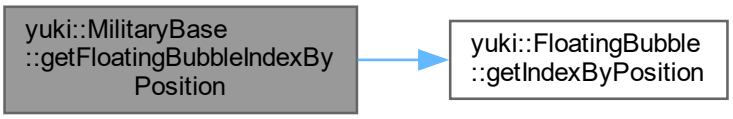
6.16.2.6 getFloatingBubble() [2/2]

```
const auto & yuki::MilitaryBase::getFloatingBubble ( ) const  [inline]
```

6.16.2.7 getFloatingBubbleIndexByPosition()

```
int yuki::MilitaryBase::getFloatingBubbleIndexByPosition (
            const sf::Vector2f & position )  [inline]
```

Here is the call graph for this function:



6.16.2.8 getFloatingBubbleVisible()

```
constexpr auto yuki::MilitaryBase::getFloatingBubbleVisible ( ) const  [inline], [constexpr]
```

6.16.2.9 getLevel()

```
auto yuki::MilitaryBase::getLevel ( ) const  [inline]
```

6.16.2.10 getMaxHealth()

```
constexpr auto yuki::MilitaryBase::getMaxHealth ( ) const  [inline], [constexpr]
```

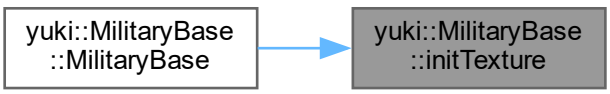
Here is the call graph for this function:

6.16.2.11 initTexture()

```
void MilitaryBase::initTexture ( )  [private]
```

Here is the call graph for this function:

Here is the caller graph for this function:



6.16.2.12 levelDown()

```
void yuki::MilitaryBase::levelDown ( ) [inline]
```

Here is the call graph for this function:

6.16.2.13 levelUp()

```
void yuki::MilitaryBase::levelUp ( ) [inline]
```

Here is the call graph for this function:

6.16.2.14 resetGenerateSoldierClock()

```
void yuki::MilitaryBase::resetGenerateSoldierClock ( ) [inline]
```

6.16.2.15 setCurrentHealth()

```
void yuki::MilitaryBase::setCurrentHealth (
            int health ) [inline]
```

Here is the call graph for this function:

6.16.2.16 setFloatingBubbleVisible()

```
void yuki::MilitaryBase::setFloatingBubbleVisible (
            bool visible )  [inline]
```

6.16.2.17 setMaxHealth()

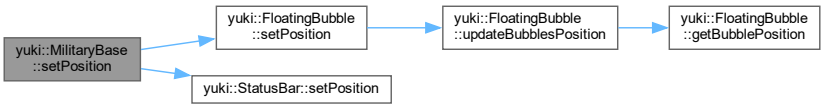
```
void yuki::MilitaryBase::setMaxHealth (
            int health )  [inline]
```

Here is the call graph for this function:

6.16.2.18 setPosition()

```
void yuki::MilitaryBase::setPosition (
            const sf::Vector2f & position )  [inline]
```

Here is the call graph for this function:

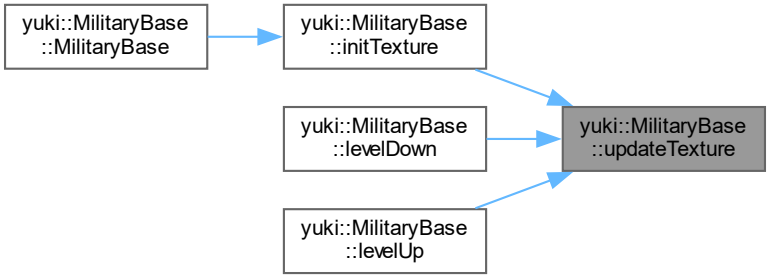


6.16.2.19 updateTexture()

```
void MilitaryBase::updateTexture ( )  [private]
```

Here is the call graph for this function:

Here is the caller graph for this function:



6.16.3 Member Data Documentation

6.16.3.1 camp_

```
Camp yuki::MilitaryBase::camp_  [private]
```

6.16.3.2 floating_bubble_

```
FloatingBubble yuki::MilitaryBase::floating_bubble_  [private]
```

6.16.3.3 floating_bubble_visible_

```
bool yuki::MilitaryBase::floating_bubble_visible_ = false  [private]
```

6.16.3.4 generateSoldierClock_

```
sf::Clock yuki::MilitaryBase::generateSoldierClock_  [private]
```

6.16.3.5 health_bar_

```
StatusBar yuki::MilitaryBase::health_bar_  [private]
```

6.16.3.6 health_bar_offset_y

```
constexpr float yuki::MilitaryBase::health_bar_offset_y = -10.f  [static], [constexpr], [private]
```

6.16.3.7 level_

```
int yuki::MilitaryBase::level_ = 1  [private]
```

6.16.3.8 texture_

```
sf::Texture yuki::MilitaryBase::texture_  [private]
```

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

- E:/Project/Yuki/include/MilitaryBase.hpp
- E:/Project/Yuki/src/MilitaryBase.cpp

6.17 yuki::MouseEventProcessEngine Class Reference

```
#include <InputProcessEngine.hpp>
```

Public Member Functions

- MouseEventProcessEngine ()
- virtual ~MouseEventProcessEngine ()
- void registerTouchableObject (Touchable *object)
- void unregisterTouchableObject (Touchable *object)
- void processEvent (sf::Event event)

Private Attributes

- std::vector< Touchable * > touchable_objects_

6.17.1 Constructor & Destructor Documentation

6.17.1.1 MouseEventProcessEngine()

```
MouseEventProcessEngine::MouseEventProcessEngine ( )
```

6.17.1.2 ~MouseEventProcessEngine()

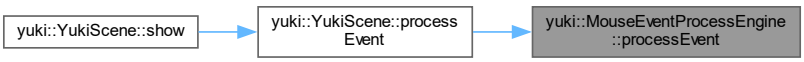
```
MouseEventProcessEngine::~MouseEventProcessEngine ( )  [virtual]
```

6.17.2 Member Function Documentation

6.17.2.1 processEvent()

```
void MouseEventProcessEngine::processEvent (
            sf::Event event )
```

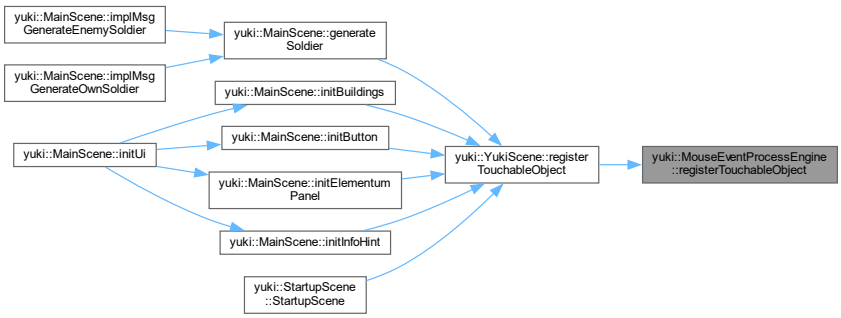
Here is the caller graph for this function:



6.17.2.2 registerTouchableObject()

```
void MouseEventProcessEngine::registerTouchableObject (
            Touchable * object )
```

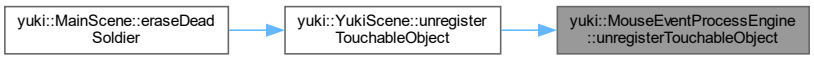
Here is the caller graph for this function:



6.17.2.3 unregisterTouchableObject()

```
void MouseEventProcessEngine::unregisterTouchableObject (
            Touchable * object )
```

Here is the caller graph for this function:



6.17.3 Member Data Documentation

6.17.3.1 touchable_objects_

```
std::vector<Touchable*> yuki::MouseEventProcessEngine::touchable_objects_  [private]
```

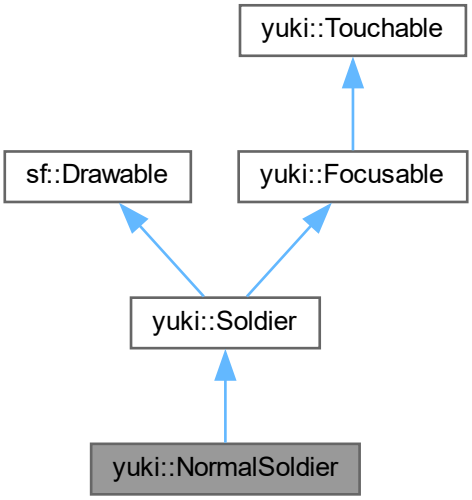
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/InputProcessEngine.hpp
- E:/Project/Yuki/src/InputProcessEngine.cpp

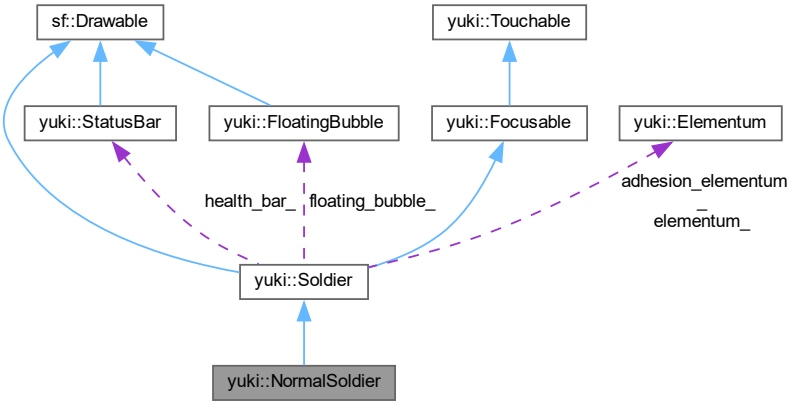
6.18 yuki::NormalSoldier Class Reference

```
#include <Soldier.hpp>
```

Inheritance diagram for yuki::NormalSoldier:



Collaboration diagram for yuki::NormalSoldier:



Public Member Functions

- NormalSoldier (Camp camp=Camp::Own)
- NormalSoldier (const sf::Vector2f &position, Camp camp=Camp::Own)

- virtual ~NormalSoldier ()
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- virtual void update () override
- std::unique_ptr< BasicAttack > getDefaultAttack () override
- std::unique_ptr< GranuleAttack > getDefaultGranuleAttack ()
- void setGranuleAttackCD (const sf::Time &cd)
- const auto getGranuleAttackCD () const
- bool canGranuleAttack () const
- void resetGranuleAttackClock ()

Public Member Functions inherited from yuki::Soldier

- Soldier (Camp camp=Camp::Own)
- Soldier (const sf::Vector2f &position, Camp camp=Camp::Own)
- virtual ~Soldier ()
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- virtual void update ()
- void setDirection (const Direction direction)
- constexpr auto getDirection () const
- void setSpeed (const float speed)
- constexpr auto getSpeed () const
- void setMoving (const bool moving)
- constexpr auto isMoving () const
- void setPosition (const sf::Vector2f &position)
- const auto getPosition () const
- void setOrigin (const sf::Vector2f &origin)
- const auto getOrigin () const
- auto getSize () const
- void setMaxHealth (const float max_health)
- constexpr auto getMaxHealth () const
- void setHealth (const float current_health)
- const auto getHealth () const
- void increaseHealth (const float health)
- void decreaseHealth (const float health)
- void setColor (const sf::Color &color)
- auto getColor () const
- void setPlaceOffset (const sf::Vector2f &offset)
- virtual const sf::Vector2f & getPlaceOffset () const
- void setFloatingBubbleVisible (const bool visible)
- constexpr auto isFloatingBubbleVisible () const
- void walk ()
- auto & getFloatingBubble ()
- const auto & getFloatingBubble () const
- void setElementum (const Elementum &elementum)
- const auto & getElementum () const
- void setElementumType (const ElementumType &elementum_type)
- constexpr auto getElementumType () const
- constexpr auto getCamp () const
- void setAdhesionElementum (const Elementum &elementum)
- const auto & getAdhesionElementum () const
- void getAttacked (const BasicAttack &attack)
- constexpr auto isFreezed () const
- virtual std::unique_ptr< BasicAttack > getDefaultAttack ()=0

Public Member Functions inherited from yuki::Focusable

- Focusable ()=default
- virtual ~Focusable ()
- virtual void onFocus (sf::Event e)
- virtual void onUnfocus (sf::Event e)
- constexpr auto isFocused () const
- void bindFocus (Callback callback)
- void bindUnfocus (Callback callback)
- void updateStatus (sf::Event event)

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Private Attributes

- sf::Texture all_textures_
- sf::Vector2f place_offset_ = {0, 0}
- int current_frame_
- int previous_frame_
- int max_frame_
- sf::Time granule_attack_cd_ = sf::seconds(0.5f)
- sf::Clock granule_attack_clock_

Additional Inherited Members

Public Types inherited from yuki::Focusable

- using Callback = std::function< void(sf::Event e)>

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Soldier

- sf::Sprite sprite_
- sf::Vector2f health_bar_offset_ = {0, -15}
- Camp camp_
- sf::Vector2f place_offset_ = {0, 0}
- bool is_moving_ = false
- Direction direction_ = Direction::Down
- float speed_ = 0.0f
- Elementum elementum_ = Elementum(yuki::ElementumType::None, 0.0f)
- Elementum adhesion_elementum_ = Elementum(yuki::ElementumType::None, 0.0f)
- StatusBar health_bar_
- sf::Clock freeze_clock_
- bool is_freeze_ = false
- FloatingBubble floating_bubble_
- bool floating_bubble_visible_
- sf::Clock clock_

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.18.1 Constructor & Destructor Documentation

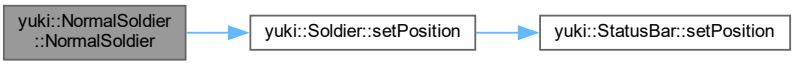
6.18.1.1 NormalSoldier() [1/2]

```
NormalSoldier::NormalSoldier (
            Camp camp = Camp::Own )
```

6.18.1.2 NormalSoldier() [2/2]

```
NormalSoldier::NormalSoldier (
            const sf::Vector2f & position,
            Camp camp = Camp::Own )
```

Here is the call graph for this function:



6.18.1.3 ~NormalSoldier()

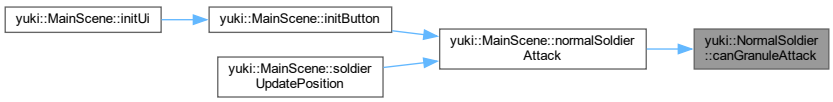
```
virtual yuki::NormalSoldier::~NormalSoldier ( )  [inline], [virtual]
```

6.18.2 Member Function Documentation

6.18.2.1 canGranuleAttack()

```
bool yuki::NormalSoldier::canGranuleAttack ( ) const  [inline]
```

Here is the caller graph for this function:

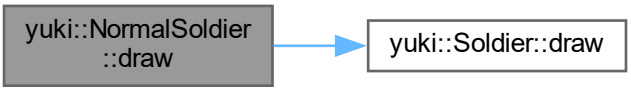


6.18.2.2 draw()

```
void NormalSoldier::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [virtual]
```

Reimplemented from yuki::Soldier.

Here is the call graph for this function:

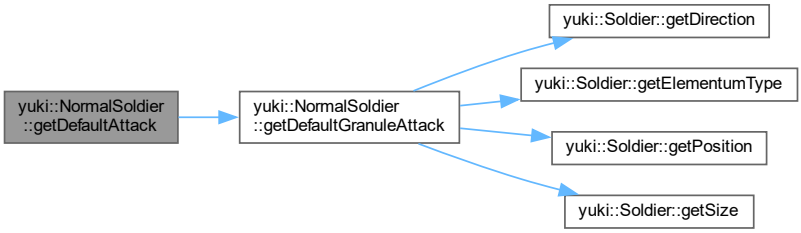


6.18.2.3 getDefaultAttack()

```
std::unique_ptr< BasicAttack > yuki::NormalSoldier::getDefaultAttack ( ) [inline], [override], [virtual]
```

Implements yuki::Soldier.

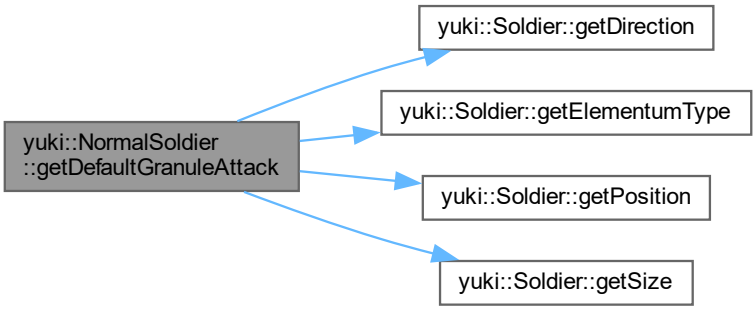
Here is the call graph for this function:



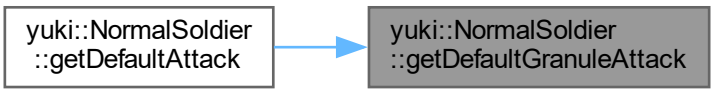
6.18.2.4 getDefaultGranuleAttack()

```
std::unique_ptr< GranuleAttack > NormalSoldier::getDefaultGranuleAttack ( )
```

Here is the call graph for this function:



Here is the caller graph for this function:



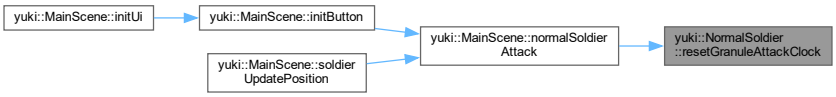
6.18.2.5 getGranuleAttackCD()

```
const auto yuki::NormalSoldier::getGranuleAttackCD ( ) const  [inline]
```

6.18.2.6 resetGranuleAttackClock()

```
void yuki::NormalSoldier::resetGranuleAttackClock ( )  [inline]
```

Here is the caller graph for this function:



6.18.2.7 setGranuleAttackCD()

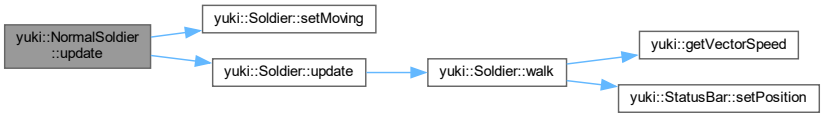
```
void yuki::NormalSoldier::setGranuleAttackCD (
            const sf::Time & cd )  [inline]
```

6.18.2.8 update()

```
void NormalSoldier::update ( )  [override], [virtual]
```

Reimplemented from yuki::Soldier.

Here is the call graph for this function:



6.18.3 Member Data Documentation

6.18.3.1 all_textures_

```
sf::Texture yuki::NormalSoldier::all_textures_ [private]
```

6.18.3.2 current_frame_

```
int yuki::NormalSoldier::current_frame_ [private]
```

6.18.3.3 granule_attack_cd_

```
sf::Time yuki::NormalSoldier::granule_attack_cd_ = sf::seconds(0.5f) [private]
```

6.18.3.4 granule_attack_clock_

```
sf::Clock yuki::NormalSoldier::granule_attack_clock_ [private]
```

6.18.3.5 max_frame_

```
int yuki::NormalSoldier::max_frame_ [private]
```

6.18.3.6 place_offset_

```
sf::Vector2f yuki::NormalSoldier::place_offset_ = {0, 0} [private]
```

6.18.3.7 previous_frame_

```
int yuki::NormalSoldier::previous_frame_ [private]
```

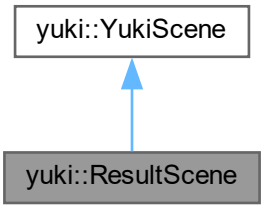
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/Soldier.hpp
- E:/Project/Yuki/src/Soldier.cpp

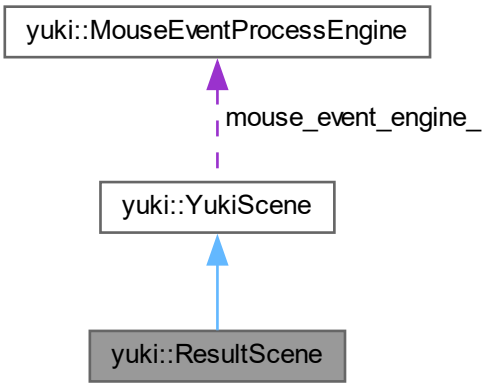
6.19 yuki::ResultScene Class Reference

```
#include <ResultScene.hpp>
```

Inheritance diagram for yuki::ResultScene:



Collaboration diagram for yuki::ResultScene:



Public Member Functions

- ResultScene (sf::RenderWindow &window, bool own_win=true)
- virtual ~ResultScene ()

Public Member Functions inherited from yuki::YukiScene

- YukiScene (sf::RenderWindow &window)
- virtual ~YukiScene ()
- virtual int show ()

Private Member Functions

- void initUi ()

Private Attributes

- sf::Text result_text_
- bool own_win_
- sf::Sprite background_
- sf::Texture background_texture_

Additional Inherited Members

Public Types inherited from yuki::YukiScene

- enum class Notify { None , End }

Protected Member Functions inherited from yuki::YukiScene

- void registerTouchableObject (Touchable *object)
- void unregisterTouchableObject (Touchable *object)
- void setReturnCode (int ret_code)
- virtual void processEvent (sf::Event event)
- virtual void draw () const =0
- virtual void updateInfo ()=0

Protected Attributes inherited from yuki::YukiScene

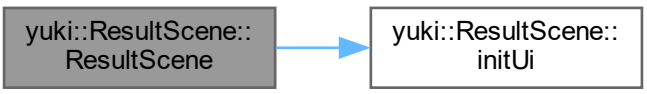
- yuki::MouseEventProcessEngine mouse_event_engine_
- Notify notify_
- int ret_code_
- sf::RenderWindow & window_

6.19.1 Constructor & Destructor Documentation

6.19.1.1 ResultScene()

```
ResultScene::ResultScene (
            sf::RenderWindow & window,
            bool own_win = true )
```

Here is the call graph for this function:



6.19.1.2 ~ResultScene()

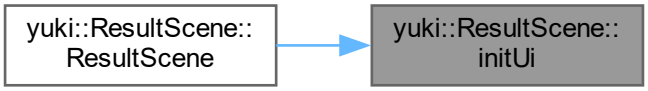
```
ResultScene::~ResultScene ( )  [virtual]
```

6.19.2 Member Function Documentation

6.19.2.1 initUi()

```
void ResultScene::initUi ( )  [private]
```

Here is the caller graph for this function:



6.19.3 Member Data Documentation

6.19.3.1 background_

```
sf::Sprite yuki::ResultScene::background_  [private]
```

6.19.3.2 background_texture_

```
sf::Texture yuki::ResultScene::background_texture_  [private]
```

6.19.3.3 own_win_

```
bool yuki::ResultScene::own_win_  [private]
```

6.19.3.4 result_text_

```
sf::Text yuki::ResultScene::result_text_ [private]
```

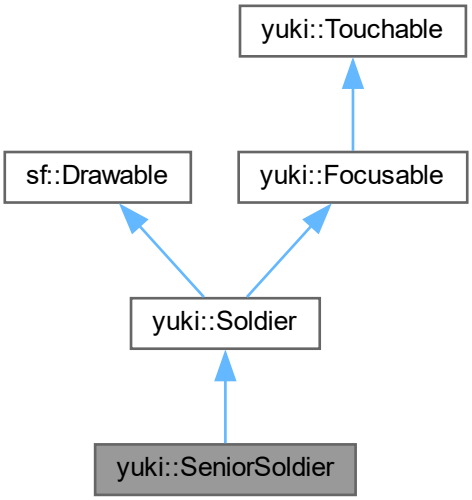
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/ResultScene.hpp
- E:/Project/Yuki/src/ResultScene.cpp

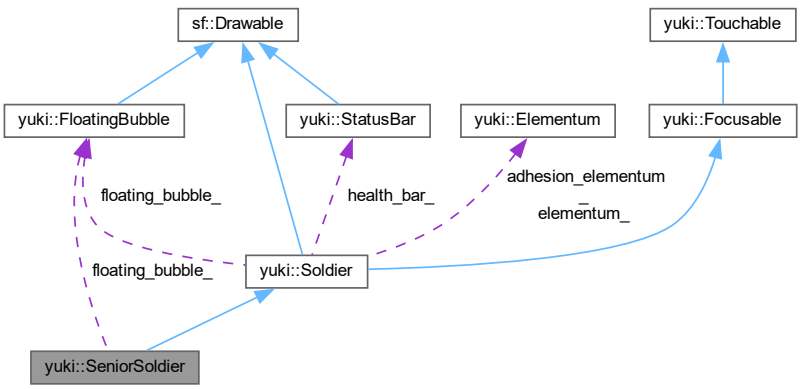
6.20 yuki::SeniorSoldier Class Reference

```
#include <Soldier.hpp>
```

Inheritance diagram for yuki::SeniorSoldier:



Collaboration diagram for yuki::SeniorSoldier:



Public Member Functions

- SeniorSoldier (Camp camp=Camp::Own)
- SeniorSoldier (const sf::Vector2f &position, Camp camp=Camp::Own)
- virtual ~SeniorSoldier ()
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- virtual void update () override

Public Member Functions inherited from yuki::Soldier

- Soldier (Camp camp=Camp::Own)
- Soldier (const sf::Vector2f &position, Camp camp=Camp::Own)
- virtual ~Soldier ()
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- virtual void update ()
- void setDirection (const Direction direction)
- constexpr auto getDirection () const
- void setSpeed (const float speed)
- constexpr auto getSpeed () const
- void setMoving (const bool moving)
- constexpr auto isMoving () const
- void setPosition (const sf::Vector2f &position)
- const auto getPosition () const
- void setOrigin (const sf::Vector2f &origin)
- const auto getOrigin () const
- auto getSize () const
- void setMaxHealth (const float max_health)
- constexpr auto getMaxHealth () const
- void setHealth (const float current_health)
- const auto getHealth () const
- void increaseHealth (const float health)
- void decreaseHealth (const float health)
- void setColor (const sf::Color &color)
- auto getColor () const
- void setPlaceOffset (const sf::Vector2f &offset)
- virtual const sf::Vector2f & getPlaceOffset () const
- void setFloatingBubbleVisible (const bool visible)
- constexpr auto isFloatingBubbleVisible () const
- void walk ()
- auto & getFloatingBubble ()
- const auto & getFloatingBubble () const
- void setElementum (const Elementum &elementum)
- const auto & getElementum () const
- void setElementumType (const ElementumType &elementum_type)
- constexpr auto getElementumType () const
- constexpr auto getCamp () const
- void setAdhesionElementum (const Elementum &elementum)
- const auto & getAdhesionElementum () const
- void getAttacked (const BasicAttack &attack)
- constexpr auto isFreezed () const
- virtual std::unique_ptr< BasicAttack > getDefaultAttack ()=0

Public Member Functions inherited from yuki::Focusable

- Focusable ()=default
- virtual ~Focusable ()
- virtual void onFocus (sf::Event e)
- virtual void onUnfocus (sf::Event e)
- constexpr auto isFocused () const
- void bindFocus (Callback callback)
- void bindUnfocus (Callback callback)
- void updateStatus (sf::Event event)

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Private Attributes

- sf::Texture all_textures_
- sf::Vector2f place_offset_ = {0, 0}
- int current_frame_
- int previous_frame_
- int max_frame_
- FloatingBubble floating_bubble_

Additional Inherited Members

Public Types inherited from yuki::Focusable

- using Callback = std::function< void(sf::Event e)>

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Soldier

- sf::Sprite sprite_
- sf::Vector2f health_bar_offset_ = {0, -15}
- Camp camp_
- sf::Vector2f place_offset_ = {0, 0}
- bool is_moving_ = false
- Direction direction_ = Direction::Down
- float speed_ = 0.0f
- Elementum elementum_ = Elementum(yuki::ElementumType::None, 0.0f)
- Elementum adhesion_elementum_ = Elementum(yuki::ElementumType::None, 0.0f)
- StatusBar health_bar_
- sf::Clock freeze_clock_
- bool is_freeze_ = false
- FloatingBubble floating_bubble_
- bool floating_bubble_visible_
- sf::Clock clock_

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.20.1 Constructor & Destructor Documentation

6.20.1.1 SeniorSoldier() [1/2]

```
yuki::SeniorSoldier::SeniorSoldier (
            Camp camp = Camp::Own )
```

6.20.1.2 SeniorSoldier() [2/2]

```
yuki::SeniorSoldier::SeniorSoldier (
            const sf::Vector2f & position,
            Camp camp = Camp::Own )
```

6.20.1.3 ~SeniorSoldier()

```
virtual yuki::SeniorSoldier::~SeniorSoldier ( )  [inline], [virtual]
```

6.20.2 Member Function Documentation

6.20.2.1 draw()

```
virtual void yuki::SeniorSoldier::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [virtual]
```

Reimplemented from yuki::Soldier.

6.20.2.2 update()

```
virtual void yuki::SeniorSoldier::update ( )  [override], [virtual]
```

Reimplemented from yuki::Soldier.

6.20.3 Member Data Documentation

6.20.3.1 all_textures_

```
sf::Texture yuki::SeniorSoldier::all_textures_  [private]
```

6.20.3.2 current_frame_

```
int yuki::SeniorSoldier::current_frame_  [private]
```

6.20.3.3 floating_bubble_

```
FloatingBubble yuki::SeniorSoldier::floating_bubble_  [private]
```

6.20.3.4 max_frame_

```
int yuki::SeniorSoldier::max_frame_  [private]
```

6.20.3.5 place_offset_

```
sf::Vector2f yuki::SeniorSoldier::place_offset_ = {0, 0}  [private]
```

6.20.3.6 previous_frame_

```
int yuki::SeniorSoldier::previous_frame_  [private]
```

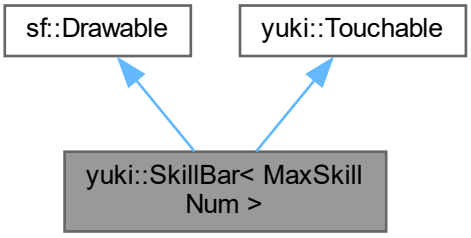
The documentation for this class was generated from the following file:

- E:/Project/Yuki/include/Soldier.hpp

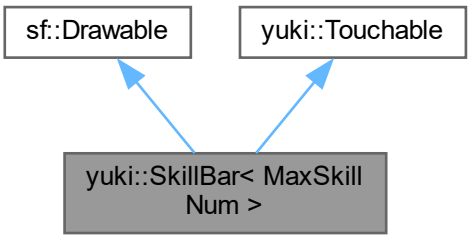
6.21 yuki::SkillBar< MaxSkillNum > Class Template Reference

```
#include <Skill.hpp>
```

Inheritance diagram for yuki::SkillBar< MaxSkillNum >:



Collaboration diagram for yuki::SkillBar< MaxSkillNum >:



Public Member Functions

- SkillBar (const sf::Vector2f &position={0, 0}, float radius=10.f, float border_thick=2.f, int skill_num=0)
- constexpr auto getSkillNum () const

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Protected Member Functions

- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override

Private Member Functions

- void updatePosition ()

Private Attributes

- unsigned skill_num_
- std::array< SkillIcon, MaxSkillNum > skills_
- std::array< sf::RectangleShape, MaxSkillNum > boxes_
- sf::Vector2f position_
- float icon_radius_ = 10.f
- float border_thick_ = 2.f

Additional Inherited Members

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Touchable

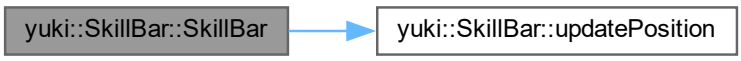
- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.21.1 Constructor & Destructor Documentation

6.21.1.1 SkillBar()

```
template<std::size_t N>
yuki::SkillBar< N >::SkillBar (
            const sf::Vector2f & position = {0, 0},
            float radius = 10.f,
            float border_thick = 2.f,
            int skill_num = 0 )
```

Here is the call graph for this function:



6.21.2 Member Function Documentation

6.21.2.1 draw()

```
template<std::size_t N>
void yuki::SkillBar< N >::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [protected], [virtual]
```

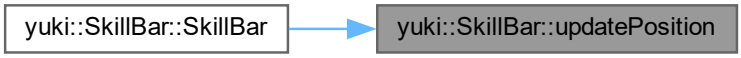
6.21.2.2 getSkillNum()

```
template<std::size_t MaxSkillNum = 3>
constexpr auto yuki::SkillBar< MaxSkillNum >::getSkillNum ( ) const  [inline], [constexpr]
```

6.21.2.3 updatePosition()

```
template<std::size_t N>
void yuki::SkillBar< N >::updatePosition  [private]
```

Here is the caller graph for this function:



6.21.3 Member Data Documentation

6.21.3.1 border_thick_

```
template<std::size_t MaxSkillNum = 3>
float yuki::SkillBar< MaxSkillNum >::border_thick_ = 2.f  [private]
```

6.21.3.2 boxes_

```
template<std::size_t MaxSkillNum = 3>
std::array<sf::RectangleShape, MaxSkillNum> yuki::SkillBar< MaxSkillNum >::boxes_  [private]
```

6.21.3.3 icon_radius_

```
template<std::size_t MaxSkillNum = 3>
float yuki::SkillBar< MaxSkillNum >::icon_radius_ = 10.f  [private]
```

6.21.3.4 position_

```
template<std::size_t MaxSkillNum = 3>
sf::Vector2f yuki::SkillBar< MaxSkillNum >::position_ [private]
```

6.21.3.5 skill_num_

```
template<std::size_t MaxSkillNum = 3>
unsigned yuki::SkillBar< MaxSkillNum >::skill_num_ [private]
```

6.21.3.6 skills_

```
template<std::size_t MaxSkillNum = 3>
std::array<SkillIcon, MaxSkillNum> yuki::SkillBar< MaxSkillNum >::skills_ [private]
```

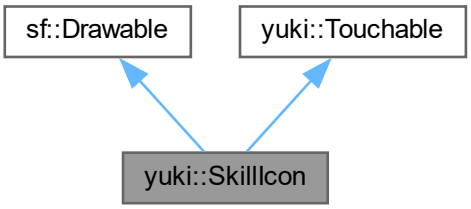
The documentation for this class was generated from the following file:

- E:/Project/Yuki/include/Skill.hpp

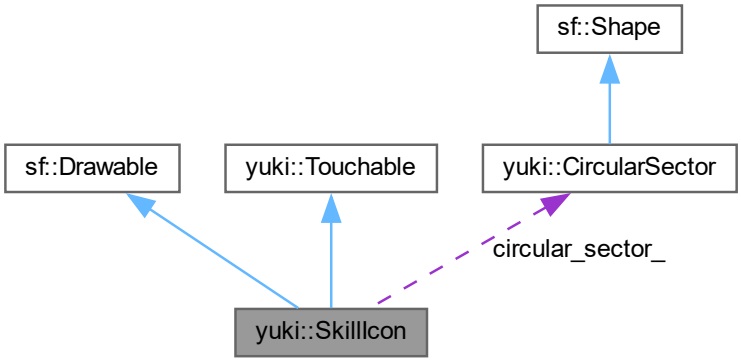
6.22 yuki::SkillIcon Class Reference

```
#include <Skill.hpp>
```

Inheritance diagram for yuki::SkillIcon:



Collaboration diagram for yuki::SkillIcon:



Public Member Functions

- SkillIcon (const sf::Vector2f &position={0, 0}, float radius=10.f, float border_thick=2.f)
- void setMaxValue (int max_value)
- constexpr auto getMaxValue () const
- void setCurrentValue (int current_value)
- constexpr auto getCurrentValue () const
- void setPosition (const sf::Vector2f &position)

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Protected Member Functions

- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override

Private Member Functions

- void updateCircularSector ()

Private Attributes

- CircularSector circular_sector_
- sf::CircleShape background_
- sf::CircleShape icon_
- int max_value_
- int current_value_

Additional Inherited Members

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.22.1 Constructor & Destructor Documentation

6.22.1.1 SkillIcon()

```
SkillIcon::SkillIcon (
            const sf::Vector2f & position = {0, 0},
            float radius = 10.f,
            float border_thick = 2.f )
```

6.22.2 Member Function Documentation

6.22.2.1 draw()

```
void SkillIcon::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [protected], [virtual]
```

6.22.2.2 getCurrentValue()

```
constexpr auto yuki::SkillIcon::getCurrentValue ( ) const  [inline], [constexpr]
```

6.22.2.3 getMaxValue()

```
constexpr auto yuki::SkillIcon::getMaxValue ( ) const  [inline], [constexpr]
```

6.22.2.4 setCurrentValue()

```
void yuki::SkillIcon::setCurrentValue (
            int current_value )  [inline]
```

6.22.2.5 setMaxValue()

```
void yuki::SkillIcon::setMaxValue (
            int max_value )  [inline]
```

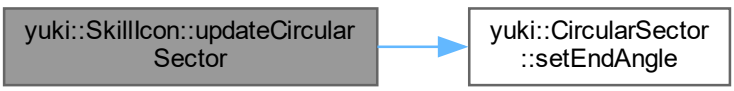
6.22.2.6 setPosition()

```
void SkillIcon::setPosition (
            const sf::Vector2f & position )
```

6.22.2.7 updateCircularSector()

```
void SkillIcon::updateCircularSector ( )  [private]
```

Here is the call graph for this function:



6.22.3 Member Data Documentation

6.22.3.1 background_

```
sf::CircleShape yuki::SkillIcon::background_ [private]
```

6.22.3.2 circular_sector_

```
CircularSector yuki::SkillIcon::circular_sector_ [private]
```

6.22.3.3 current_value_

```
int yuki::SkillIcon::current_value_ [private]
```

6.22.3.4 icon_

```
sf::CircleShape yuki::SkillIcon::icon_ [private]
```

6.22.3.5 max_value_

```
int yuki::SkillIcon::max_value_ [private]
```

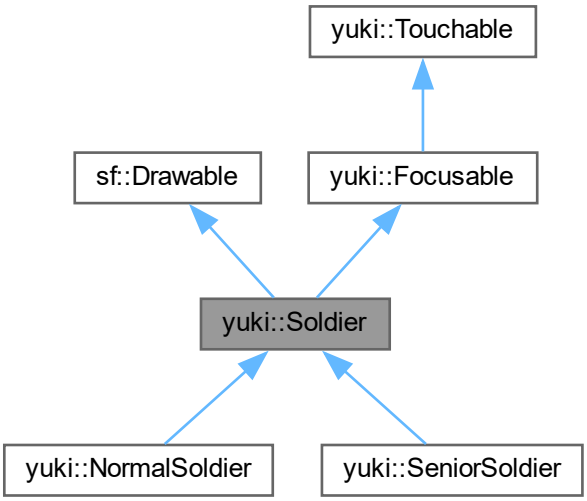
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/Skill.hpp
- E:/Project/Yuki/src/Skill.cpp

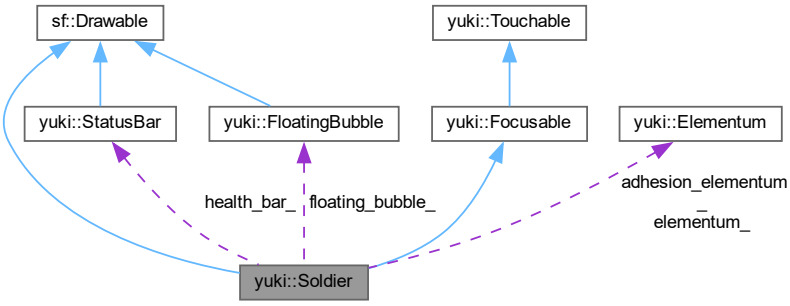
6.23 yuki::Soldier Class Reference

```
#include <Soldier.hpp>
```

Inheritance diagram for yuki::Soldier:



Collaboration diagram for yuki::Soldier:



Public Member Functions

- Soldier (Camp camp=Camp::Own)
- Soldier (const sf::Vector2f &position, Camp camp=Camp::Own)
- virtual ~Soldier ()
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- virtual void update ()

- void setDirection (const Direction direction)
- constexpr auto getDirection () const
- void setSpeed (const float speed)
- constexpr auto getSpeed () const
- void setMoving (const bool moving)
- constexpr auto isMoving () const
- void setPosition (const sf::Vector2f &position)
- const auto getPosition () const
- void setOrigin (const sf::Vector2f &origin)
- const auto getOrigin () const
- auto getSize () const
- void setMaxHealth (const float max_health)
- constexpr auto getMaxHealth () const
- void setHealth (const float current_health)
- const auto getHealth () const
- void increaseHealth (const float health)
- void decreaseHealth (const float health)
- void setColor (const sf::Color &color)
- auto getColor () const
- void setPlaceOffset (const sf::Vector2f &offset)
- virtual const sf::Vector2f & getPlaceOffset () const
- void setFloatingBubbleVisible (const bool visible)
- constexpr auto isFloatingBubbleVisible () const
- void walk ()
- auto & getFloatingBubble ()
- const auto & getFloatingBubble () const
- void setElementum (const Elementum &elementum)
- const auto & getElementum () const
- void setElementumType (const ElementumType &elementum_type)
- constexpr auto getElementumType () const
- constexpr auto getCamp () const
- void setAdhesionElementum (const Elementum &elementum)
- const auto & getAdhesionElementum () const
- void getAttacked (const BasicAttack &attack)
- constexpr auto isFreezed () const
- virtual std::unique_ptr< BasicAttack > getDefaultAttack ()=0

Public Member Functions inherited from yuki::Focusable

- Focusable ()=default
- virtual ~Focusable ()
- virtual void onFocus (sf::Event e)
- virtual void onUnfocus (sf::Event e)
- constexpr auto isFocused () const
- void bindFocus (Callback callback)
- void bindUnfocus (Callback callback)
- void updateStatus (sf::Event event)

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Protected Attributes

- sf::Sprite sprite_
- sf::Vector2f health_bar_offset_ = {0, -15}
- Camp camp_
- sf::Vector2f place_offset_ = {0, 0}
- bool is_moving_ = false
- Direction direction_ = Direction::Down
- float speed_ = 0.0f
- Elementum elementum_ = Elementum(yuki::ElementumType::None, 0.0f)
- Elementum adhesion_elementum_ = Elementum(yuki::ElementumType::None, 0.0f)
- StatusBar health_bar_
- sf::Clock freeze_clock_
- bool is_freeze_ = false
- FloatingBubble floating_bubble_
- bool floating_bubble_visible_
- sf::Clock clock_

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

Additional Inherited Members

Public Types inherited from yuki::Focusable

- using Callback = std::function< void(sf::Event e)>

Public Types inherited from yuki::Touchable

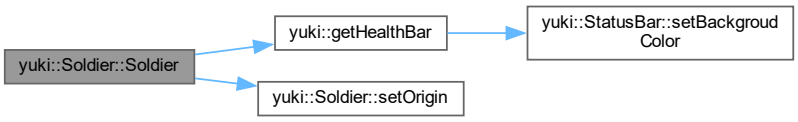
- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

6.23.1 Constructor & Destructor Documentation

6.23.1.1 Soldier() [1/2]

```
yuki::Soldier::Soldier (
            Camp camp = Camp::Own )  [inline]
```

Here is the call graph for this function:



6.23.1.2 Soldier() [2/2]

```
yuki::Soldier::Soldier (
            const sf::Vector2f & position,
            Camp camp = Camp::Own )  [inline]
```

Here is the call graph for this function:

6.23.1.3 ~Soldier()

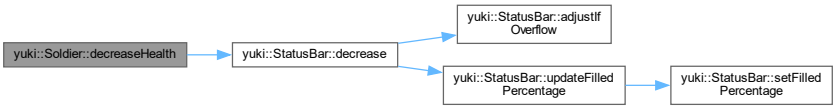
```
virtual yuki::Soldier::~Soldier ( )  [inline], [virtual]
```

6.23.2 Member Function Documentation

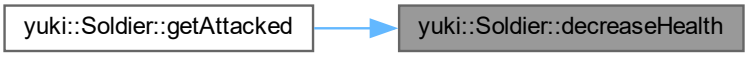
6.23.2.1 decreaseHealth()

```
void yuki::Soldier::decreaseHealth (
            const float health )  [inline]
```

Here is the call graph for this function:



Here is the caller graph for this function:

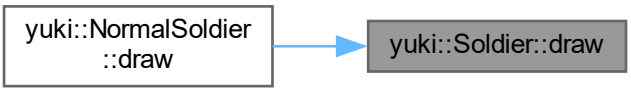


6.23.2.2 draw()

```
void Soldier::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [virtual]
```

Reimplemented in yuki::NormalSoldier, and yuki::SeniorSoldier.

Here is the caller graph for this function:



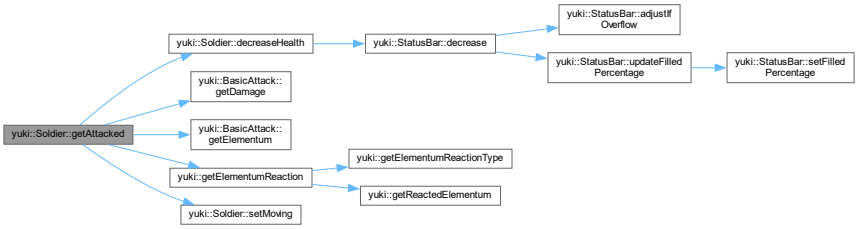
6.23.2.3 getAdhesionElementum()

```
const auto & yuki::Soldier::getAdhesionElementum ( ) const  [inline]
```

6.23.2.4 getAttacked()

```
void Soldier::getAttacked (
            const BasicAttack & attack )
```

Here is the call graph for this function:



6.23.2.5 getCamp()

```
constexpr auto yuki::Soldier::getCamp ( ) const  [inline], [constexpr]
```

6.23.2.6 getColor()

```
auto yuki::Soldier::getColor ( ) const  [inline]
```

6.23.2.7 getDefaultAttack()

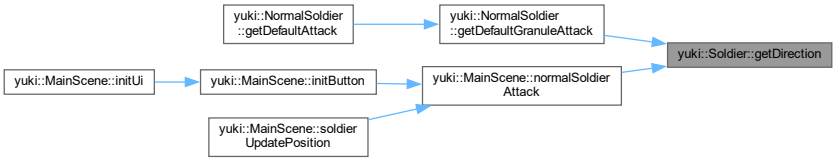
```
virtual std::unique_ptr< BasicAttack > yuki::Soldier::getDefaultAttack ( )  [pure virtual]
```

Implemented in yuki::NormalSoldier.

6.23.2.8 getDirection()

```
constexpr auto yuki::Soldier::getDirection ( ) const  [inline], [constexpr]
```

Here is the caller graph for this function:



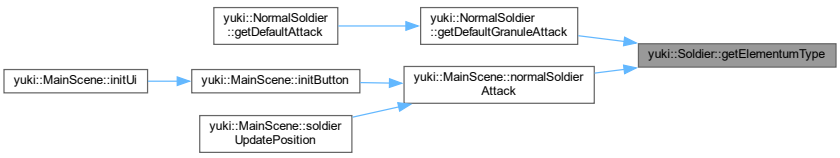
6.23.2.9 getElementum()

```
const auto & yuki::Soldier::getElementum ( ) const  [inline]
```

6.23.2.10 getElementumType()

```
constexpr auto yuki::Soldier::getElementumType ( ) const  [inline], [constexpr]
```

Here is the caller graph for this function:



6.23.2.11 getFloatingBubble() [1/2]

```
auto & yuki::Soldier::getFloatingBubble ( )  [inline]
```

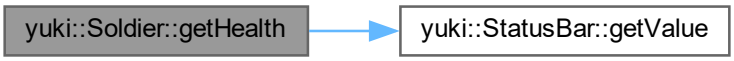
6.23.2.12 getFloatingBubble() [2/2]

```
const auto & yuki::Soldier::getFloatingBubble ( ) const  [inline]
```

6.23.2.13 getHealth()

```
const auto yuki::Soldier::getHealth ( ) const  [inline]
```

Here is the call graph for this function:



6.23.2.14 getMaxHealth()

```
constexpr auto yuki::Soldier::getMaxHealth ( ) const  [inline], [constexpr]
```

Here is the call graph for this function:

6.23.2.15 getOrigin()

```
const auto yuki::Soldier::getOrigin ( ) const  [inline]
```

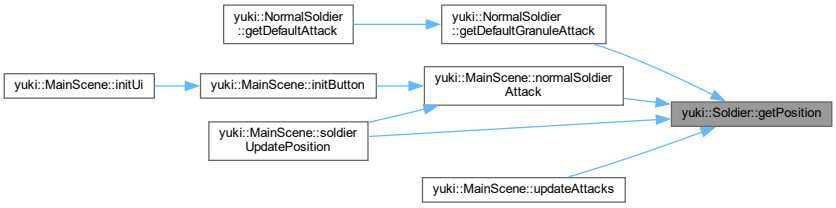
6.23.2.16 getPlaceOffset()

```
virtual const sf::Vector2f & yuki::Soldier::getPlaceOffset ( ) const  [inline], [virtual]
```

6.23.2.17 getPosition()

```
const auto yuki::Soldier::getPosition ( ) const  [inline]
```

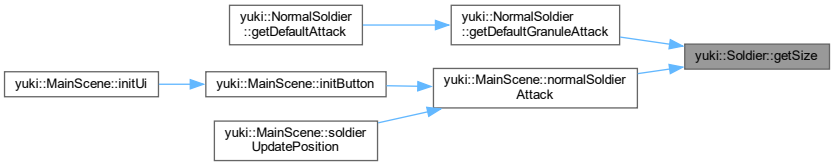
Here is the caller graph for this function:



6.23.2.18 getSize()

```
auto yuki::Soldier::getSize ( ) const  [inline]
```

Here is the caller graph for this function:



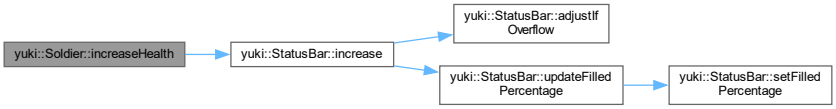
6.23.2.19 getSpeed()

```
constexpr auto yuki::Soldier::getSpeed ( ) const  [inline], [constexpr]
```

6.23.2.20 increaseHealth()

```
void yuki::Soldier::increaseHealth (
            const float health )  [inline]
```

Here is the call graph for this function:



6.23.2.21 isFloatingBubbleVisible()

```
constexpr auto yuki::Soldier::isFloatingBubbleVisible ( ) const  [inline], [constexpr]
```

6.23.2.22 isFreezed()

```
constexpr auto yuki::Soldier::isFreezed ( ) const  [inline], [constexpr]
```

6.23.2.23 isMoving()

```
constexpr auto yuki::Soldier::isMoving ( ) const  [inline], [constexpr]
```

6.23.2.24 setAdhesionElementum()

```
void yuki::Soldier::setAdhesionElementum (
            const Elementum & elementum )  [inline]
```

6.23.2.25 setColor()

```
void yuki::Soldier::setColor (
            const sf::Color & color )  [inline]
```

6.23.2.26 setDirection()

```
void yuki::Soldier::setDirection (
            const Direction direction )  [inline]
```

6.23.2.27 setElementum()

```
void yuki::Soldier::setElementum (
            const Elementum & elementum )  [inline]
```

6.23.2.28 setElementumType()

```
void yuki::Soldier::setElementumType (
            const ElementumType & elementum_type )  [inline]
```

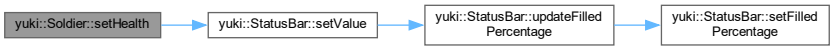
6.23.2.29 setFloatingBubbleVisible()

```
void yuki::Soldier::setFloatingBubbleVisible (
            const bool visible )  [inline]
```

6.23.2.30 setHealth()

```
void yuki::Soldier::setHealth (
            const float current_health )  [inline]
```

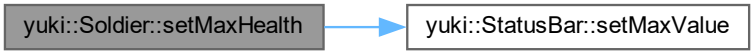
Here is the call graph for this function:



6.23.2.31 setMaxHealth()

```
void yuki::Soldier::setMaxHealth (
            const float max_health )  [inline]
```

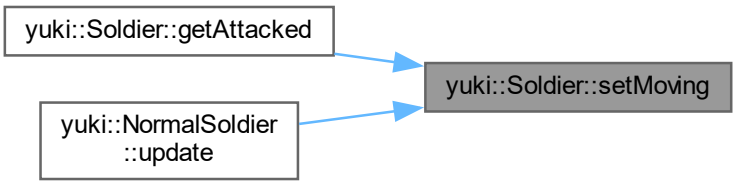
Here is the call graph for this function:



6.23.2.32 setMoving()

```
void yuki::Soldier::setMoving (
            const bool moving )  [inline]
```

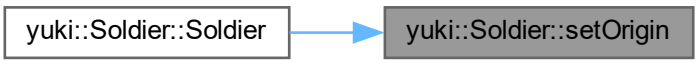
Here is the caller graph for this function:



6.23.2.33 setOrigin()

```
void yuki::Soldier::setOrigin (
            const sf::Vector2f & origin )  [inline]
```

Here is the caller graph for this function:



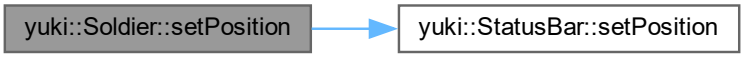
6.23.2.34 setPlaceOffset()

```
void yuki::Soldier::setPlaceOffset (
            const sf::Vector2f & offset )  [inline]
```

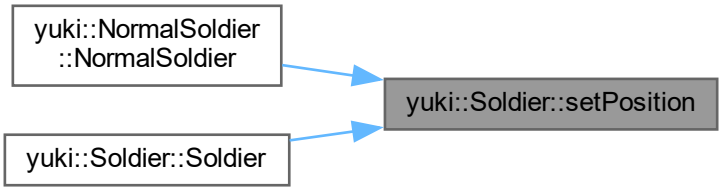
6.23.2.35 setPosition()

```
void yuki::Soldier::setPosition (
            const sf::Vector2f & position )  [inline]
```

Here is the call graph for this function:



Here is the caller graph for this function:



6.23.2.36 setSpeed()

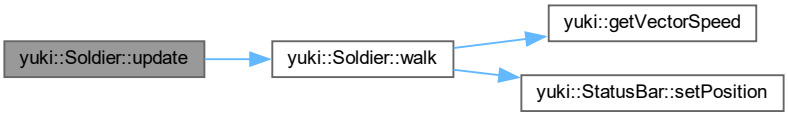
```
void yuki::Soldier::setSpeed (
            const float speed )  [inline]
```

6.23.2.37 update()

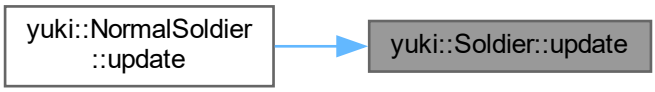
```
void Soldier::update ( ) [virtual]
```

Reimplemented in yuki::NormalSoldier, and yuki::SeniorSoldier.

Here is the call graph for this function:



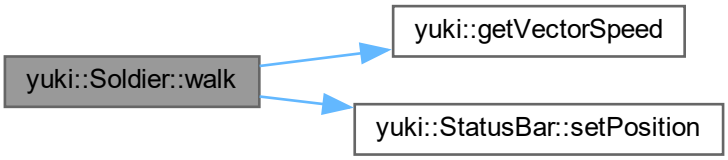
Here is the caller graph for this function:



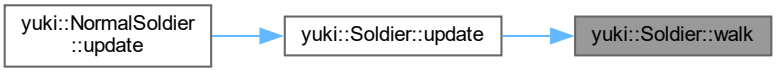
6.23.2.38 walk()

```
void Soldier::walk ( )
```

Here is the call graph for this function:



Here is the caller graph for this function:



6.23.3 Member Data Documentation

6.23.3.1 adhesion_elementum_

```
Elementum yuki::Soldier::adhesion_elementum_ = Elementum(yuki::ElementumType::None, 0.0f)
[protected]
```

6.23.3.2 camp_

```
Camp yuki::Soldier::camp_  [protected]
```

6.23.3.3 clock_

```
sf::Clock yuki::Soldier::clock_  [protected]
```

6.23.3.4 direction_

```
Direction yuki::Soldier::direction_ = Direction::Down  [protected]
```

6.23.3.5 elementum_

```
Elementum yuki::Soldier::elementum_ = Elementum(yuki::ElementumType::None, 0.0f)  [protected]
```

6.23.3.6 floating_bubble_

```
FloatingBubble yuki::Soldier::floating_bubble_ [protected]
```

6.23.3.7 floating_bubble_visible_

```
bool yuki::Soldier::floating_bubble_visible_ [protected]
```

6.23.3.8 freeze_clock_

```
sf::Clock yuki::Soldier::freeze_clock_ [protected]
```

6.23.3.9 health_bar_

```
StatusBar yuki::Soldier::health_bar_ [protected]
```

6.23.3.10 health_bar_offset_

```
sf::Vector2f yuki::Soldier::health_bar_offset_ = {0, -15} [protected]
```

6.23.3.11 is_freeze_

```
bool yuki::Soldier::is_freeze_ = false [protected]
```

6.23.3.12 is_moving_

```
bool yuki::Soldier::is_moving_ = false [protected]
```

6.23.3.13 place_offset_

```
sf::Vector2f yuki::Soldier::place_offset_ = {0, 0} [protected]
```

6.23.3.14 speed_

```
float yuki::Soldier::speed_ = 0.0f  [protected]
```

6.23.3.15 sprite_

```
sf::Sprite yuki::Soldier::sprite_  [protected]
```

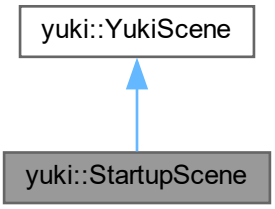
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/Soldier.hpp
- E:/Project/Yuki/src/Soldier.cpp

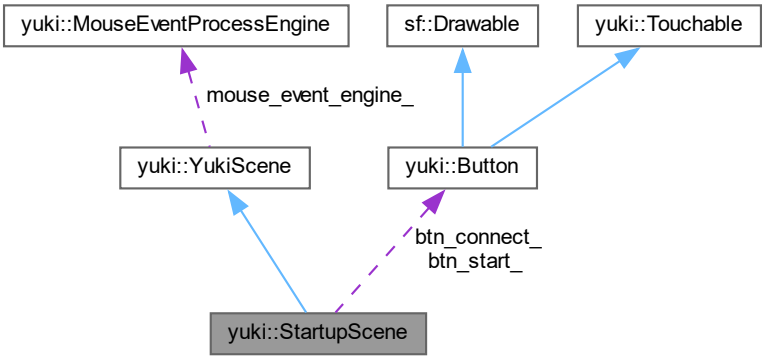
6.24 yuki::StartupScene Class Reference

```
#include <StartupScene.hpp>
```

Inheritance diagram for yuki::StartupScene:



Collaboration diagram for yuki::StartupScene:



Public Member Functions

- StartupScene (sf::RenderWindow &window)
- virtual ~StartupScene ()

Public Member Functions inherited from yuki::YukiScene

- YukiScene (sf::RenderWindow &window)
- virtual ~YukiScene ()
- virtual int show ()

Private Member Functions

- void initUi ()

Private Attributes

- Button btn_start_
- Button btn_connect_
- sf::Sprite background_
- sf::Texture background_texture_

Additional Inherited Members

Public Types inherited from yuki::YukiScene

- enum class Notify { None , End }

Protected Member Functions inherited from yuki::YukiScene

- void registerTouchableObject (Touchable *object)
- void unregisterTouchableObject (Touchable *object)
- void setReturnCode (int ret_code)
- virtual void processEvent (sf::Event event)
- virtual void draw () const =0
- virtual void updateInfo ()=0

Protected Attributes inherited from yuki::YukiScene

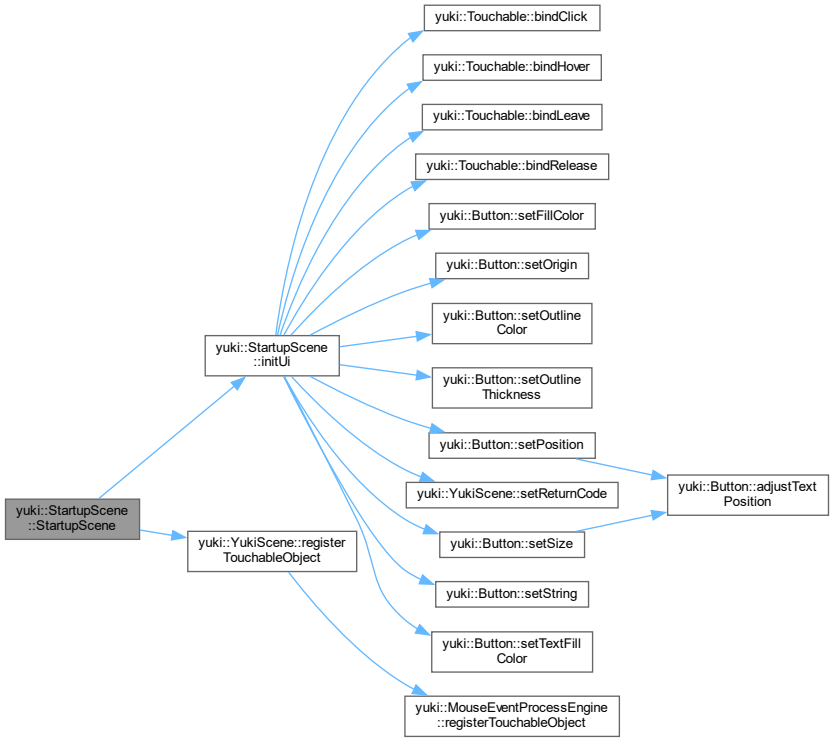
- yuki::MouseEventProcessEngine mouse_event_engine_
- Notify notify_
- int ret_code_
- sf::RenderWindow & window_

6.24.1 Constructor & Destructor Documentation

6.24.1.1 StartupScene()

```
StartupScene::StartupScene (
            sf::RenderWindow & window )
```

Here is the call graph for this function:



6.24.1.2 ~StartupScene()

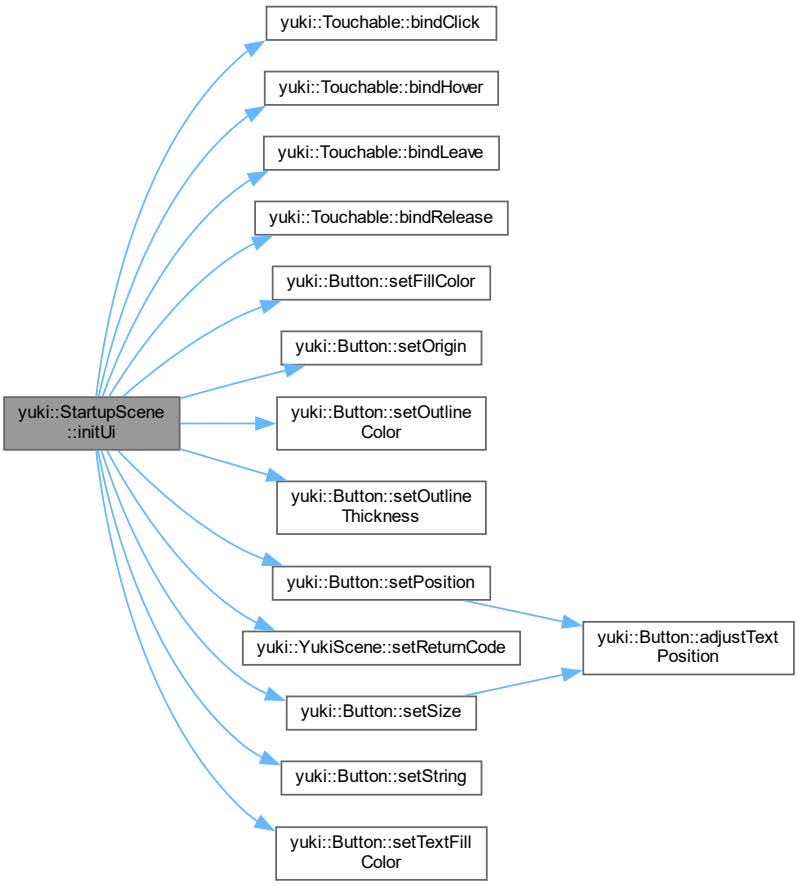
```
virtual yuki::StartupScene::~StartupScene ( )  [inline], [virtual]
```

6.24.2 Member Function Documentation

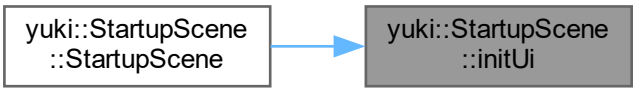
6.24.2.1 initUi()

```
void StartupScene::initUi ( ) [private]
```

Here is the call graph for this function:



Here is the caller graph for this function:



6.24.3 Member Data Documentation

6.24.3.1 background_

```
sf::Sprite yuki::StartupScene::background_ [private]
```

6.24.3.2 background_texture_

```
sf::Texture yuki::StartupScene::background_texture_ [private]
```

6.24.3.3 btn_connect_

```
Button yuki::StartupScene::btn_connect_ [private]
```

6.24.3.4 btn_start_

```
Button yuki::StartupScene::btn_start_ [private]
```

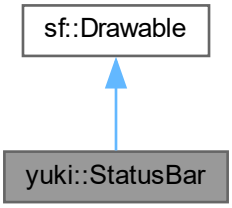
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/StartupScene.hpp
- E:/Project/Yuki/src/StartupScene.cpp

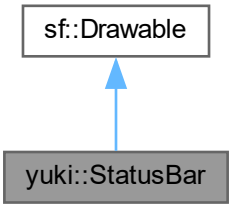
6.25 yuki::StatusBar Class Reference

```
#include <StatusBar.hpp>
```

Inheritance diagram for yuki::StatusBar:



Collaboration diagram for yuki::StatusBar:



Public Member Functions

- StatusBar ()=default
- StatusBar (sf::Vector2f size, sf::Vector2f position, sf::Color background_color=sf::Color::Black, sf::Color filled_color=sf::Color::Blue, float max_value=100.f, float current_value=100.f)
- void show ()
- void hide ()
- auto isVisible () const
- void setBackgroudColor (const sf::Color color)
- void setFilledColor (const sf::Color color)
- void setMaxValue (const float max_value)
- void setValue (const float current_value)
- void setPosition (const sf::Vector2f &position)
- void setSize (const sf::Vector2f &size)
- void setOutlineThickness (const float thickness)
- void setOutlineColor (const sf::Color &color)
- void setOutlineStyle (const sf::Color &color, const float thickness)
- const auto getBackgroundColor () const
- const auto getFilledColor () const
- constexpr auto getMaxValue () const
- constexpr auto getValue () const
- const auto getPosition () const
- void increase (const float value)
- void decrease (const float value)
- virtual ~StatusBar ()
- virtual void draw (sf::RenderTarget &target, sf::RenderStates states) const override
- void updateFilledPercentage ()

Protected Member Functions

- void setFilledPercentage (float percentage)
- void adjustIfOverflow ()

Protected Attributes

- sf::RectangleShape background_
- sf::RectangleShape filled_
- sf::Vector2f size_
- sf::Vector2f position_
- float max_value_
- float current_value_
- bool visible_

6.25.1 Constructor & Destructor Documentation

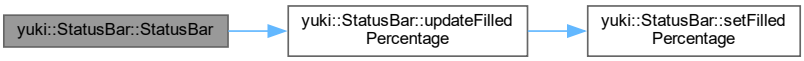
6.25.1.1 StatusBar() [1/2]

```
yuki::StatusBar::StatusBar ( ) [default]
```

6.25.1.2 StatusBar() [2/2]

```
yuki::StatusBar::StatusBar (
            sf::Vector2f size,
            sf::Vector2f position,
            sf::Color background_color = sf::Color::Black,
            sf::Color filled_color = sf::Color::Blue,
            float max_value = 100.f,
            float current_value = 100.f ) [inline]
```

Here is the call graph for this function:



6.25.1.3 ~StatusBar()

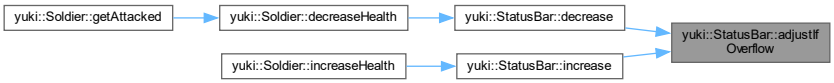
```
virtual yuki::StatusBar::~StatusBar ( ) [inline], [virtual]
```

6.25.2 Member Function Documentation

6.25.2.1 adjustIfOverflow()

```
void StatusBar::adjustIfOverflow ( )  [protected]
```

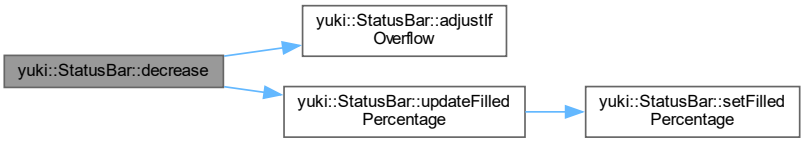
Here is the caller graph for this function:



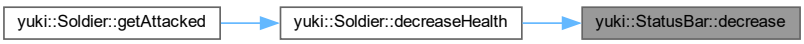
6.25.2.2 decrease()

```
void StatusBar::decrease (
            const float value )
```

Here is the call graph for this function:



Here is the caller graph for this function:



6.25.2.3 draw()

```
void StatusBar::draw (
            sf::RenderTarget & target,
            sf::RenderStates states ) const  [override], [virtual]
```

6.25.2.4 getBackgroundColor()

```
const auto yuki::StatusBar::getBackgroundColor ( ) const  [inline]
```

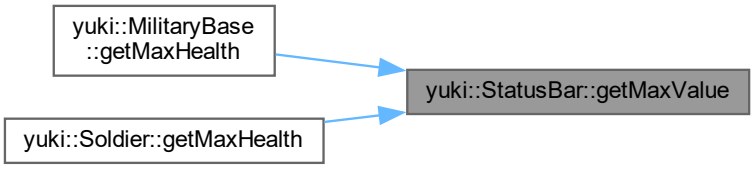
6.25.2.5 getFilledColor()

```
const auto yuki::StatusBar::getFilledColor ( ) const  [inline]
```

6.25.2.6 getMaxValue()

```
constexpr auto yuki::StatusBar::getMaxValue ( ) const  [inline], [constexpr]
```

Here is the caller graph for this function:



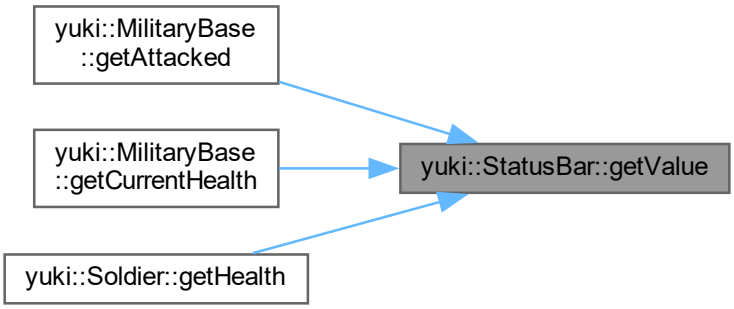
6.25.2.7 getPosition()

```
const auto yuki::StatusBar::getPosition ( ) const  [inline]
```

6.25.2.8 getValue()

```
constexpr auto yuki::StatusBar::getValue ( ) const  [inline], [constexpr]
```

Here is the caller graph for this function:



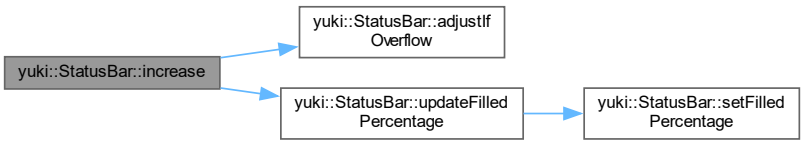
6.25.2.9 hide()

```
void yuki::StatusBar::hide ( )  [inline]
```

6.25.2.10 increase()

```
void StatusBar::increase (
            const float value )
```

Here is the call graph for this function:



Here is the caller graph for this function:

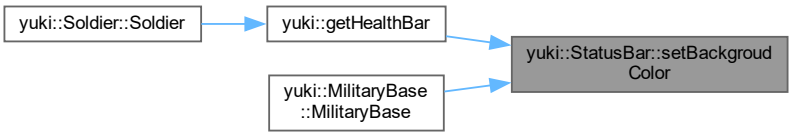
6.25.2.11 isVisible()

```
auto yuki::StatusBar::isVisible ( ) const  [inline]
```

6.25.2.12 setBackgroudColor()

```
void yuki::StatusBar::setBackgroudColor (
            const sf::Color color )  [inline]
```

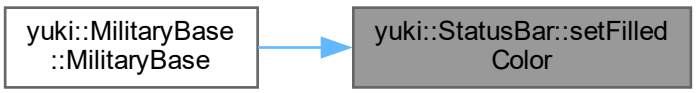
Here is the caller graph for this function:



6.25.2.13 setFilledColor()

```
void yuki::StatusBar::setFilledColor (
            const sf::Color color )  [inline]
```

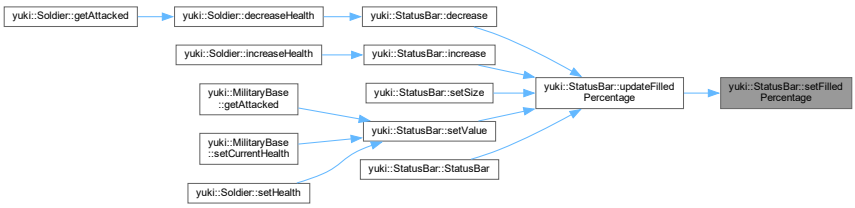
Here is the caller graph for this function:



6.25.2.14 setFilledPercentage()

```
void StatusBar::setFilledPercentage (
            float percentage )  [protected]
```

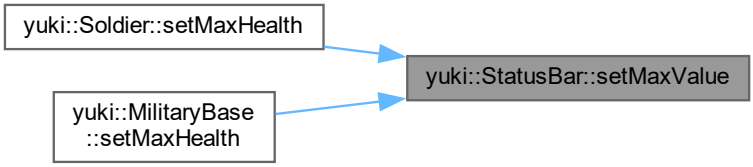
Here is the caller graph for this function:



6.25.2.15 setMaxValue()

```
void yuki::StatusBar::setMaxValue (
            const float max_value )  [inline]
```

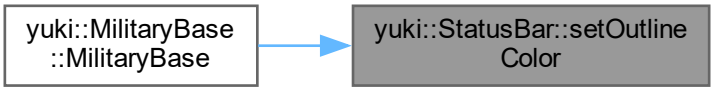
Here is the caller graph for this function:



6.25.2.16 setOutlineColor()

```
void yuki::StatusBar::setOutlineColor (
            const sf::Color & color )  [inline]
```

Here is the caller graph for this function:



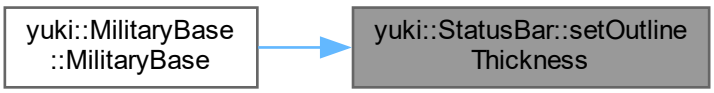
6.25.2.17 setOutlineStyle()

```
void yuki::StatusBar::setOutlineStyle (
            const sf::Color & color,
            const float thickness )  [inline]
```

6.25.2.18 setOutlineThickness()

```
void yuki::StatusBar::setOutlineThickness (
            const float thickness )  [inline]
```

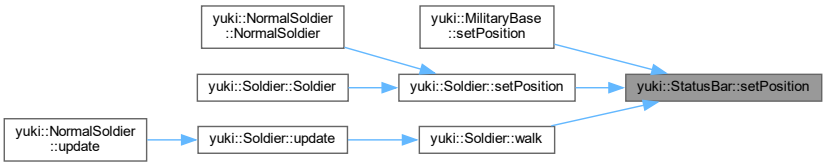
Here is the caller graph for this function:



6.25.2.19 setPosition()

```
void StatusBar::setPosition (
            const sf::Vector2f & position )
```

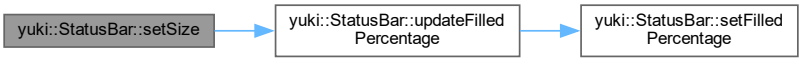
Here is the caller graph for this function:



6.25.2.20 setSize()

```
void yuki::StatusBar::setSize (
            const sf::Vector2f & size )  [inline]
```

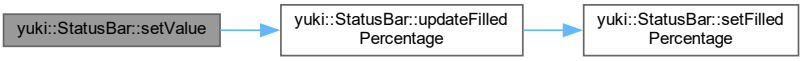
Here is the call graph for this function:



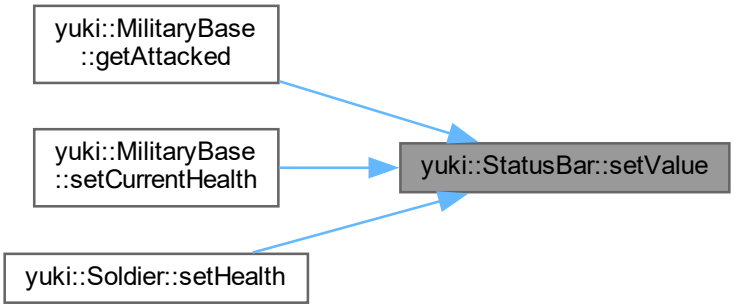
6.25.2.21 setValue()

```
void yuki::StatusBar::setValue (
            const float current_value )  [inline]
```

Here is the call graph for this function:



Here is the caller graph for this function:



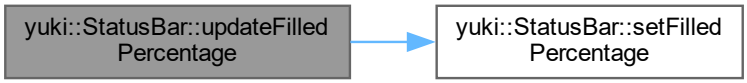
6.25.2.22 show()

```
void yuki::StatusBar::show ( ) [inline]
```

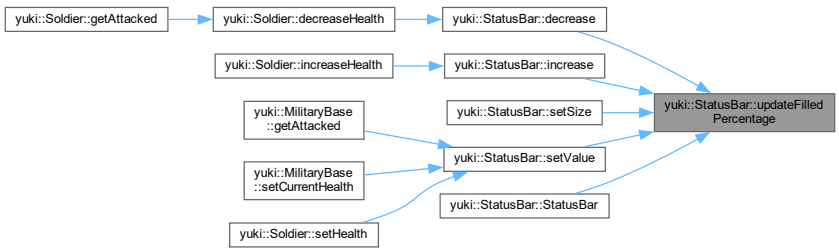
6.25.2.23 updateFilledPercentage()

```
void yuki::StatusBar::updateFilledPercentage ( ) [inline]
```

Here is the call graph for this function:



Here is the caller graph for this function:



6.25.3 Member Data Documentation

6.25.3.1 background_

```
sf::RectangleShape yuki::StatusBar::background_ [protected]
```

6.25.3.2 current_value_

```
float yuki::StatusBar::current_value_ [protected]
```

6.25.3.3 filled_

```
sf::RectangleShape yuki::StatusBar::filled_ [protected]
```

6.25.3.4 max_value_

```
float yuki::StatusBar::max_value_ [protected]
```

6.25.3.5 position_

```
sf::Vector2f yuki::StatusBar::position_ [protected]
```

6.25.3.6 size_

```
sf::Vector2f yuki::StatusBar::size_ [protected]
```

6.25.3.7 visible_

```
bool yuki::StatusBar::visible_ [protected]
```

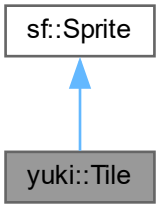
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/StatusBar.hpp
- E:/Project/Yuki/src/StatusBar.cpp

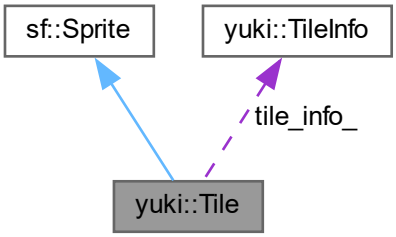
6.26 yuki::Tile Class Reference

```
#include <Tile.hpp>
```

Inheritance diagram for yuki::Tile:



Collaboration diagram for yuki::Tile:



Public Member Functions

- auto getTileInfo () const
- void setTileInfo (TileInfo &&tile_info)
- void setTileInfo (const TileInfo &tile_info)
- void setTextureSrc (const std::string &src_location)

Private Attributes

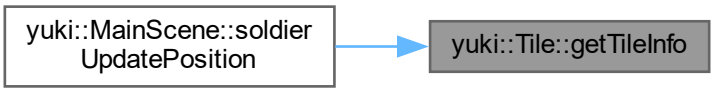
- TileInfo tile_info_
- sf::Texture texture_

6.26.1 Member Function Documentation

6.26.1.1 getTileInfo()

```
auto yuki::Tile::getTileInfo ( ) const  [inline]
```

Here is the caller graph for this function:



6.26.1.2 setTextureSrc()

```
void yuki::Tile::setTextureSrc (
            const std::string & src_location )  [inline]
```

6.26.1.3 setTileInfo() [1/2]

```
void yuki::Tile::setTileInfo (
            const TileInfo & tile_info )  [inline]
```

6.26.1.4 setTileInfo() [2/2]

```
void yuki::Tile::setTileInfo (
            TileInfo && tile_info )  [inline]
```

6.26.2 Member Data Documentation

6.26.2.1 texture_

```
sf::Texture yuki::Tile::texture_  [private]
```

6.26.2.2 tile_info_

```
TileInfo yuki::Tile::tile_info_ [private]
```

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

- E:/Project/Yuki/include/Tile.hpp

6.27 yuki::TileInfo Struct Reference

```
#include <Tile.hpp>
```

Public Member Functions

- TileInfo ()=default
- TileInfo (TileCategory category, int index)

Public Attributes

- TileCategory category
- int index

6.27.1 Constructor & Destructor Documentation

6.27.1.1 TileInfo() [1/2]

```
yuki::TileInfo::TileInfo ( ) [default]
```

6.27.1.2 TileInfo() [2/2]

```
yuki::TileInfo::TileInfo (
            TileCategory category,
            int index ) [inline]
```

6.27.2 Member Data Documentation

6.27.2.1 category

```
TileCategory yuki::TileInfo::category
```

6.27.2.2 index

```
int yuki::TileInfo::index
```

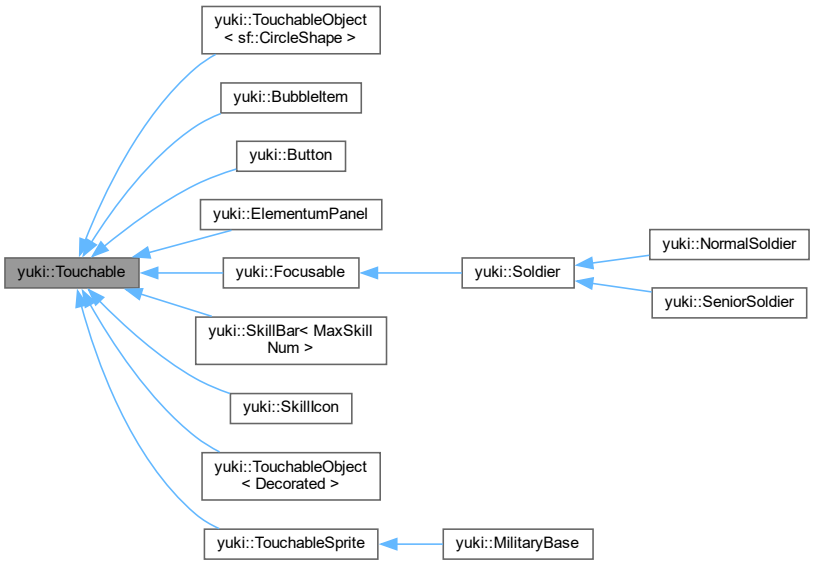
The documentation for this struct was generated from the following file:

- E:/Project/Yuki/include/Tile.hpp

6.28 yuki::Touchable Class Reference

```
#include <InteractiveObject.hpp>
```

Inheritance diagram for yuki::Touchable:



Public Types

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Public Member Functions

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Protected Attributes

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.28.1 Member Typedef Documentation

6.28.1.1 Callback

```
using yuki::Touchable::Callback = std::function<void(sf::Event e)>
```

6.28.2 Member Enumeration Documentation

6.28.2.1 Action

```
enum class yuki::Touchable::Action [strong]
```

Enumerator

Click	
Release	
Hover	
Leave	

6.28.3 Constructor & Destructor Documentation

6.28.3.1 Touchable()

```
yuki::Touchable::Touchable ( ) [default]
```

6.28.3.2 ~Touchable()

```
virtual yuki::Touchable::~Touchable ( ) [inline], [virtual]
```

6.28.4 Member Function Documentation

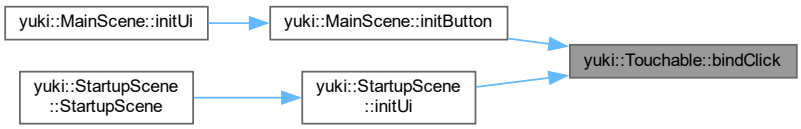
6.28.4.1 bindAction()

```
void Touchable::bindAction (
            const Action action,
            Callback callback )
```

6.28.4.2 bindClick()

```
void yuki::Touchable::bindClick (
            Callback callback ) [inline]
```

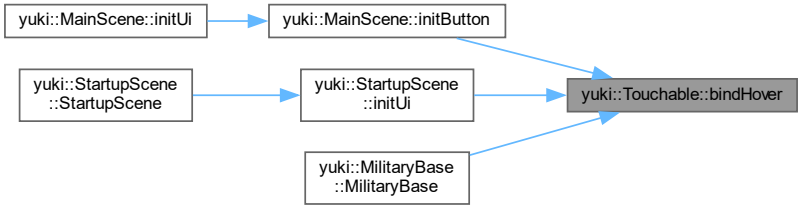
Here is the caller graph for this function:



6.28.4.3 bindHover()

```
void yuki::Touchable::bindHover (
            Callback callback )  [inline]
```

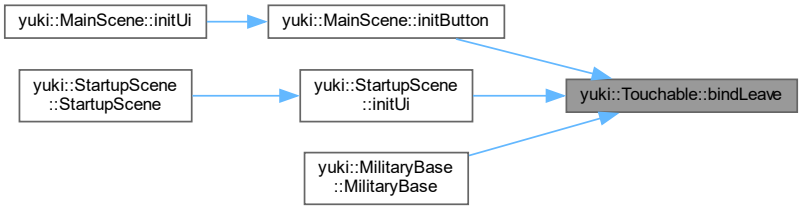
Here is the caller graph for this function:



6.28.4.4 bindLeave()

```
void yuki::Touchable::bindLeave (
            Callback callback )  [inline]
```

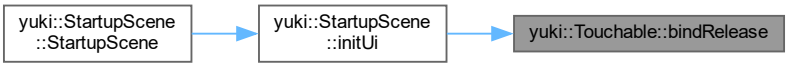
Here is the caller graph for this function:



6.28.4.5 bindRelease()

```
void yuki::Touchable::bindRelease (
            Callback callback )  [inline]
```

Here is the caller graph for this function:

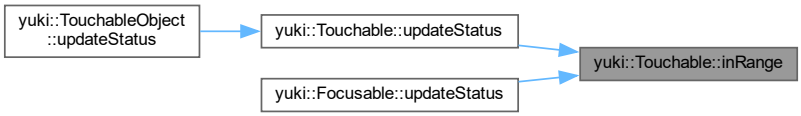


6.28.4.6 inRange()

```
virtual bool yuki::Touchable::inRange (
            const sf::Vector2f & position ) const  [pure virtual]
```

Implemented in yuki::TouchableObject< Decorated >, yuki::TouchableObject< sf::CircleShape >, and yuki::TouchableSprite.

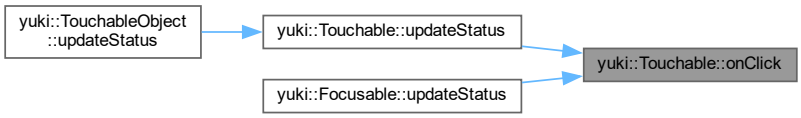
Here is the caller graph for this function:



6.28.4.7 onClick()

```
virtual void yuki::Touchable::onClick (
            sf::Event e )  [inline], [virtual]
```

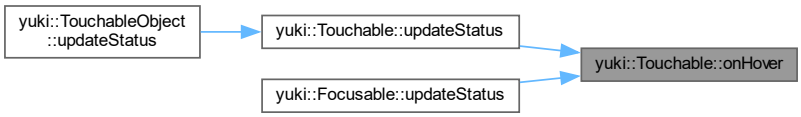
Here is the caller graph for this function:



6.28.4.8 onHover()

```
virtual void yuki::Touchable::onHover (
            sf::Event e )  [inline], [virtual]
```

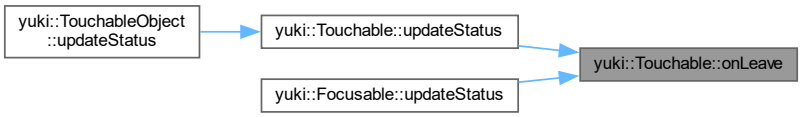
Here is the caller graph for this function:



6.28.4.9 onLeave()

```
virtual void yuki::Touchable::onLeave (
            sf::Event e )  [inline], [virtual]
```

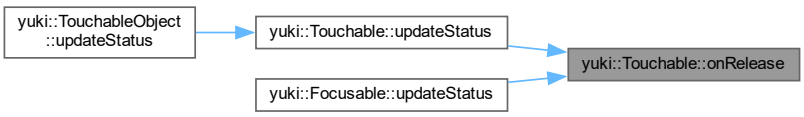
Here is the caller graph for this function:



6.28.4.10 onRelease()

```
virtual void yuki::Touchable::onRelease (
            sf::Event e )  [inline], [virtual]
```

Here is the caller graph for this function:

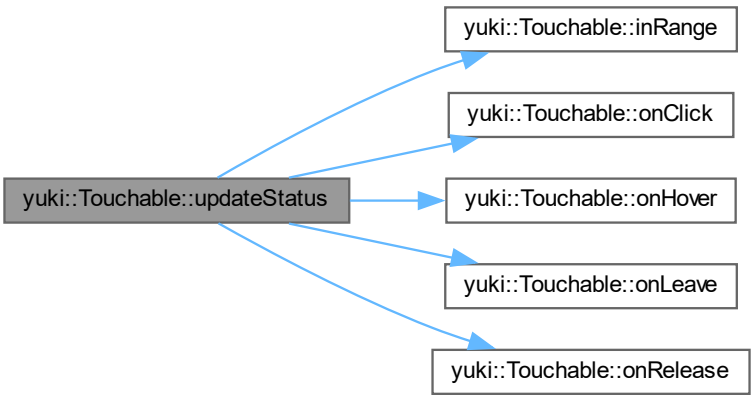


6.28.4.11 updateStatus()

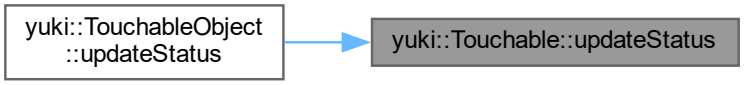
```
void Touchable::updateStatus (
            sf::Event event )  [virtual]
```

Reimplemented in yuki::Focusable, yuki::TouchableObject< Decorated >, and yuki::TouchableObject< sf::CircleShape >.

Here is the call graph for this function:



Here is the caller graph for this function:



6.28.5 Member Data Documentation

6.28.5.1 is_clicked_

```
bool yuki::Touchable::is_clicked_ = false  [protected]
```

6.28.5.2 is_hovered_

```
bool yuki::Touchable::is_hovered_ = false  [protected]
```

6.28.5.3 on_clickCallback_

```
Callback yuki::Touchable::on_clickCallback_ = [](sf::Event) {}  [protected]
```

6.28.5.4 on_hoverCallback_

```
Callback yuki::Touchable::on_hoverCallback_ = [](sf::Event) {}  [protected]
```

6.28.5.5 on_leaveCallback_

```
Callback yuki::Touchable::on_leaveCallback_ = [](sf::Event) {}  [protected]
```

6.28.5.6 on_releaseCallback_

```
Callback yuki::Touchable::on_releaseCallback_ = [](sf::Event) {}  [protected]
```

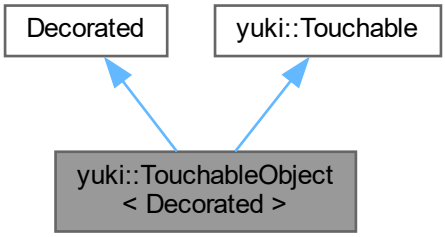
The documentation for this class was generated from the following files:

- E:/Project/Yuki/include/InteractiveObject.hpp
- E:/Project/Yuki/src/InteractiveObject.cpp

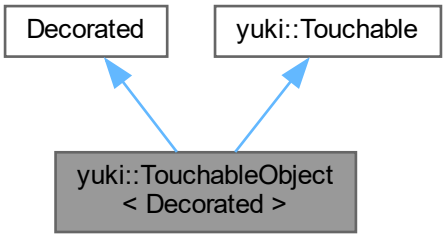
6.29 yuki::TouchableObject< Decorated > Class Template Reference

```
#include <InteractiveObject.hpp>
```

Inheritance diagram for yuki::TouchableObject< Decorated >:



Collaboration diagram for yuki::TouchableObject< Decorated >:



Public Member Functions

- TouchableObject ()=default
- virtual ~TouchableObject ()
- virtual bool inRange (const sf::Vector2f &position) const override
- virtual void updateStatus (sf::Event event) override

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)

- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)
- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Additional Inherited Members

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.29.1 Constructor & Destructor Documentation

6.29.1.1 TouchableObject()

```
template<class Decorated >
yuki::TouchableObject< Decorated >::TouchableObject ( )  [default]
```

6.29.1.2 ~TouchableObject()

```
template<class Decorated >
virtual yuki::TouchableObject< Decorated >::~TouchableObject ( )  [inline], [virtual]
```

6.29.2 Member Function Documentation

6.29.2.1 inRange()

```
template<class Decorated >
virtual bool yuki::TouchableObject< Decorated >::inRange (
            const sf::Vector2f & position ) const  [inline], [override], [virtual]
```

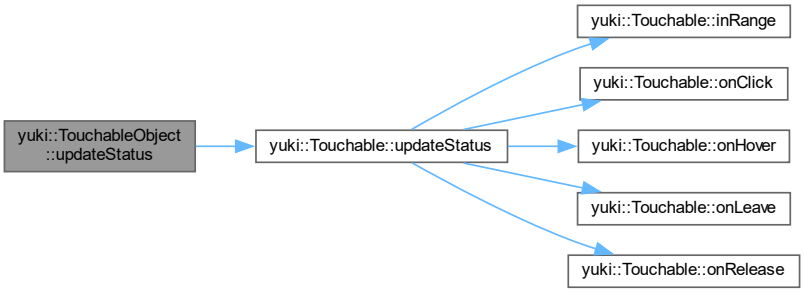
Implements yuki::Touchable.

6.29.2.2 updateStatus()

```
template<class Decorated >
virtual void yuki::TouchableObject< Decorated >::updateStatus (
            sf::Event event )  [inline], [override], [virtual]
```

Reimplemented from yuki::Touchable.

Here is the call graph for this function:



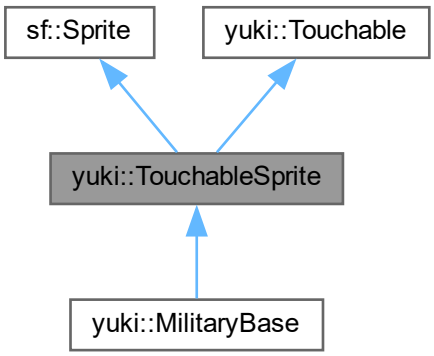
The documentation for this class was generated from the following file:

- E:/Project/Yuki/include/InteractiveObject.hpp

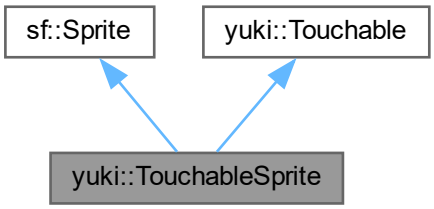
6.30 yuki::TouchableSprite Class Reference

```
#include <TouchableSprite.hpp>
```

Inheritance diagram for yuki::TouchableSprite:



Collaboration diagram for yuki::TouchableSprite:



Public Member Functions

- TouchableSprite ()=default
- TouchableSprite (const sf::Texture &texture)
- TouchableSprite (const sf::Texture &texture, const sf::IntRect &rect)
- virtual ~TouchableSprite ()

Public Member Functions inherited from yuki::Touchable

- Touchable ()=default
- virtual ~Touchable ()
- virtual void onRelease (sf::Event e)
- virtual void onClick (sf::Event e)
- virtual void onHover (sf::Event e)
- virtual void onLeave (sf::Event e)
- void bindAction (const Action action, Callback callback)

- void bindClick (Callback callback)
- void bindRelease (Callback callback)
- void bindHover (Callback callback)
- void bindLeave (Callback callback)
- virtual bool inRange (const sf::Vector2f &position) const =0
- virtual void updateStatus (sf::Event event)

Private Member Functions

- virtual bool inRange (const sf::Vector2f &position) const override

Additional Inherited Members

Public Types inherited from yuki::Touchable

- enum class Action { Click , Release , Hover , Leave }
- using Callback = std::function< void(sf::Event e)>

Protected Attributes inherited from yuki::Touchable

- bool is_clicked_ = false
- bool is_hovered_ = false
- Callback on_clickCallback_ = [ ](sf::Event) {}
- Callback on_releaseCallback_ = [ ](sf::Event) {}
- Callback on_hoverCallback_ = [ ](sf::Event) {}
- Callback on_leaveCallback_ = [ ](sf::Event) {}

6.30.1 Constructor & Destructor Documentation

6.30.1.1 TouchableSprite() [1/3]

```
yuki::TouchableSprite::TouchableSprite ( ) [default]
```

6.30.1.2 TouchableSprite() [2/3]

```
yuki::TouchableSprite::TouchableSprite (
            const sf::Texture & texture ) [inline]
```

6.30.1.3 TouchableSprite() [3/3]

```
yuki::TouchableSprite::TouchableSprite (
            const sf::Texture & texture,
            const sf::IntRect & rect )  [inline]
```

6.30.1.4 ~TouchableSprite()

```
virtual yuki::TouchableSprite::~TouchableSprite ( )  [inline], [virtual]
```

6.30.2 Member Function Documentation

6.30.2.1 inRange()

```
virtual bool yuki::TouchableSprite::inRange (
            const sf::Vector2f & position ) const  [inline], [override], [private], [virtual]
```

Implements yuki::Touchable.

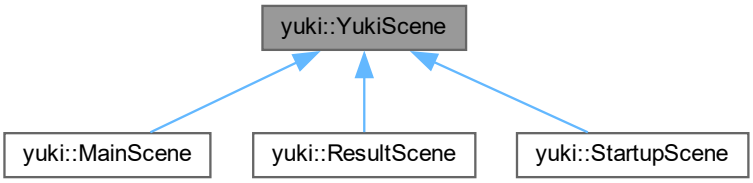
The documentation for this class was generated from the following file:

- E:/Project/Yuki/include/TouchableSprite.hpp

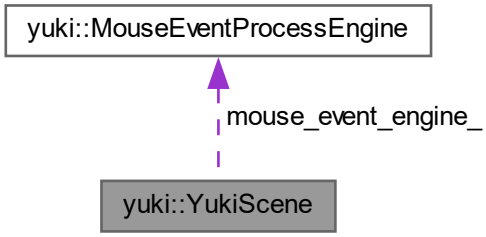
6.31 yuki::YukiScene Class Reference

```
#include <YukiScene.hpp>
```

Inheritance diagram for yuki::YukiScene:



Collaboration diagram for yuki::YukiScene:



Public Types

- enum class Notify { None , End }

Public Member Functions

- YukiScene (sf::RenderWindow &window)
- virtual ~YukiScene ()
- virtual int show ()

Protected Member Functions

- void registerTouchableObject (Touchable *object)
- void unregisterTouchableObject (Touchable *object)
- void setReturnCode (int ret_code)
- virtual void processEvent (sf::Event event)
- virtual void draw () const =0
- virtual void updateInfo ()=0

Protected Attributes

- yuki::MouseEventProcessEngine mouse_event_engine_
- Notify notify_
- int ret_code_
- sf::RenderWindow & window_

6.31.1 Member Enumeration Documentation

6.31.1.1 Notify

```
enum class yuki::YukiScene::Notify  [strong]
```

Enumerator

None	
End	

6.31.2 Constructor & Destructor Documentation

6.31.2.1 YukiScene()

```
yuki::YukiScene::YukiScene (
            sf::RenderWindow & window )  [inline]
```

6.31.2.2 ~YukiScene()

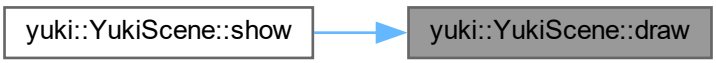
```
YukiScene::~YukiScene ( )  [virtual]
```

6.31.3 Member Function Documentation

6.31.3.1 draw()

```
virtual void yuki::YukiScene::draw ( ) const  [protected], [pure virtual]
```

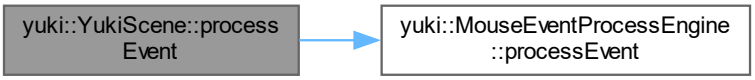
Here is the caller graph for this function:



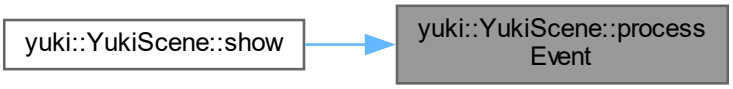
6.31.3.2 processEvent()

```
void YukiScene::processEvent (
            sf::Event event )  [protected], [virtual]
```

Here is the call graph for this function:



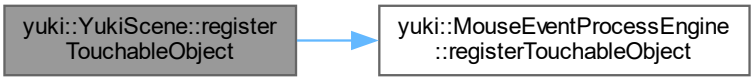
Here is the caller graph for this function:



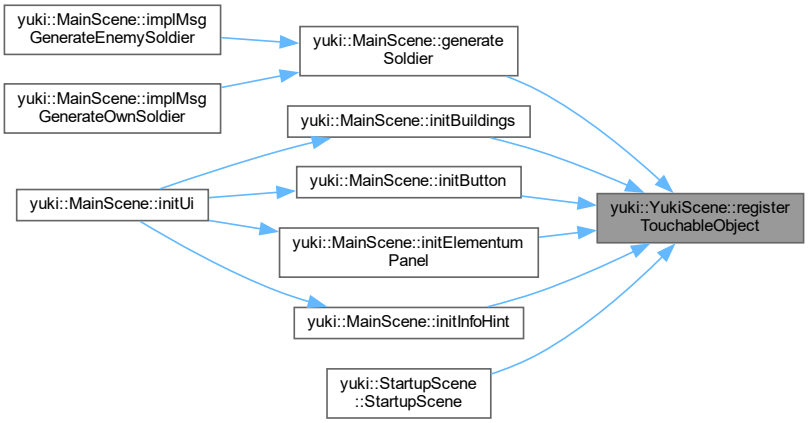
6.31.3.3 registerTouchableObject()

```
void yuki::YukiScene::registerTouchableObject (
            Touchable * object )  [inline], [protected]
```

Here is the call graph for this function:



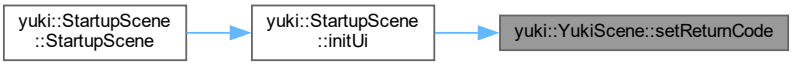
Here is the caller graph for this function:



6.31.3.4 setReturnCode()

```
void yuki::YukiScene::setReturnCode (
            int ret_code )  [inline], [protected]
```

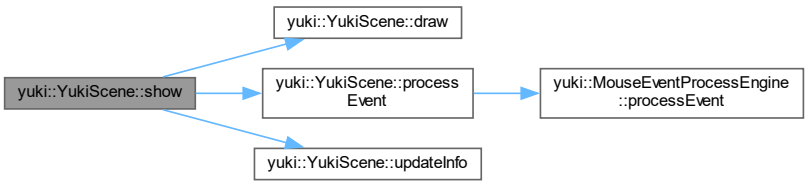
Here is the caller graph for this function:



6.31.3.5 show()

```
int YukiScene::show ( )  [virtual]
```

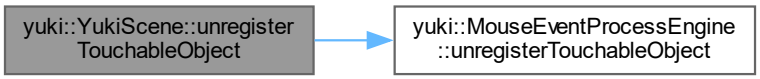
Here is the call graph for this function:



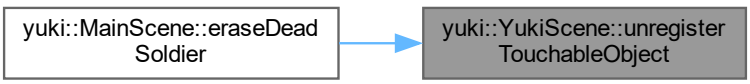
6.31.3.6 unregisterTouchableObject()

```
void yuki::YukiScene::unregisterTouchableObject (
            Touchable * object )  [inline], [protected]
```

Here is the call graph for this function:



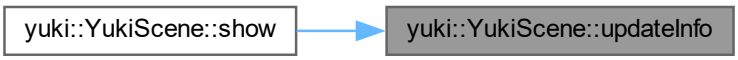
Here is the caller graph for this function:



6.31.3.7 updateInfo()

```
virtual void yuki::YukiScene::updateInfo ( )  [protected], [pure virtual]
```

Here is the caller graph for this function:



6.31.4 Member Data Documentation

6.31.4.1 mouse_event_engine_

```
yuki::MouseEventProcessEngine yuki::YukiScene::mouse_event_engine_ [protected]
```

6.31.4.2 notify_

```
Notify yuki::YukiScene::notify_ [protected]
```

6.31.4.3 ret_code_

```
int yuki::YukiScene::ret_code_ [protected]
```

6.31.4.4 window_

```
sf::RenderWindow& yuki::YukiScene::window_ [protected]
```

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

- E:/Project/Yuki/include/YukiScene.hpp
- E:/Project/Yuki/src/YukiScene.cpp

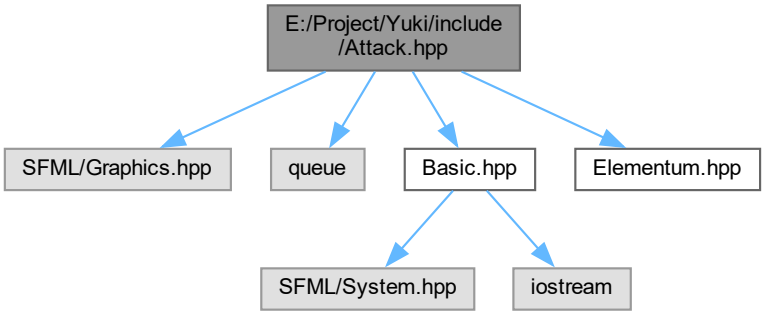
Chapter 7

File Documentation

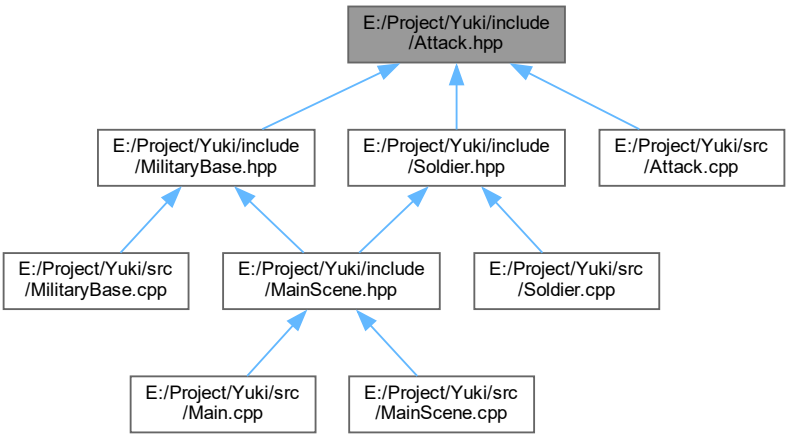
7.1 E:/Project/Yuki/include/Attack.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include <queue>
#include "Basic.hpp"
#include "Elementum.hpp"
```

Include dependency graph for Attack.hpp:



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



Classes

- struct yuki::AttackInfo
- class yuki::BasicAttack
- class yuki::GranuleAttack

Namespaces

- namespace yuki

7.2 Attack.hpp

Go to the documentation of this file.

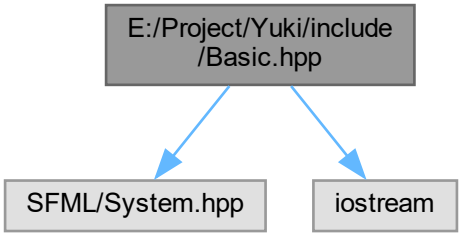
```
#ifndef ATTACK_HPP
#define ATTACK_HPP

#include <SFML/Graphics.hpp>
#include <queue>

#include "Basic.hpp"
#include "Elementum.hpp"

namespace yuki {

struct AttackInfo {
  ElementumType elementum_type;
  float elementum_level;
  float damage;

  AttackInfo(ElementumType elementum_type = ElementumType::None,
             float elementum_level = 0.0f, float damage = 0.0f)
      : elementum_type(elementum_type),
        elementum_level(elementum_level),
        damage(damage) {}
};

class BasicAttack {
 public:
  BasicAttack() = default;
  BasicAttack(ElementumType elementum_type, float elementum_level,
```

```
                float damage) {
    info_.elementum_type = elementum_type;
    info_.elementum_level = elementum_level;
    info_.damage = damage;
  }
  BasicAttack(const AttackInfo& info) : info_(info) {}

  const auto& getAttackInfo() const { return info_; }

  const auto getElementum() const {
    return Elementum(info_.elementum_type, info_.elementum_level);
  }
  const auto getDamage() const { return info_.damage; }

  virtual ~BasicAttack() {}

 protected:
  AttackInfo info_;
};

class GranuleAttack : public BasicAttack, public sf::Drawable {
 public:
  GranuleAttack() { updateGranule(); }
  GranuleAttack(const sf::Vector2f& position, float speed, Direction direction,
                const AttackInfo& attck_info)
      : BasicAttack(attck_info) {
    speed_ = speed;
    direction_ = direction;
    granule_.setPosition(position);
    updateGranule();
  }

  virtual ~GranuleAttack() {}

  virtual void draw(sf::RenderTarget& target,
                    sf::RenderStates states) const override;

  virtual void update();

  auto getPosition() const { return granule_.getPosition(); }

 protected:
  sf::CircleShape granule_;
  float speed_;
  Direction direction_;

  void updateGranule();
};

}  // namespace yuki

#endif  // ATTACK_HPP
```

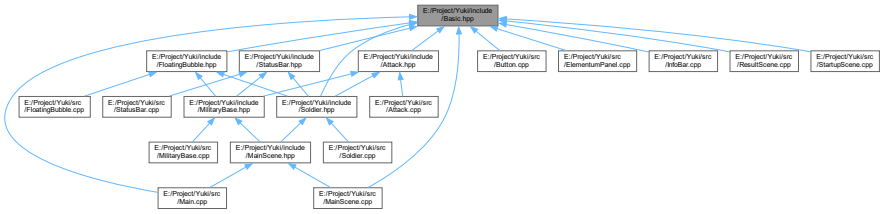
7.3 E:/Project/Yuki/include/Basic.hpp File Reference

```
#include <SFML/System.hpp>
#include <iostream>
```

Include dependency graph for Basic.hpp:



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



Namespaces

- namespace yuki
- namespace yuki::GameFont
- namespace yuki::YukiColor

Enumerations

- enum class yuki::Direction {
  yuki::Down = 0 , yuki::Left , yuki::Right , yuki::Up ,
  yuki::Other }
- enum class yuki::Camp { yuki::Own , yuki::Enemy , yuki::Other }

Functions

- auto yuki::isOppositeDirection (const Direction direction1, const Direction direction2)
- auto yuki::GameFont::initFont (const sf::String &font_path)
- static const sf::Color yuki::YukiColor::Transparent_50 (255, 255, 255, 128)
- static const sf::Color yuki::YukiColor::Transparent (255, 255, 255, 0)
- static const sf::Color yuki::YukiColor::Transparent_25 (255, 255, 255, 192)
- static const sf::Color yuki::YukiColor::Transparent_75 (255, 255, 255, 64)
- static const sf::Color yuki::YukiColor::Normal (255, 255, 255, 255)
- static const sf::Color yuki::YukiColor::Gray (128, 128, 128, 255)
- sf::Vector2f yuki::getVectorSpeed (const Direction direction, const float speed)

Variables

- constexpr auto yuki::kWindowWidth = 960
- constexpr auto yuki::kWindowHeight = 640
- static const auto yuki::GameFont::DefaultFont = initFont("assets/font/ARLRDBD.ttf")

7.4 Basic.hpp

Go to the documentation of this file.

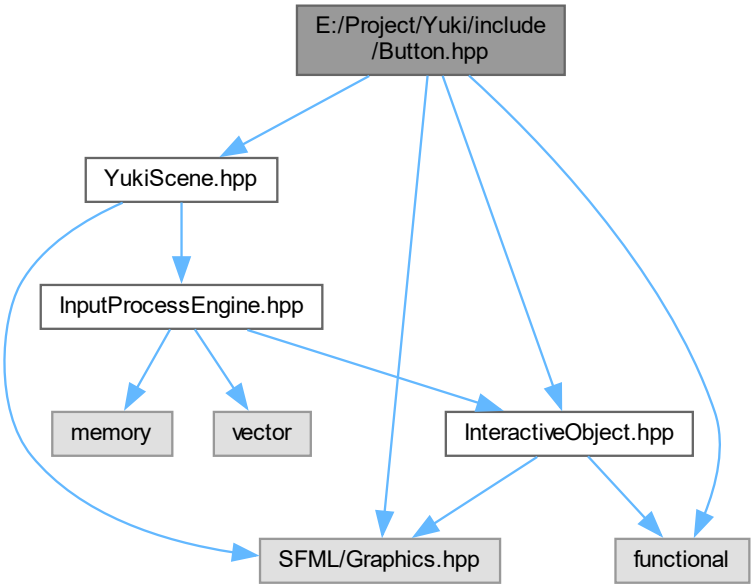
```
#ifndef BASIC_HPP
#define BASIC_HPP

#include <SFML/System.hpp>
#include <iostream>

namespace yuki {

constexpr auto kWindowWidth = 960;
constexpr auto kWindowHeight = 640;

enum class Direction { Down = 0, Left, Right, Up, Other };

inline auto isOppositeDirection(const Direction direction1,
                                const Direction direction2) {
  return (direction1 == Direction::Down && direction2 == Direction::Up) ||
         (direction1 == Direction::Up && direction2 == Direction::Down) ||
         (direction1 == Direction::Left && direction2 == Direction::Right) ||
         (direction1 == Direction::Right && direction2 == Direction::Left);
}

enum class Camp { Own, Enemy, Other };

namespace GameFont {
inline auto initFont(const sf::String& font_path) {
  sf::Font font;
  font.loadFromFile(font_path);
  if (font.getInfo().family == "") {
    std::cerr « "Font not found" « std::endl;
    throw std::runtime_error("Font not found");
  } else {
    std::cout « "Font loaded: " « font.getInfo().family « std::endl;
  }
  return font;
}

const static auto DefaultFont = initFont("assets/font/ARLRDBD.ttf");
}  // namespace GameFont

namespace YukiColor {
const static sf::Color Transparent_50(255, 255, 255, 128);
const static sf::Color Transparent(255, 255, 255, 0);
const static sf::Color Transparent_25(255, 255, 255, 192);
const static sf::Color Transparent_75(255, 255, 255, 64);
const static sf::Color Normal(255, 255, 255, 255);
const static sf::Color Gray(128, 128, 128, 255);
}  // namespace YukiColor

inline sf::Vector2f getVectorSpeed(const Direction direction,
                                   const float speed) {
  switch (direction) {
    case Direction::Down:
      return sf::Vector2f(0.f, speed);
    case Direction::Left:
      return sf::Vector2f(-speed, 0.f);
    case Direction::Right:
      return sf::Vector2f(speed, 0.f);
    case Direction::Up:
      return sf::Vector2f(0.f, -speed);
    default:
      return sf::Vector2f(0.f, 0.f);
  }
}

}  // namespace yuki

#endif
```

7.5 E:/Project/Yuki/include/Button.hpp File Reference

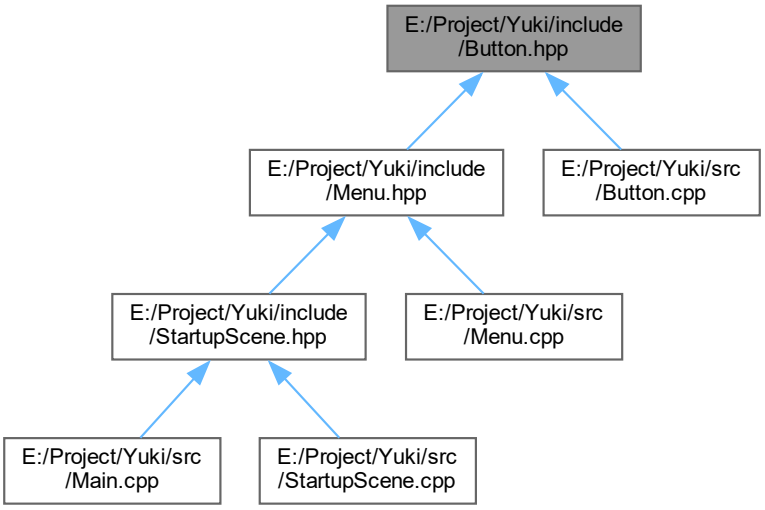
```
#include <SFML/Graphics.hpp>
#include <functional>
#include "InteractiveObject.hpp"
```

```
#include "YukiScene.hpp"
```

Include dependency graph for Button.hpp:



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



Classes

- class yuki::Button

Namespaces

- namespace yuki

7.6 Button.hpp

Go to the documentation of this file.

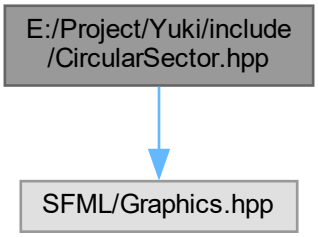
```
#ifndef BUTTON_HPP
#define BUTTON_HPP

#include <SFML/Graphics.hpp>
#include <functional>

#include "InteractiveObject.hpp"
#include "YukiScene.hpp"


namespace yuki {

class Button : public sf::Drawable, public Touchable {
 public:
  enum class Alignment { Left, Center, Right };

  Button();
  Button(const sf::Vector2f& size);
  Button(const sf::String& text, const Alignment alignment = Alignment::Center);
  Button(const sf::Vector2f& size, const sf::String& text,
         const Alignment Alignment = Alignment::Center);
  // template <typename... Args>
  // Button(YukiScene& scene, Args&&... args)
  //     : Button(std::forward<Args>(args)...) {
  //   scene.registerTouchableObject(this);
  // }

  virtual ~Button();

  // Interact
  TOUCHABLE_OBJECT(Button)

  // Background
  void setSize(const sf::Vector2f& size) {
    shape_.setSize(size);
    adjustTextPosition();
  }
  const auto getSize() const { return shape_.getSize(); }

  void setPosition(const sf::Vector2f& position) {
    shape_.setPosition(position);
    adjustTextPosition();
  }
  void setPosition(float x, float y) { setPosition(sf::Vector2f(x, y)); }

  const auto getPosition() const { return shape_.getPosition(); }

  void setFillColor(const sf::Color& color) { shape_.setFillColor(color); }

  void setOutlineColor(const sf::Color& color) {
    shape_.setOutlineColor(color);
  }

  void setOutlineThickness(float thickness) {
    shape_.setOutlineThickness(thickness);
  }

  void setOrigin(const sf::Vector2f& origin) {
    shape_.setOrigin(origin);
    text_.setOrigin(origin);
  }
  const auto getOrigin() const { return shape_.getOrigin(); }

  void setTexture(const sf::Texture* texture) { shape_.setTexture(texture); }
  const auto getTexture() const { return shape_.getTexture(); }

  void setTextureRect(const sf::IntRect& rect) { shape_.setTextureRect(rect); }

  // Text
  void setString(const sf::String& text) { text_.setString(text); }
  const auto getString() const { return text_.getString(); }
  void setTextSize(unsigned int size) { text_.setCharacterSize(size); }
  void setTextFont(const sf::Font& font) { text_.setFont(font); }
```

```
  void setTextFillColor(const sf::Color& color) { text_.setFillColor(color); }
  void setTextOutlineColor(const sf::Color& color) {
    text_.setOutlineColor(color);
  }
  void setTextOutlineThickness(float thickness) {
    text_.setOutlineThickness(thickness);
  }
  void setTextAlignment(Alignment alignment) {
    alignment_ = alignment;
    adjustTextPosition();
  }

  void autoAdjustTextSize();

  virtual void draw(sf::RenderTarget& target,
                    sf::RenderStates states) const override;

 protected:
  sf::RectangleShape shape_;
  sf::Text text_;

  Alignment alignment_ = Alignment::Center;
  void adjustTextPosition();
};

}  // namespace yuki

#endif
```

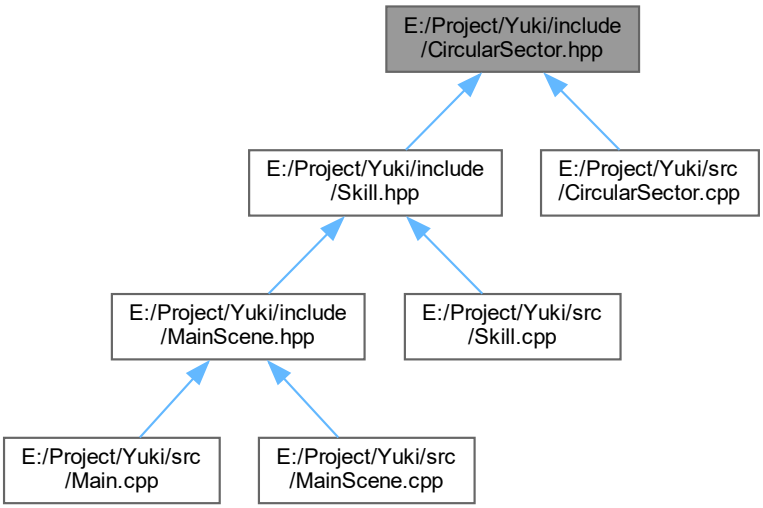
7.7 E:/Project/Yuki/include/CircularSector.hpp File Reference

`#include <SFML/Graphics.hpp>`

Include dependency graph for CircularSector.hpp:



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



Classes

- class yuki::CircularSector

Namespaces

- namespace yuki

7.8 CircularSector.hpp

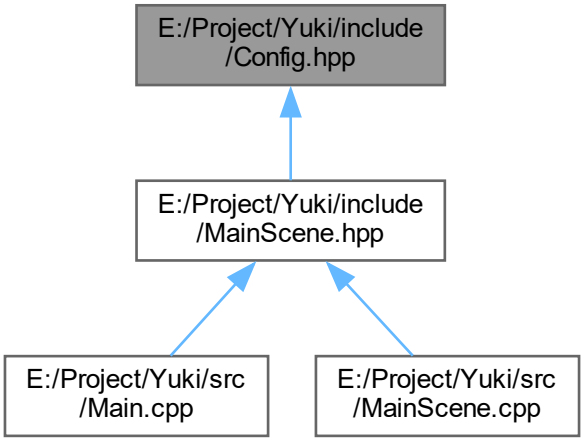
Go to the documentation of this file.

```
#ifndef CIRCULAR_SECTOR_HPP
#define CIRCULAR_SECTOR_HPP

#include <SFML/Graphics.hpp>

namespace yuki {

class CircularSector : public sf::Shape {
 public:
  CircularSector(const sf::Vector2f& center, float radius, int start_angle,
                 int end_angle)
      : center_(center),
        radius_(radius),
        start_angle_(start_angle),
        end_angle_(end_angle) {
    update();
  }

  void setCenter(const sf::Vector2f& center) {
    center_ = center;
    update();
  }

  void setRadius(float radius) {
    radius_ = radius;
```

```
    update();
  }

  void setStartAngle(float start_angle) {
    start_angle_ = start_angle;
    update();
  }

  void setEndAngle(float end_angle) {
    end_angle_ = end_angle;
    update();
  }

  const sf::Vector2f& getCenter() const { return center_; }

  sf::Vector2f getPoint(std::size_t index) const override;
  std::size_t getPointCount() const override {
    return end_angle_ - start_angle_ + 2;
  }

 private:
  sf::Vector2f center_;
  float radius_;
  int start_angle_;
  int end_angle_;
};

}  // namespace yuki

#endif  // CIRCULAR_SECTOR_HPP
```

7.9 E:/Project/Yuki/include/Config.hpp File Reference

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



Macros

- #define YUKI_DEBUG

7.9.1 Macro Definition Documentation

7.9.1.1 YUKI_DEBUG

```
#define YUKI_DEBUG
```

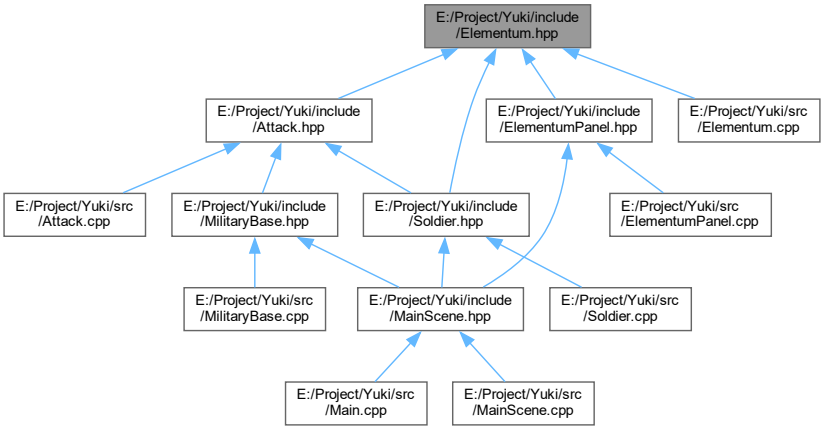
7.10 Config.hpp

Go to the documentation of this file.

```
00001 #ifndef CONFIG_HPP
00002 #define CONFIG_HPP
00003
00004 #define YUKI_DEBUG
00005
00006 #endif // CONFIG_HPP
```

7.11 E:/Project/Yuki/include/Elementum.hpp File Reference

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



Classes

- struct yuki::Elementum
- struct yuki::ElementumReaction

Namespaces

- namespace yuki

Enumerations

- enum class yuki::ElementumType { yuki::None , yuki::Pyro , yuki::Hydro , yuki::Cyro }
- enum class yuki::ElementumReactionType { yuki::None , yuki::Evaporation , yuki::Freeze , yuki::Melt }

Functions

- ElementumReactionType yuki::getElementumReactionType (const Elementum &lhs, const Elementum &rhs)
- Elementum yuki::getReactedElementum (const Elementum &lhs, const Elementum &rhs)
- ElementumReaction yuki::getElementumReaction (const Elementum &lhs, const Elementum &rhs)

7.12 Elementum.hpp

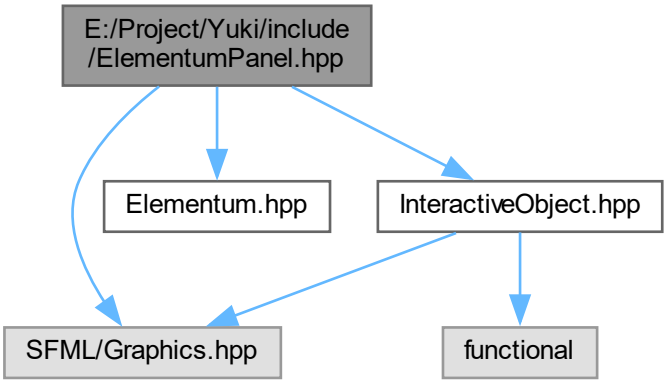
Go to the documentation of this file.

```
#ifndef ELEMENTUM_HPP
#define ELEMENTUM_HPP

namespace yuki {

enum class ElementumType { None, Pyro, Hydro, Cyro };
enum class ElementumReactionType { None, Evaporation, Freeze, Melt };

struct Elementum {
  Elementum(ElementumType type = ElementumType::None, float level = 0.0f)
      : type(type), level(level) {}

  ElementumType type;
  float level;
};

struct ElementumReaction {
  ElementumReactionType type;
  Elementum elementum;
};

ElementumReactionType getElementumReactionType(const Elementum& lhs,
                                               const Elementum& rhs);

Elementum getReactedElementum(const Elementum& lhs, const Elementum& rhs);

ElementumReaction getElementumReaction(const Elementum& lhs,
                                       const Elementum& rhs);

}  // namespace yuki

#endif  // ELEMENTUM_HPP
```

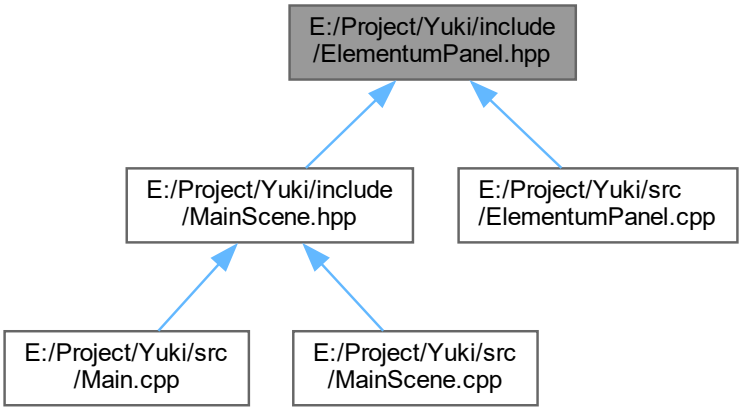
7.13 E:/Project/Yuki/include/ElementumPanel.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include "Elementum.hpp"
#include "InteractiveObject.hpp"
```

Include dependency graph for ElementumPanel.hpp:



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



Classes

- class yuki::ElementumPanel

Namespaces

- namespace yuki

7.14 ElementumPanel.hpp

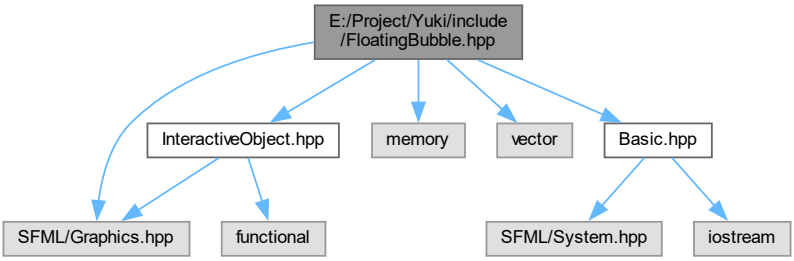
Go to the documentation of this file.

```
#ifndef ELEMENTUM_PANEL_HPP
#define ELEMENTUM_PANEL_HPP

#include <SFML/Graphics.hpp>

#include "Elementum.hpp"
#include "InteractiveObject.hpp"

namespace yuki {
class ElementumPanel : public sf::CircleShape, public Touchable {
 public:
  ElementumPanel(ElementumType type = ElementumType::Pyro) {
    setElementumType(type);
  }

  TOUCHABLE_OBJECT(ElementumPanel)

  void activate();
  void deactivate();

  void setElementumType(ElementumType type);
  constexpr auto getElementumType() const { return elementum_type_; }

 private:
  ElementumType elementum_type_;
};

}  // namespace yuki

#endif
```

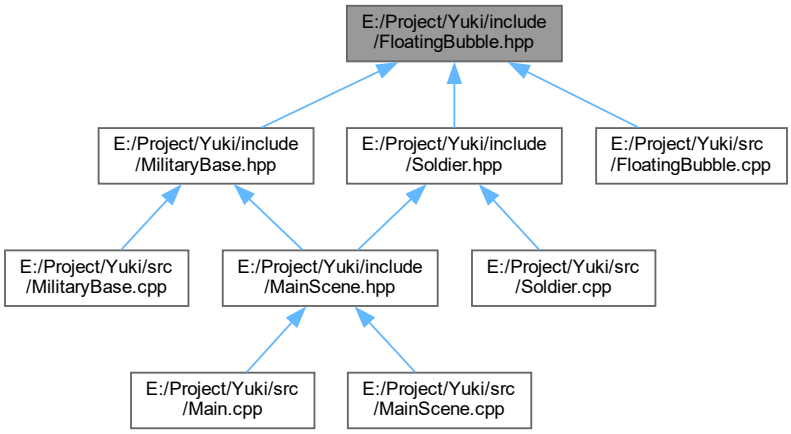
7.15 E:/Project/Yuki/include/FloatingBubble.hpp File Reference

```
#include <InteractiveObject.hpp>
#include <SFML/Graphics.hpp>
#include <memory>
#include <vector>
#include "Basic.hpp"
```

Include dependency graph for FloatingBubble.hpp:



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



Classes

- class yuki::BubbleItem
- class yuki::FloatingBubble

Namespaces

- namespace yuki

7.16 FloatingBubble.hpp

Go to the documentation of this file.

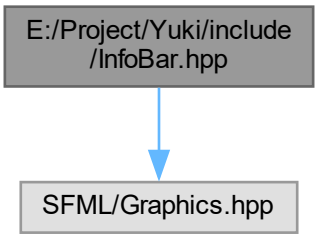
```
#ifndef FLOATING_BUBBLE_HPP
#define FLOATING_BUBBLE_HPP

#include <InteractiveObject.hpp>
#include <SFML/Graphics.hpp>
#include <memory>
#include <vector>

#include "Basic.hpp"

namespace yuki {

class BubbleItem : public sf::CircleShape, public Touchable {
  friend class FloatingBubble;

 public:
  BubbleItem() = default;
  BubbleItem(float radius) : sf::CircleShape(radius) {}
  virtual ~BubbleItem() = default;
  TOUCHABLE_OBJECT(BubbleItem)

  void loadTexture(const std::string& path) {
    texture_.loadFromFile(path);
    setTexture(&texture_);
  }
 private:
  sf::Texture texture_;
};

```

```
class FloatingBubble : public sf::Drawable {
 public:
  FloatingBubble(const sf::Vector2f& position, const float distribute_radius,
                 const int bubble_num, const float bubble_radius = 10.f,
                 const Direction direction = Direction::Down)
      : position_(position),
        distribute_radius_(distribute_radius),
        bubble_num_(bubble_num),
        bubble_radius_(bubble_radius),
        direction_(direction) {
    for (int i = 0; i < bubble_num_; ++i) {
      auto bubble = std::make_unique<BubbleItem>(bubble_radius);
      bubble->setFillColor(YukiColor::Transparent_25);
      bubble->setOutlineColor(sf::Color::Black);
      bubble->setOutlineThickness(2.f);
      bubble->setPosition(getBubblePosition(i));
      bubbles_.push_back(std::move(bubble));
    }
  }
  FloatingBubble() = default;

  //   TOUCHABLE_OBJECT(FloatingBubble)

  void setPosition(const sf::Vector2f& position) {
    position_ = position;
    updateBubblesPosition();
  }
  const auto getPosition() const { return position_; }

  void setBubbleRadius(const float radius) {
    bubble_radius_ = radius;
    for (auto& bubble : bubbles_) {
      bubble->setRadius(radius);
    }
  }
  const auto getBubbleRadius() const { return bubble_radius_; }
  int getIndexByPosition(const sf::Vector2f& position) const;

  auto& getBubbleItems() { return bubbles_; }
  const auto& getBubbleItems() const { return bubbles_; }

  void draw(sf::RenderTarget& target, sf::RenderStates states) const override;

 private:
  sf::Vector2f position_;
  float distribute_radius_;
  int bubble_num_;
  float bubble_radius_;
  Direction direction_;
  std::vector<std::unique_ptr<BubbleItem>> bubbles_;

  sf::Vector2f getBubblePosition(const int index);
  void updateBubblesPosition();
};

}  // namespace yuki

#endif  // FLOATING_BUBBLE_HPP
```

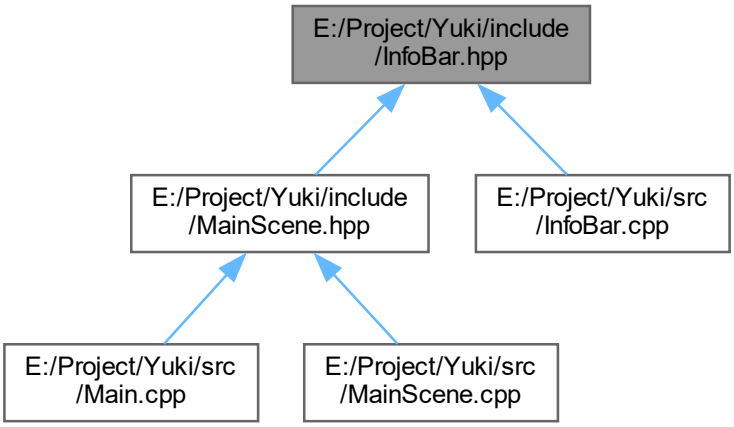
7.17 E:/Project/Yuki/include/InfoBar.hpp File Reference

```
#include <SFML/Graphics.hpp>
```

Include dependency graph for InfoBar.hpp:



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



Classes

- class yuki::InfoBar

Namespaces

- namespace yuki

7.18 InfoBar.hpp

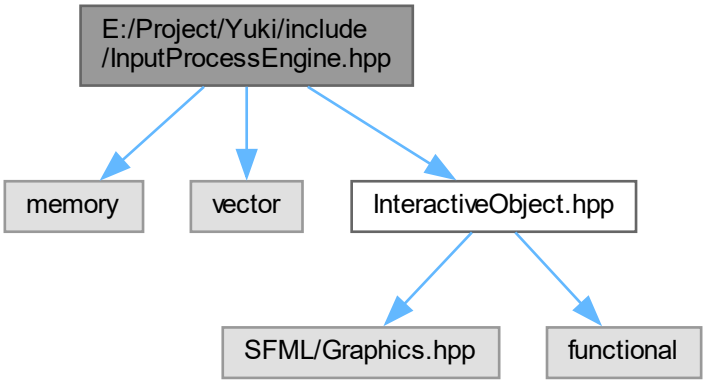
Go to the documentation of this file.

```
#ifndef INFO_BAR_HPP
#define INFO_BAR_HPP

#include <SFML/Graphics.hpp>

namespace yuki {

class InfoBar : public sf::Drawable {
 private:
  constexpr static float kIconSize = 32.f;
  constexpr static float kMoneyIconOffset = 10.f;
  constexpr static float kMoneyTextOffset = 60.f;

 public:
  InfoBar() : InfoBar(sf::Vector2f(0.f, 0.f)) {}
  InfoBar(const sf::Vector2f& position,
          const sf::Vector2f& size = sf::Vector2f(256.f, 32.f));
  virtual ~InfoBar() = default;

  void setMoney(const int money);
  void setPosition(const sf::Vector2f& position);
  const auto& getPosition() const { return background_.getPosition(); }

  void setSize(const sf::Vector2f& size) {
    background_.setSize(size);
  }
  const auto& getSize() const { return background_.getSize(); }


 private:
  sf::RectangleShape background_;
  sf::Texture background_texture_;
  sf::Sprite icon_money_;
  sf::Texture icon_money_texture_;
  sf::Text text_money_;

  void initTextures();
  void initUi();
  void draw(sf::RenderTarget& target, sf::RenderStates states) const override;
};

}  // namespace yuki

#endif  // INFO_BAR_HPP
```

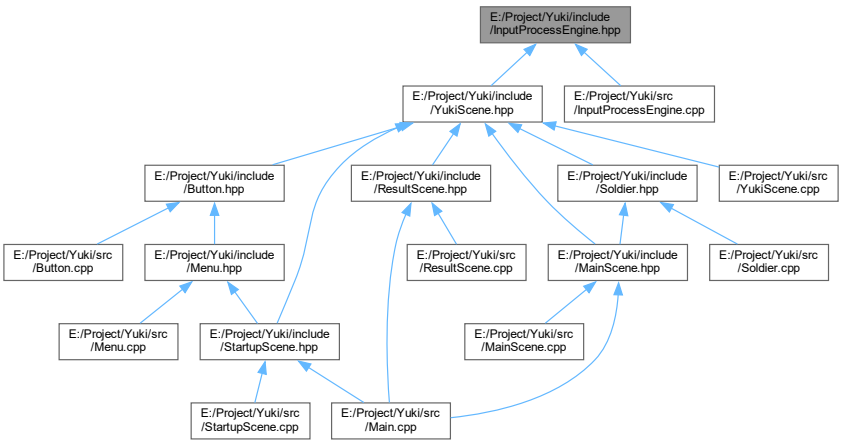
7.19 E:/Project/Yuki/include/InputProcessEngine.hpp File Reference

```
#include <memory>
#include <vector>
#include "InteractiveObject.hpp"
```

Include dependency graph for InputProcessEngine.hpp:



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



Classes

- class yuki::MouseEventProcessEngine

Namespaces

- namespace yuki

7.20 InputProcessEngine.hpp

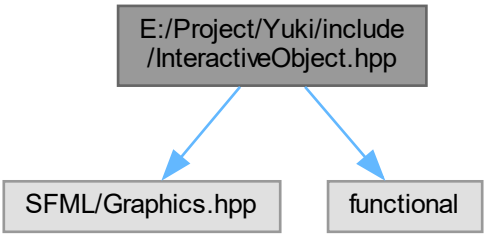
Go to the documentation of this file.

```
#ifndef INPUT_PROCESS_ENGINE_HPP
#define INPUT_PROCESS_ENGINE_HPP

#include <memory>
#include <vector>

#include "InteractiveObject.hpp"


namespace yuki {

class MouseEventProcessEngine {
 public:
  MouseEventProcessEngine();
  virtual ~MouseEventProcessEngine();

  void registerTouchableObject(Touchable* object);
  void unregisterTouchableObject(Touchable* object);

  void processEvent(sf::Event event);

 private:
  std::vector<Touchable*> touchable_objects_;
};

}  // namespace yuki

#endif
```

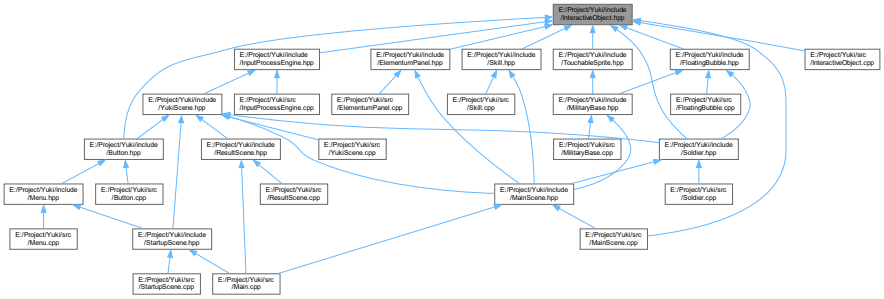
7.21 E:/Project/Yuki/include/InteractiveObject.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include <functional>
```

Include dependency graph for InteractiveObject.hpp:



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



Classes

- class yuki::Touchable
- class yuki::Focusable
- class yuki::TouchableObject< Decorated >

Namespaces

- namespace yuki

Macros

- #define TOUCHABLE_OBJECT(OBJECT_NAME)
- #define FOCUSABLE_OBJECT(OBJECT_NAME) TOUCHABLE_OBJECT(OBJECT_NAME)

7.21.1 Macro Definition Documentation

7.21.1.1 FOCUSABLE_OBJECT

```
#define FOCUSABLE_OBJECT(
            OBJECT_NAME ) TOUCHABLE_OBJECT(OBJECT_NAME)
```

7.21.1.2 TOUCHABLE_OBJECT

```
#define TOUCHABLE_OBJECT(
            OBJECT_NAME )
```

Value:

```
 public:                                \
  virtual bool inRange(const sf::Vector2f& position) const override;
```

7.22 InteractiveObject.hpp

Go to the documentation of this file.

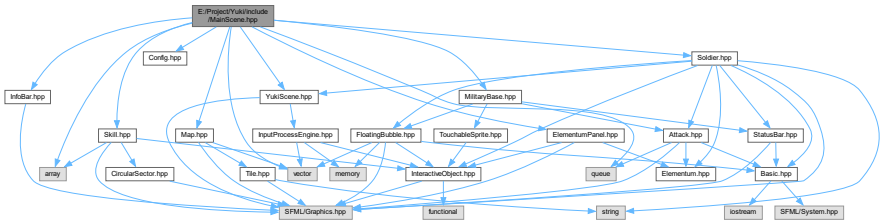
```
#ifndef INTERACTIVE_OBJECT_HPP
#define INTERACTIVE_OBJECT_HPP

#include <SFML/Graphics.hpp>
#include <functional>

#define TOUCHABLE_OBJECT(OBJECT_NAME) \
 public:                              \
  virtual bool inRange(const sf::Vector2f& position) const override;

#define FOCUSABLE_OBJECT(OBJECT_NAME) TOUCHABLE_OBJECT(OBJECT_NAME)

namespace yuki {

class Touchable {
 public:
  using Callback = std::function<void(sf::Event e)>;
  // using Callback = void (*)(sf::Event e);

  Touchable() = default;
  virtual ~Touchable() {}

  virtual void onRelease(sf::Event e) { on_releaseCallback_(e); }
  virtual void onClick(sf::Event e) { on_clickCallback_(e); }
  virtual void onHover(sf::Event e) { on_hoverCallback_(e); }
  virtual void onLeave(sf::Event e) { on_leaveCallback_(e); }

  enum class Action { Click, Release, Hover, Leave };

  void bindAction(const Action action, Callback callback);

  void bindClick(Callback callback) { on_clickCallback_ = callback; }
  void bindRelease(Callback callback) { on_releaseCallback_ = callback; }
  void bindHover(Callback callback) { on_hoverCallback_ = callback; }
  void bindLeave(Callback callback) { on_leaveCallback_ = callback; }

  virtual bool inRange(const sf::Vector2f& position) const = 0;
  virtual void updateStatus(sf::Event event);

 protected:
  bool is_clicked_ = false;
  bool is_hovered_ = false;

  Callback on_clickCallback_ = [](sf::Event) {};
  Callback on_releaseCallback_ = [](sf::Event) {};
  Callback on_hoverCallback_ = [](sf::Event) {};
  Callback on_leaveCallback_ = [](sf::Event) {};
};

class Focusable : public Touchable {
 public:
  using Callback = std::function<void(sf::Event e)>;

  Focusable() = default;
  virtual ~Focusable() {}

  virtual void onFocus(sf::Event e) { on_focusCallback_(e); }
  virtual void onUnfocus(sf::Event e) { on_unfocusCallback_(e); }

  constexpr auto isFocused() const { return is_focused_; }

  void bindFocus(Callback callback) { on_focusCallback_ = callback; }
  void bindUnfocus(Callback callback) { on_unfocusCallback_ = callback; }

  void updateStatus(sf::Event event);

 private:
  bool is_focused_ = false;

  Callback on_focusCallback_ = [](sf::Event) {};
  Callback on_unfocusCallback_ = [](sf::Event) {};
};

template <class Decorated>
class TouchableObject : public Decorated, public Touchable {
 public:
  TouchableObject() = default;
  virtual ~TouchableObject() {}

  virtual bool inRange(const sf::Vector2f& position) const override {
    return Decorated::getGlobalBounds().contains(position);
  }
```

```
00083
00084   virtual void updateStatus(sf::Event event) override {
00085     Touchable::updateStatus(event);
00086   }
00087 };
00088
00089 }  // namespace yuki
00090
00091 #endif  // INTERACTIVE_OBJECT_HPP
```

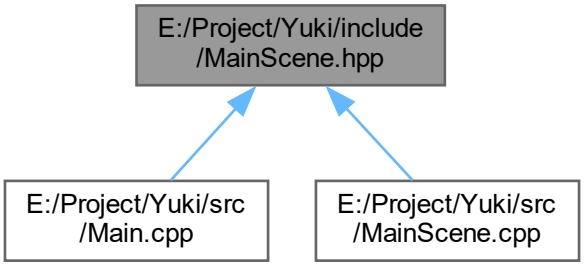
7.23 E:/Project/Yuki/include/MainScene.hpp File Reference

```
#include <array>
#include <queue>
#include <vector>
#include "Config.hpp"
#include "ElementumPanel.hpp"
#include "InfoBar.hpp"
#include "Map.hpp"
#include "MilitaryBase.hpp"
#include "Skill.hpp"
#include "Soldier.hpp"
#include "YukiScene.hpp"
```

Include dependency graph for MainScene.hpp:



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



Classes

- class yuki::MainScene

Namespaces

- namespace yuki

7.24 MainScene.hpp

Go to the documentation of this file.

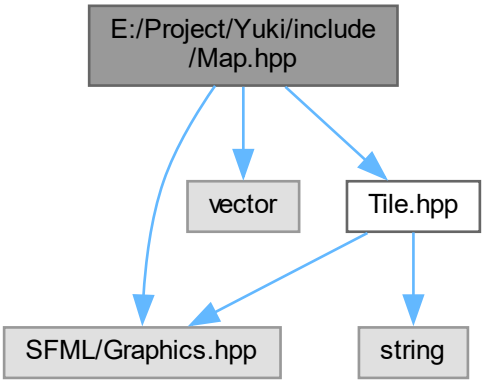
```
#ifndef MAIN_SCENE_HPP
#define MAIN_SCENE_HPP

#include <array>
#include <queue>
#include <vector>

#include "Config.hpp"
#include "ElementumPanel.hpp"
#include "InfoBar.hpp"
#include "Map.hpp"
#include "MilitaryBase.hpp"
#include "Skill.hpp"
#include "Soldier.hpp"
#include "YukiScene.hpp"


namespace yuki {

class MainScene : public YukiScene {
  YUKI_SCENE

 public:
  enum class Message {
    GenerateOwnSoldier,
    GenerateEnemySoldier,
    OwnBaseLevelUp,
    FocusedObjectChanged,
    OwnWin,
    EnemyWin
  };

  enum class ObjectType {
    OwnSoldier,
    EnemySoldier,
    OwnBase,
    EnemyBase,
    None
  };

 public:
  MainScene(sf::RenderWindow& window);
  virtual ~MainScene() {}

  // void generateSoldier();
  void sendMessage(const Message& message) { message_queue_.push(message); }

 private:
  const static sf::Vector2i kOwnSoldierBirthCoordinate;
  const static sf::Vector2i kEnemySoldierBirthCoordinate;
  const static sf::Vector2i kOwnBaseCoordinate;
  const static sf::Vector2i kEnemyBaseCoordinate;

  using GranuleAttackWithSenderInfo = std::pair<Soldier*, GranuleAttack>;

  Map map_;
  std::unique_ptr<MilitaryBase> own_base_;
  std::unique_ptr<MilitaryBase> enemy_base_;
  std::unique_ptr<InfoBar> info_bar_;
  std::unique_ptr<SkillBar<3» skill_bar_;

  int own_money_;
  int enemy_money_;

  void increaseOwnMoney(int money) { increaseMoney(money, Camp::Own); }
  void decreaseOwnMoney(int money) { decreaseMoney(money, Camp::Own); }
  void increaseEnemyMoney(int money) { increaseMoney(money, Camp::Enemy); }
  void decreaseEnemyMoney(int money) { decreaseMoney(money, Camp::Enemy); }

  std::vector<std::unique_ptr<Soldier» soldiers_;
  std::vector<std::unique_ptr<Soldier» enemies_;

  Focusable* focused_object_;
```

```
  ObjectType focused_object_type_;

  void initUi();
  void initMap();
  void initBuildings();
  void initInfoHint();

  void setMoney(int money, Camp camp = Camp::Own);
  void increaseMoney(int money, Camp camp = Camp::Own);
  void decreaseMoney(int money, Camp camp = Camp::Own);

  // std::shared_ptr<yuki::Soldier> getDefaultSoldier(Camp camp = Camp::Own);
  std::unique_ptr<yuki::Soldier> generateSoldier(const std::string& name,
                                                 Camp camp = Camp::Own);

  void eraseDeadSoldier();
  // void sodierAdjustDirection();
  void soldierUpdatePosition();
  void updateAttacks();
  void enemyBaseMakeDecision();

  sf::Vector2f coordinateToPixel(const sf::Vector2i& coordinate);
  sf::Vector2i pixelToCoordinate(const sf::Vector2f& pixel_position);

  std::vector<GranuleAttackWithSenderInfo> granule_attacks_;
  void registerGranuleAttack(Soldier* soldier, const GranuleAttack& attack) {
    granule_attacks_.push_back(std::make_pair(soldier, attack));
  }

  // Elementum Panel
  std::array<ElementumPanel, 3> elementum_panels_;
  ElementumType own_current_elementum_type_;
  ElementumType enemy_current_elementum_type_;
  void initElementumPanel();
  void setOwnCurrentElementumType(ElementumType type);
  void setEnemyCurrentElementumType(ElementumType type);

  // Attack Button
  void initButton();
  TouchableObject<sf::CircleShape> attack_button_;
  sf::Texture attack_button_texture_;

  std::queue<Message> message_queue_;

  void implMsgGenerateOwnSoldier();
  void implMsgGenerateEnemySoldier();

  void normalSoldierAttack(NormalSoldier* attacker);

#ifdef YUKI_DEBUG
  sf::Text debug_text_;
#endif
};

}  // namespace yuki

#endif  // MAIN_SCENE_HPP
```

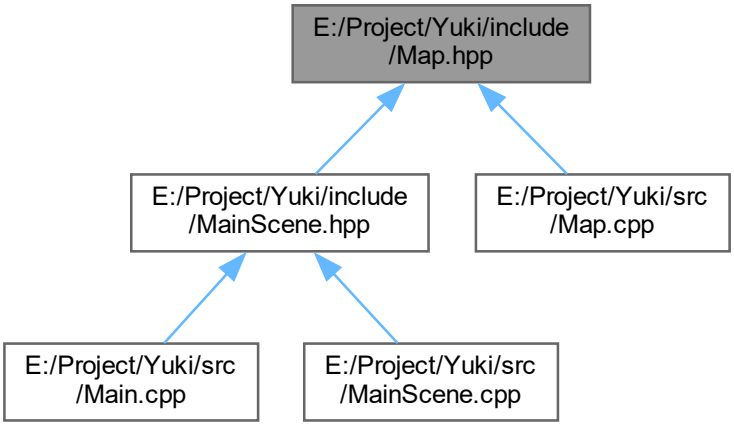
7.25 E:/Project/Yuki/include/Map.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include <vector>
#include "Tile.hpp"
```

Include dependency graph for Map.hpp:



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



Classes

- class yuki::Map

Namespaces

- namespace yuki

7.26 Map.hpp

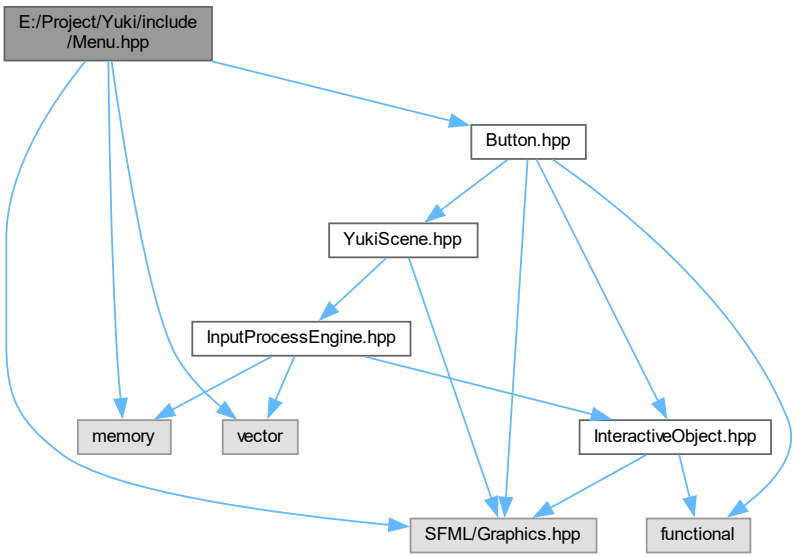
Go to the documentation of this file.

```
#ifndef MAP_HPP
#define MAP_HPP

#include <SFML/Graphics.hpp>
#include <vector>

#include "Tile.hpp"

namespace yuki {

class Map : public sf::Drawable {
 public:
  Map(const sf::Vector2i& size, const sf::Vector2f& tile_size);
  virtual ~Map();

  void draw(sf::RenderTarget& target, sf::RenderStates states) const override;

  void setSize(const sf::Vector2i& size) { size_ = size; }
  const auto& getSize() const { return size_; }
  void setTileSize(const sf::Vector2f& tile_size) { tile_size_ = tile_size; }
  const auto& getTileSize() const { return tile_size_; }

  auto getCoordinate(const sf::Vector2f& position) const {
    return sf::Vector2i(position.x / tile_size_.x, position.y / tile_size_.y);
  }

  Tile& getTile(int row, int col);
  const Tile& getTile(int row, int col) const;

  Tile& getTile(const sf::Vector2i& coordinate);
  const Tile& getTile(const sf::Vector2i& coordinate) const;

  void setTile(int row, int col, const TileInfo& tile_info);

 private:
  sf::Vector2i size_;
  sf::Vector2f tile_size_;

  std::vector<Tile> tiles_;

  sf::Texture bg_texture_;
  std::vector<sf::Sprite> bg_tiles_;
};

}  // namespace yuki

#endif
```

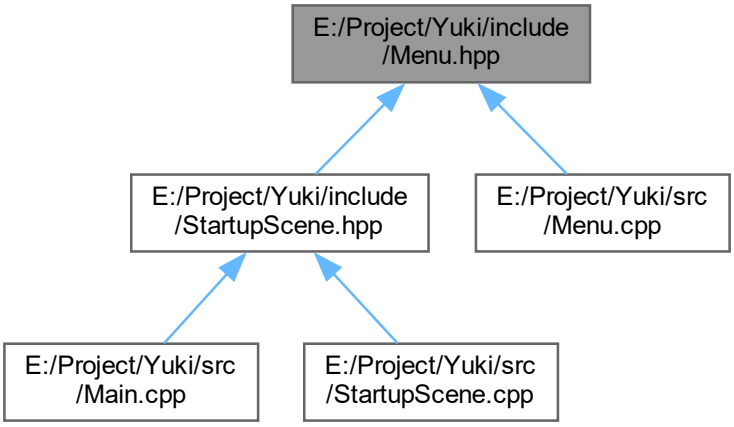
7.27 E:/Project/Yuki/include/Menu.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include <memory>
#include <vector>
#include "Button.hpp"
```

Include dependency graph for Menu.hpp:



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



Classes

- class yuki::Menu

Namespaces

- namespace yuki

7.28 Menu.hpp

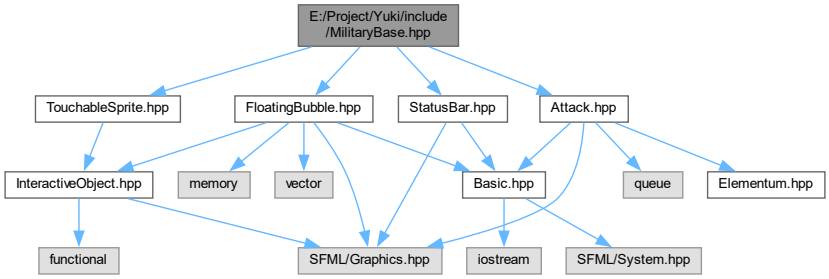
Go to the documentation of this file.

```
#ifndef MENU_HPP
#define MENU_HPP

#include <SFML/Graphics.hpp>
#include <memory>
#include <vector>
#include "Button.hpp"

namespace yuki {

class Menu : public sf::Drawable {
 public:
  enum class Layout {
    Vertical,
    Horizontal,
  };

  Menu();

  virtual ~Menu();

  void setLayout(Layout layout) { layout_ = layout; }
  const Layout& getLayout() const { return layout_; }

  void addItem(std::unique_ptr<yuki::Button> item);

  virtual void draw(sf::RenderTarget& target, sf::RenderStates states) const;

  Button& operator[](unsigned int index) { return *menu_items_[index]; }
  Button& getByName(const sf::String& name) {
    for (auto& item : menu_items_) {
      if (item->getString() == name) {
        return *item;
      }
    }
    throw std::runtime_error("Menu item not found");
    return *menu_items_[0];
  }

 private:
  std::vector<std::unique_ptr<yuki::Button» menu_items_;
  Layout layout_;
  unsigned int spacing_;

  sf::Vector2f position_;

  void adjustItemsPosition();
};

}  // namespace yuki

#endif
```

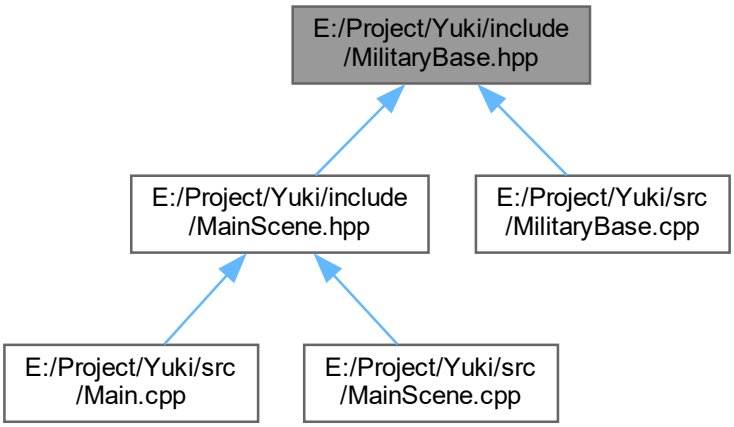
7.29 E:/Project/Yuki/include/MilitaryBase.hpp File Reference

```
#include "Attack.hpp"
#include "FloatingBubble.hpp"
#include "StatusBar.hpp"
#include "TouchableSprite.hpp"
```

Include dependency graph for MilitaryBase.hpp:



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



Classes

- class yuki::MilitaryBase

Namespaces

- namespace yuki

7.30 MilitaryBase.hpp

Go to the documentation of this file.

```
00001 #ifndef MILITARY_BASE_HPP
00002 #define MILITARY_BASE_HPP
00003
```

```
#include "Attack.hpp"
#include "FloatingBubble.hpp"
#include "StatusBar.hpp"
#include "TouchableSprite.hpp"

namespace yuki {

class MilitaryBase : public TouchableSprite {
  TOUCHABLE_OBJECT(MilitaryBase)

  static constexpr float health_bar_offset_y = -10.f;

 public:
  MilitaryBase(Camp camp = Camp::Own);
  virtual ~MilitaryBase() {}

  void levelUp() {
    level_++;
    updateTexture();
  }
  void levelDown() {
    level_--;
    updateTexture();
  }

  auto getLevel() const { return level_; }

  void setCurrentHealth(int health) { health_bar_.setValue(health); }
  void setMaxHealth(int health) { health_bar_.setMaxValue(health); }
  constexpr auto getCurrentHealth() const { return health_bar_.getValue(); }
  constexpr auto getMaxHealth() const { return health_bar_.getMaxValue(); }

  void setPosition(const sf::Vector2f& position) {
    TouchableSprite::setPosition(position);
    floating_bubble_.setPosition({position.x + getGlobalBounds().width / 2.f,
                                  position.y + getGlobalBounds().height / 2.f});
    health_bar_.setPosition({position.x, position.y + health_bar_offset_y});
  }

  void draw(sf::RenderTarget& target, sf::RenderStates states) const override;

  void setFloatingBubbleVisible(bool visible) {
    floating_bubble_visible_ = visible;
  }
  constexpr auto getFloatingBubbleVisible() const {
    return floating_bubble_visible_;
  }
  // void setHealthBarVisible(bool visible) { health_bar_visible_ = visible; }
  // constexpr auto getHealthBarVisible() const { return health_bar_visible_; }

  int getFloatingBubbleIndexByPosition(const sf::Vector2f& position) {
    if (!floating_bubble_visible_) {
      return -1;
    }
    return floating_bubble_.getIndexByPosition(position);
  }

  auto& getFloatingBubble() { return floating_bubble_; }
  const auto& getFloatingBubble() const { return floating_bubble_; }

  bool canGenerateSoldier();
  void resetGenerateSoldierClock() { generateSoldierClock_.restart(); }

  void getAttacked(const BasicAttack& attack) {
    health_bar_.setValue(health_bar_.getValue() - attack.getDamage());
  }

 private:
  Camp camp_;
  int level_ = 1;
  sf::Texture texture_;
  FloatingBubble floating_bubble_;
  bool floating_bubble_visible_ = false;
  StatusBar health_bar_;
  sf::Clock generateSoldierClock_;

  void initTexture();
  void updateTexture();
};

}  // namespace yuki

#endif
```

7.31 E:/Project/Yuki/include/Network.hpp File Reference

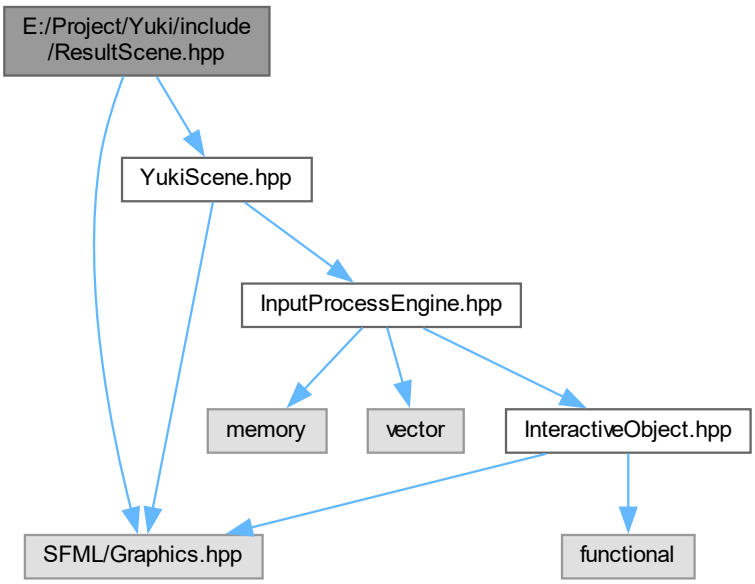
7.32 Network.hpp

Go to the documentation of this file.

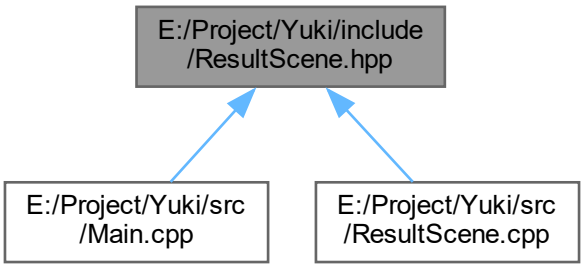
7.33 E:/Project/Yuki/include/ResultScene.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include "YukiScene.hpp"
```

Include dependency graph for ResultScene.hpp:



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



Classes

- class yuki::ResultScene

Namespaces

- namespace yuki

7.34 ResultScene.hpp

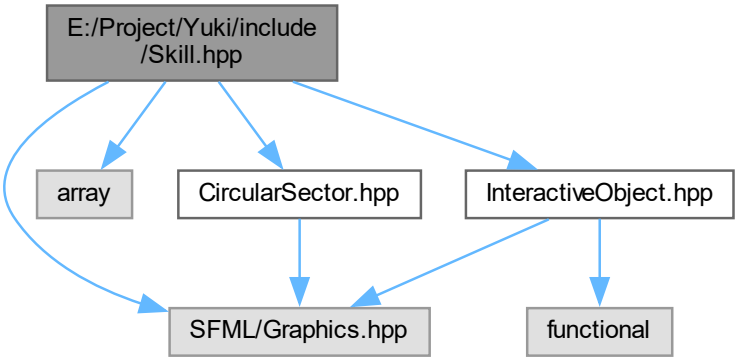
Go to the documentation of this file.

```
#ifndef RESULT_SCENE_HPP
#define RESULT_SCENE_HPP

#include <SFML/Graphics.hpp>

#include "YukiScene.hpp"

namespace yuki {

class ResultScene : public YukiScene {
  YUKI_SCENE

 public:
  ResultScene(sf::RenderWindow& window, bool own_win = true);
  virtual ~ResultScene();

 private:
  sf::Text result_text_;
  bool own_win_;

  sf::Sprite background_;
  sf::Texture background_texture_;

  void initUi();
};

}  // namespace yuki

#endif  // RESULT_SCENE_HPP
```

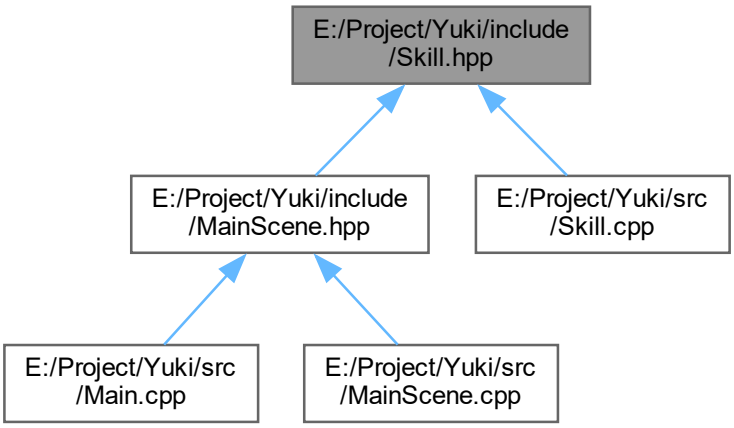
7.35 E:/Project/Yuki/include/Skill.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include <array>
#include "CircularSector.hpp"
#include "InteractiveObject.hpp"
```

Include dependency graph for Skill.hpp:



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



Classes

- class yuki::SkillIcon
- class yuki::SkillBar< MaxSkillNum >

Namespaces

- namespace yuki

Variables

- constexpr auto yuki::kPi = 3.14159265358979323846f
- constexpr auto yuki::kSkillIconBorderDistance = 3.f

7.36 Skill.hpp

Go to the documentation of this file.

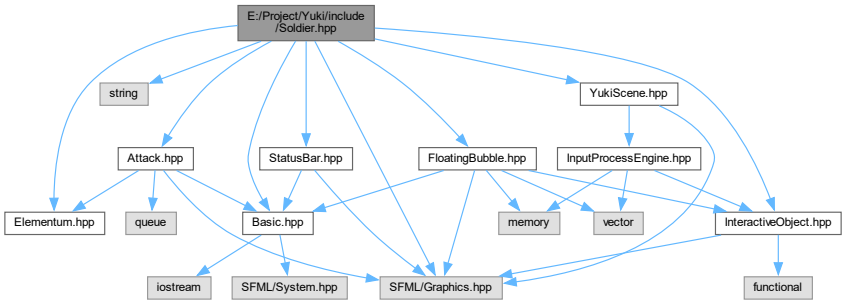
```
#ifndef SKILL_HPP
#define SKILL_HPP

#include <SFML/Graphics.hpp>
#include <array>

#include "CircularSector.hpp"
#include "InteractiveObject.hpp"

namespace yuki {

constexpr auto kPi = 3.14159265358979323846f;
constexpr auto kSkillIconBorderDistance = 3.f;

class SkillIcon : public sf::Drawable, public Touchable {
 public:
  SkillIcon(const sf::Vector2f& position = {0, 0}, float radius = 10.f,
            float border_thick = 2.f);

  void setMaxValue(int max_value) { max_value_ = max_value; }
  constexpr auto getMaxValue() const { return max_value_; }
  void setCurrentValue(int current_value) { current_value_ = current_value; }
  constexpr auto getCurrentValue() const { return current_value_; }

  void setPosition(const sf::Vector2f& position);

  TOUCHABLE_OBJECT(SkillIcon)
 protected:
  virtual void draw(sf::RenderTarget& target,
                    sf::RenderStates states) const override;

 private:
  CircularSector circular_sector_;
  sf::CircleShape background_;
  sf::CircleShape icon_;

  int max_value_;
  int current_value_;

  void updateCircularSector();
};

template <std::size_t MaxSkillNum = 3>
class SkillBar : public sf::Drawable, public Touchable {
 public:
  SkillBar(const sf::Vector2f& position = {0, 0}, float radius = 10.f,
           float border_thick = 2.f, int skill_num = 0);

  constexpr auto getSkillNum() const { return skills_.size(); }

 protected:
  TOUCHABLE_OBJECT(SkillBar)
  virtual void draw(sf::RenderTarget& target,
                    sf::RenderStates states) const override;

 private:
  unsigned skill_num_;

  std::array<SkillIcon, MaxSkillNum> skills_;
  std::array<sf::RectangleShape, MaxSkillNum> boxes_;

  sf::Vector2f position_;

  float icon_radius_ = 10.f;
  float border_thick_ = 2.f;

  void updatePosition();
};

template <std::size_t N>
SkillBar<N>::SkillBar(const sf::Vector2f& position, float radius,
                      float border_thick, int skill_num)
```

```
    : skill_num_(skill_num),
      position_(position),
      icon_radius_(radius),
      border_thick_(border_thick) {
  for (auto& skill : skills_) {
    skill.setMaxValue(100);
    skill.setCurrentValue(33);
  }

  for (int i = 0; i != skill_num; ++i) {
    boxes_[i].setFillColor(sf::Color::Black);
    boxes_[i].setOutlineColor(sf::Color::White);
    boxes_[i].setOutlineThickness(2.f);
  }

  updatePosition();
}

template <std::size_t N>
void SkillBar<N>::draw(sf::RenderTarget& target,
                       sf::RenderStates states) const {
  for (const auto& box : boxes_) {
    target.draw(box, states);
  }

  for (const auto& skill : skills_) {
    target.draw(skill, states);
  }
}

template <std::size_t N>
void SkillBar<N>::updatePosition() {
  const float box_length = 2 * icon_radius_ + 2 * kSkillIconBorderDistance;

  for (std::size_t i = 0; i != skills_.size(); ++i) {
    boxes_[i].setPosition(position_.x + i * box_length, position_.y);

    skills_[i].setPosition(
        sf::Vector2f{static_cast<float>(position_.x + (i + 0.5) * box_length),
                     static_cast<float>(position_.y + 0.5 * box_length)});
  }
}

template <std::size_t N>
bool SkillBar<N>::inRange(const sf::Vector2f& point) const {
  auto box_length = 2 * icon_radius_ + 2 * kSkillIconBorderDistance;

  return point.x >= position_.x &&
         point.x <= position_.x + box_length * skill_num_ &&
         point.y >= position_.y &&
         point.y <= position_.y + box_length * skill_num_;
}

}  // namespace yuki

#endif  // SKILL_BAR_HPP
```

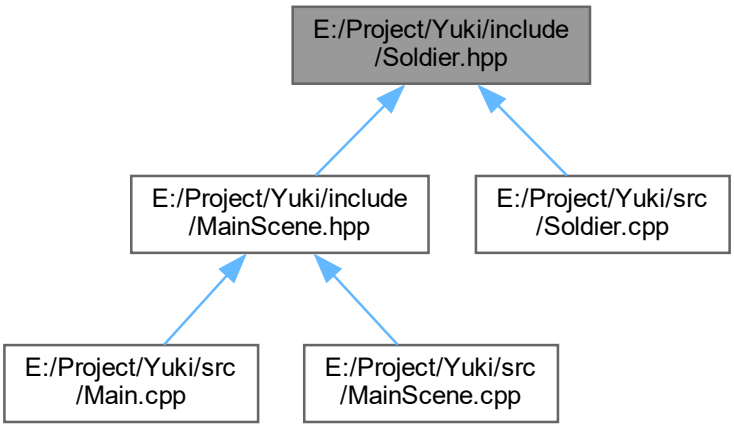
7.37 E:/Project/Yuki/include/Soldier.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include <string>
#include "Attack.hpp"
#include "Basic.hpp"
#include "Elementum.hpp"
#include "FloatingBubble.hpp"
#include "InteractiveObject.hpp"
#include "StatusBar.hpp"
#include "YukiScene.hpp"
```

Include dependency graph for Soldier.hpp:



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



Classes

- class yuki::Soldier
- class yuki::NormalSoldier
- class yuki::SeniorSoldier

Namespaces

- namespace yuki

Functions

- std::unique_ptr< NormalSoldier > yuki::getNormalSoldier (Camp camp=Camp::Own)
- std::unique_ptr< Soldier > yuki::getSoldier (const std::string &name, Camp camp=Camp::Own)

7.38 Soldier.hpp

Go to the documentation of this file.

```
#ifndef SOLDIER_HPP
#define SOLDIER_HPP

#include <SFML/Graphics.hpp>
#include <string>

#include "Attack.hpp"
#include "Basic.hpp"
#include "Elementum.hpp"
#include "FloatingBubble.hpp"
#include "InteractiveObject.hpp"
#include "StatusBar.hpp"
#include "YukiScene.hpp"

namespace yuki {
class Soldier : public sf::Drawable, public Focusable {
 public:
  Soldier(Camp camp = Camp::Own)
      : camp_(camp), adhesion_elementum_(Elementum(ElementumType::None, 0.0f)) {
    health_bar_ = getHealthBar(camp);
    setOrigin({sprite_.getLocalBounds().width / 2.f,
               sprite_.getLocalBounds().height});
  }
  Soldier(const sf::Vector2f& position, Camp camp = Camp::Own) : Soldier(camp) {
    setPosition(position);
  }

  virtual ~Soldier() {}

  virtual void draw(sf::RenderTarget& target,
                    sf::RenderStates states) const override;

  // Focusable object
  FOCUSABLE_OBJECT(Soldier)

  virtual void update();

  // Action
  void setDirection(const Direction direction) { direction_ = direction; }
  constexpr auto getDirection() const { return direction_; }
  void setSpeed(const float speed) { speed_ = speed; }
  constexpr auto getSpeed() const { return speed_; }
  void setMoving(const bool moving) { is_moving_ = moving; }
  constexpr auto isMoving() const { return is_moving_; }
  void setPosition(const sf::Vector2f& position) {
    sprite_.setPosition(position);
    health_bar_.setPosition(
        {position.x + health_bar_offset_.x, position.y + health_bar_offset_.y});
  }
  const auto getPosition() const { return sprite_.getPosition(); }
  void setOrigin(const sf::Vector2f& origin) { sprite_.setOrigin(origin); }
  const auto getOrigin() const { return sprite_.getOrigin(); }

  auto getSize() const {
    return sf::Vector2f(sprite_.getGlobalBounds().width,
                        sprite_.getGlobalBounds().height);
  }

  void setMaxHealth(const float max_health) {
    health_bar_.setMaxValue(max_health);
  }
  constexpr auto getMaxHealth() const { return health_bar_.getMaxValue(); }
  void setHealth(const float current_health) {
    health_bar_.setValue(current_health);
  }
  const auto getHealth() const { return health_bar_.getValue(); }
  void increaseHealth(const float health) { health_bar_.increase(health); }
  void decreaseHealth(const float health) { health_bar_.decrease(health); }

  void setColor(const sf::Color& color) { sprite_.setColor(color); }
  auto getColor() const { return sprite_.getColor(); }

  void setPlaceOffset(const sf::Vector2f& offset) { place_offset_ = offset; }
  virtual const sf::Vector2f& getPlaceOffset() const { return place_offset_; }

  void setFloatingBubbleVisible(const bool visible) {
    floating_bubble_visible_ = visible;
  }
  constexpr auto isFloatingBubbleVisible() const {
    return floating_bubble_visible_;
  }
  void walk();
```

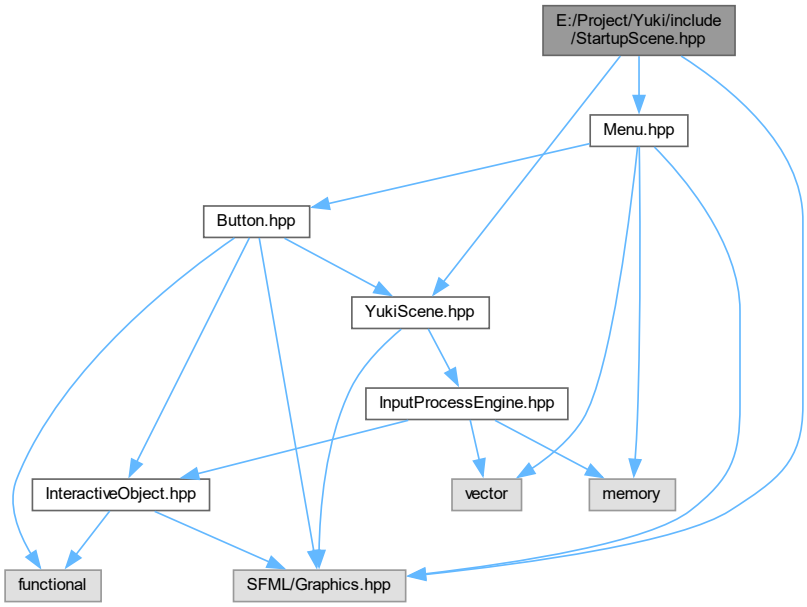
```

  auto& getFloatingBubble() { return floating_bubble_; }
  const auto& getFloatingBubble() const { return floating_bubble_; }

  void setElementum(const Elementum& elementum) { elementum_ = elementum; }
  const auto& getElementum() const { return elementum_; }
  void setElementumType(const ElementumType& elementum_type) {
    elementum_.type = elementum_type;
  }
  constexpr auto getElementumType() const { return elementum_.type; }

  constexpr auto getCamp() const { return camp_; }

  void setAdhesionElementum(const Elementum& elementum) {
    adhesion_elementum_ = elementum;
  }
  const auto& getAdhesionElementum() const { return adhesion_elementum_; }

  void getAttacked(const BasicAttack& attack);

  constexpr auto isFreezed() const { return is_freeze_; }

  // constexpr auto getCost() const { return cost_; }

  virtual std::unique_ptr<BasicAttack> getDefaultAttack() = 0;

 protected:
  // sf::Sprite sprite_;
  sf::Sprite sprite_;
  sf::Vector2f health_bar_offset_ = {0, -15};
  Camp camp_;

  sf::Vector2f place_offset_ = {0, 0};

  bool is_moving_ = false;
  Direction direction_ = Direction::Down;
  float speed_ = 0.0f;
  Elementum elementum_ = Elementum(yuki::ElementumType::None, 0.0f);

  Elementum adhesion_elementum_ = Elementum(yuki::ElementumType::None, 0.0f);
  StatusBar health_bar_;
  sf::Clock freeze_clock_;
  bool is_freeze_ = false;

  FloatingBubble floating_bubble_;
  bool floating_bubble_visible_;

  sf::Clock clock_;
};

class NormalSoldier : public Soldier {
 public:
  NormalSoldier(Camp camp = Camp::Own);
  NormalSoldier(const sf::Vector2f& position, Camp camp = Camp::Own);

  virtual ~NormalSoldier() {}

  virtual void draw(sf::RenderTarget& target,
                    sf::RenderStates states) const override;

  virtual void update() override;

  std::unique_ptr<BasicAttack> getDefaultAttack() override { return getDefaultGranuleAttack(); }
  std::unique_ptr<GranuleAttack> getDefaultGranuleAttack();

  void setGranuleAttackCD(const sf::Time& cd) { granule_attack_cd_ = cd; }
  const auto getGranuleAttackCD() const { return granule_attack_cd_; }
  bool canGranuleAttack() const {
    return granule_attack_clock_.getElapsedTime() >= granule_attack_cd_;
  }
  void resetGranuleAttackClock() { granule_attack_clock_.restart(); }

 private:
  sf::Texture all_textures_;

  sf::Vector2f place_offset_ = {0, 0};

  int current_frame_;
  int previous_frame_;
  int max_frame_;

  sf::Time granule_attack_cd_ = sf::seconds(0.5f);
  sf::Clock granule_attack_clock_;

  // FloatingBubble floating_bubble_;
};

```

```
class SeniorSoldier : public Soldier {
 public:
  SeniorSoldier(Camp camp = Camp::Own);
  SeniorSoldier(const sf::Vector2f& position, Camp camp = Camp::Own);

  virtual ~SeniorSoldier() {}

  virtual void draw(sf::RenderTarget& target,
                    sf::RenderStates states) const override;

  virtual void update() override;

 private:
  sf::Texture all_textures_;
  sf::Vector2f place_offset_ = {0, 0};

  int current_frame_;
  int previous_frame_;
  int max_frame_;

  FloatingBubble floating_bubble_;
};
std::unique_ptr<NormalSoldier> getNormalSoldier(Camp camp = Camp::Own);
std::unique_ptr<Soldier> getSoldier(const std::string& name,
                                    Camp camp = Camp::Own);

}  // namespace yuki

#endif
```

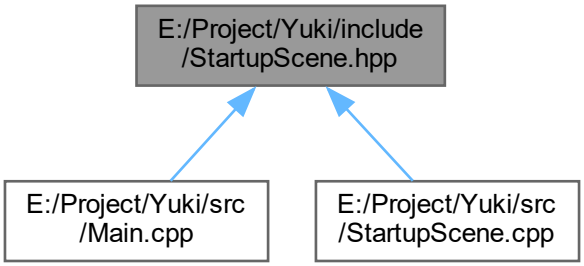
7.39 E:/Project/Yuki/include/StartupScene.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include "Menu.hpp"
#include "YukiScene.hpp"
```

Include dependency graph for StartupScene.hpp:



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



Classes

- class yuki::StartupScene

Namespaces

- namespace yuki

7.40 StartupScene.hpp

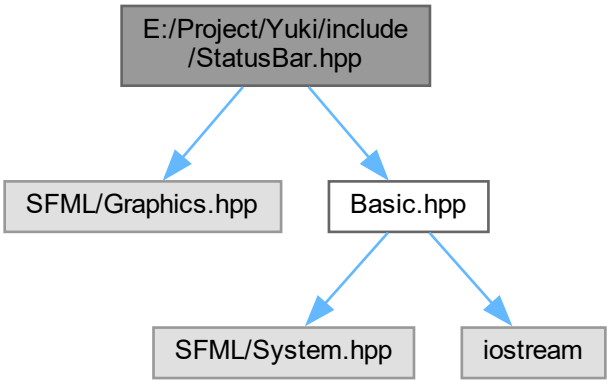
Go to the documentation of this file.

```
#ifndef STARTUP_SCENE_HPP
#define STARTUP_SCENE_HPP

#include <SFML/Graphics.hpp>

#include "Menu.hpp"
#include "YukiScene.hpp"

namespace yuki {

class StartupScene : public YukiScene {
 YUKI_SCENE
 public:
  StartupScene(sf::RenderWindow& window);
  virtual ~StartupScene() {}

 private:
  Button btn_start_;
  Button btn_connect_;
  sf::Sprite background_;
  sf::Texture background_texture_;

  void initUi();
};

}  // namespace yuki

#endif  // STARTUP_SCENE_HPP
```

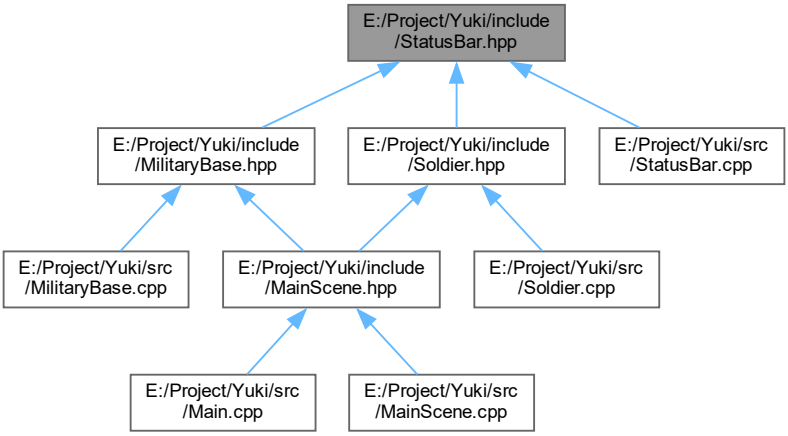
7.41 E:/Project/Yuki/include/StatusBar.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include "Basic.hpp"
```

Include dependency graph for StatusBar.hpp:



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



Classes

- class yuki::StatusBar

Namespaces

- namespace yuki

Functions

- StatusBar yuki::getHealthBar (Camp camp=Camp::Own, const sf::Vector2f &size={30.f, 5.f})

7.42 StatusBar.hpp

Go to the documentation of this file.

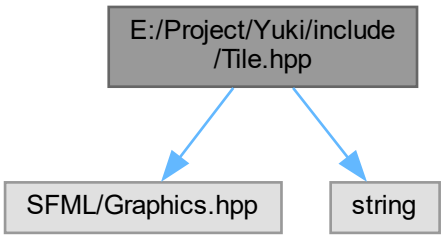
```
#ifndef STATUS_BAR_HPP
#define STATUS_BAR_HPP

#include <SFML/Graphics.hpp>

#include "Basic.hpp"

namespace yuki {

class StatusBar : public sf::Drawable {
 public:
  StatusBar() = default;
  StatusBar(sf::Vector2f size, sf::Vector2f position,
            sf::Color background_color = sf::Color::Black,
            sf::Color filled_color = sf::Color::Blue, float max_value = 100.f,
            float current_value = 100.f)
      : size_(size),
        position_(position),
        max_value_(max_value),
        current_value_(current_value) {
    background_.setPosition(position_);
    filled_.setPosition(position_);
    background_.setSize(size_);
    background_.setFillColor(background_color);
    filled_.setFillColor(filled_color);

    visible_ = true;

    updateFilledPercentage();
  }

  void show() { visible_ = true; }
  void hide() { visible_ = false; }

  auto isVisible() const { return visible_; }

  void setBackgroudColor(const sf::Color color) {
    background_.setFillColor(color);
  }
  void setFilledColor(const sf::Color color) { filled_.setFillColor(color); }
  void setMaxValue(const float max_value) { max_value_ = max_value; }
  void setValue(const float current_value) {
    current_value_ = current_value;
    updateFilledPercentage();
  }
  void setPosition(const sf::Vector2f& position);

  void setSize(const sf::Vector2f& size) {
    size_ = size;
    background_.setSize(size);
    updateFilledPercentage();
  }

  void setOutlineThickness(const float thickness) {
    background_.setOutlineThickness(thickness);
  }

  void setOutlineColor(const sf::Color& color) {
    background_.setOutlineColor(color);
  }

  void setOutlineStyle(const sf::Color& color, const float thickness) {
    background_.setOutlineColor(color);
    background_.setOutlineThickness(thickness);
  }

  const auto getBackgroundColor() const { return background_.getFillColor(); }
  const auto getFilledColor() const { return filled_.getFillColor(); }
  constexpr auto getMaxValue() const { return max_value_; }
  constexpr auto getValue() const { return current_value_; }
  const auto getPosition() const { return position_; }

  void increase(const float value);
```

```
  void decrease(const float value);

  virtual ~StatusBar() {}

  virtual void draw(sf::RenderTarget& target,
                    sf::RenderStates states) const override;

  void updateFilledPercentage() {
    setFilledPercentage(current_value_ / max_value_);
  }

 protected:
  sf::RectangleShape background_;
  sf::RectangleShape filled_;

  sf::Vector2f size_;
  sf::Vector2f position_;

  float max_value_;
  float current_value_;

  bool visible_;

  void setFilledPercentage(float percentage);
  void adjustIfOverflow();
};

StatusBar getHealthBar(Camp camp = Camp::Own,
                       const sf::Vector2f& size = {30.f, 5.f});

}  // namespace yuki

#endif  // STATUS_BAR_HPP
```

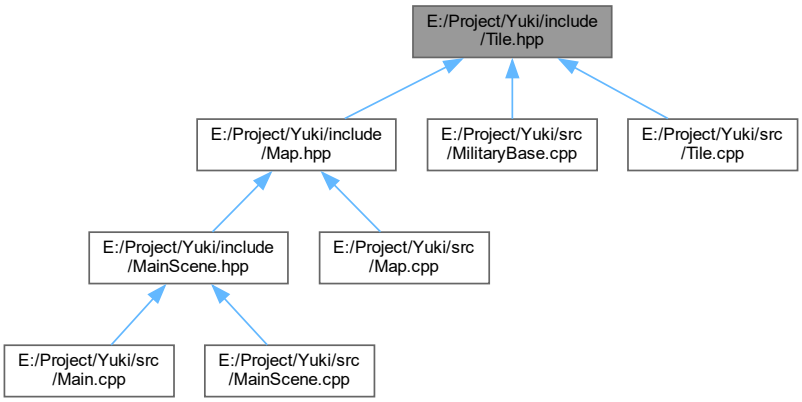
7.43 E:/Project/Yuki/include/Tile.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include <string>
```

Include dependency graph for Tile.hpp:



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



Classes

- struct yuki::TileInfo
- class yuki::Tile

Namespaces

- namespace yuki

Enumerations

- enum class yuki::TileCategory {
  yuki::Building , yuki::Decor , yuki::Greenery , yuki::Land ,
  yuki::River , yuki::Road , yuki::Stones , yuki::Tree }

Functions

- std::string yuki::getTileCategoryName (const TileCategory category)
- std::string yuki::getTileSrcName (const TileInfo &tile_info)
- sf::Vector2f yuki::getTileScaleFactor (const TileInfo &tile_info)

7.44 Tile.hpp

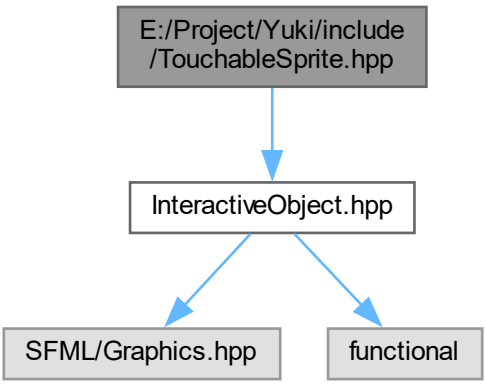
Go to the documentation of this file.

```
#ifndef TILE_HPP
#define TILE_HPP

#include <SFML/Graphics.hpp>
#include <string>

namespace yuki {

enum class TileCategory {
  Building,
  Decor,
  Greenery,
  Land,
  River,
  Road,
  Stones,
  Tree
};

struct TileInfo {
  TileCategory category;
  int index;

  TileInfo() = default;
  TileInfo(TileCategory category, int index)
      : category(category), index(index) {}
};

std::string getTileCategoryName(const TileCategory category);
std::string getTileSrcName(const TileInfo& tile_info);
sf::Vector2f getTileScaleFactor(const TileInfo& tile_info);

class Tile : public sf::Sprite {
 public:
  auto getTileInfo() const { return tile_info_; }
  void setTileInfo(TileInfo&& tile_info) { tile_info_ = std::move(tile_info); }
  void setTileInfo(const TileInfo& tile_info) { tile_info_ = tile_info; }

  void setTextureSrc(const std::string& src_location) {
    texture_.loadFromFile(src_location);
    this->setTexture(texture_);
  }

 private:
  TileInfo tile_info_;
  sf::Texture texture_;
};

} // namespace yuki

#endif // TILE_HPP
```

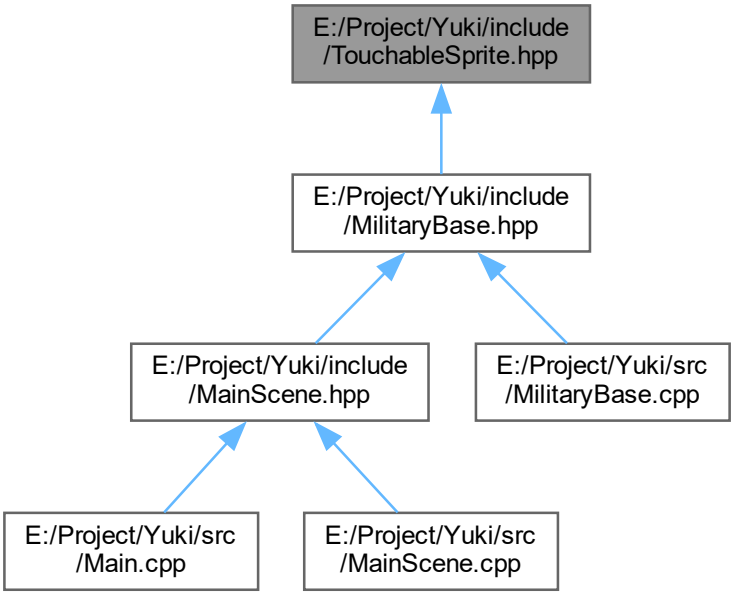
7.45 E:/Project/Yuki/include/TouchableSprite.hpp File Reference

```
#include "InteractiveObject.hpp"
```

Include dependency graph for TouchableSprite.hpp:



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



Classes

- class yuki::TouchableSprite

Namespaces

- namespace yuki

7.46 TouchableSprite.hpp

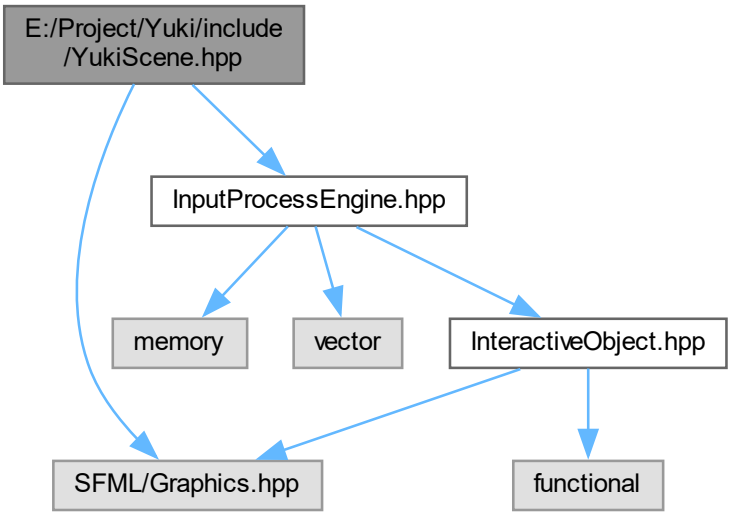
Go to the documentation of this file.

```
#ifndef TOUCHABLE_SPRITE_HPP
#define TOUCHABLE_SPRITE_HPP

#include "InteractiveObject.hpp"

namespace yuki {

class TouchableSprite : public sf::Sprite, public yuki::Touchable {
  // TOUCHABLE_OBJECT(TouchableSprite)

 public:
  TouchableSprite() = default;
  TouchableSprite(const sf::Texture& texture) : sf::Sprite(texture) {}
  TouchableSprite(const sf::Texture& texture, const sf::IntRect& rect)
      : sf::Sprite(texture, rect) {}

  virtual ~TouchableSprite() {}

private:
  virtual bool inRange(const sf::Vector2f& position) const override {
    return getGlobalBounds().contains(position);
  }
};

} // namespace yuki

#endif
```

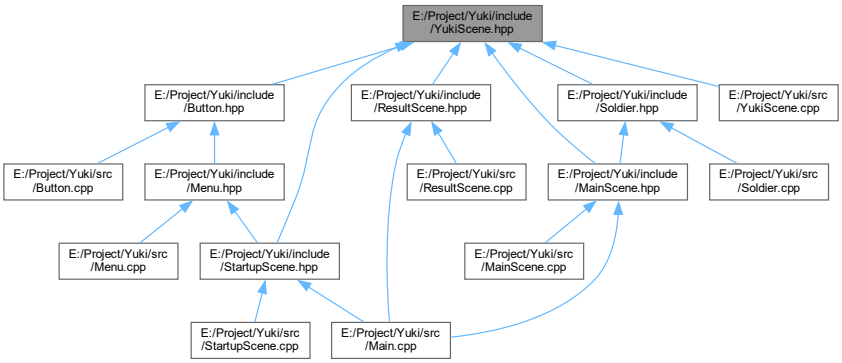
7.47 E:/Project/Yuki/include/YukiScene.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include "InputProcessEngine.hpp"
```

Include dependency graph for YukiScene.hpp:



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



Classes

- class yuki::YukiScene

Namespaces

- namespace yuki

Macros

- #define YUKI_SCENE

7.47.1 Macro Definition Documentation

7.47.1.1 YUKI_SCENE

```
#define YUKI_SCENE
```

Value:

```
public:                                          \
 int show() override;                            \
                                                 \
protected:                                       \
 void processEvent(sf::Event event) override;    \
 void draw() const override;                     \
 void updateInfo() override;                     \
                                                 \
public:
```

7.48 YukiScene.hpp

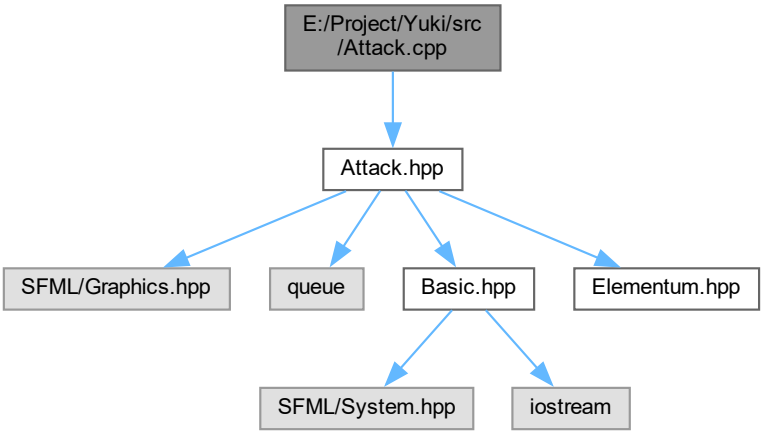
Go to the documentation of this file.

```
#ifndef YUKI_SCENE_HPP
#define YUKI_SCENE_HPP

#include <SFML/Graphics.hpp>

#include "InputProcessEngine.hpp"

namespace yuki {

#define YUKI_SCENE                                  \
 public:                                            \
  int show() override;                              \
                                                    \
 protected:                                         \
  void processEvent(sf::Event event) override;      \
  void draw() const override;                       \
  void updateInfo() override;                       \
                                                    \
 public:

// Abstract class for all scenes
class YukiScene {
 public:
  enum class Notify { None, End };

  YukiScene(sf::RenderWindow& window) : window_(window) {}
  virtual ~YukiScene();

  virtual int show();

 protected:
  yuki::MouseEventProcessEngine mouse_event_engine_;
  Notify notify_;
  int ret_code_;

  void registerTouchableObject(Touchable* object) {
    mouse_event_engine_.registerTouchableObject(object);
  }
  void unregisterTouchableObject(Touchable* object) {
    mouse_event_engine_.unregisterTouchableObject(object);
  }

  void setReturnCode(int ret_code) { ret_code_ = ret_code; }

  sf::RenderWindow& window_;
  virtual void processEvent(sf::Event event);
  virtual void draw() const = 0;
  virtual void updateInfo() = 0;
};

}  // namespace yuki

#endif  // YUKI_SCENE_HPP
```

7.49 E:/Project/Yuki/src/Attack.cpp File Reference

```
#include "Attack.hpp"
```

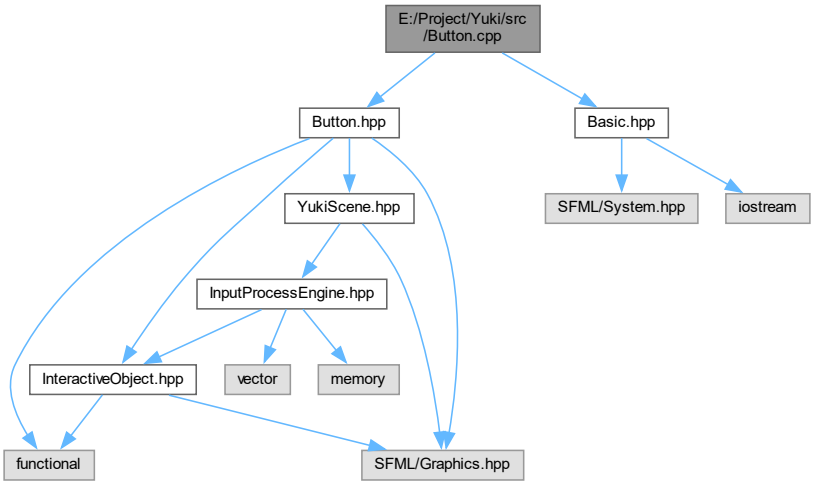
Include dependency graph for Attack.cpp:



7.50 E:/Project/Yuki/src/Button.cpp File Reference

```
#include "Button.hpp"
#include "Basic.hpp"
```

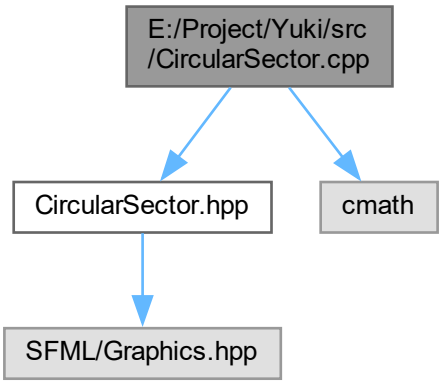
Include dependency graph for Button.cpp:



7.51 E:/Project/Yuki/src/CircularSector.cpp File Reference

```
#include "CircularSector.hpp"
#include <cmath>
```

Include dependency graph for CircularSector.cpp:



Variables

- constexpr auto kPi = 3.14159265358979323846f

7.51.1 Variable Documentation

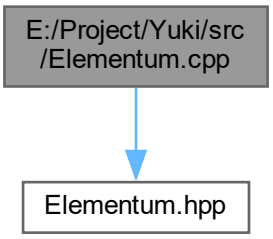
7.51.1.1 kPi

```
constexpr auto kPi = 3.14159265358979323846f  [constexpr]
```

7.52 E:/Project/Yuki/src/Elementum.cpp File Reference

```
#include "Elementum.hpp"
```

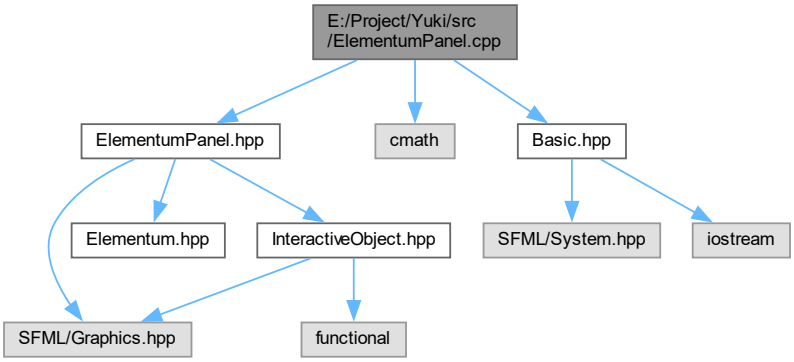
Include dependency graph for Elementum.cpp:



7.53 E:/Project/Yuki/src/ElementumPanel.cpp File Reference

```
#include "ElementumPanel.hpp"
#include <cmath>
#include "Basic.hpp"
```

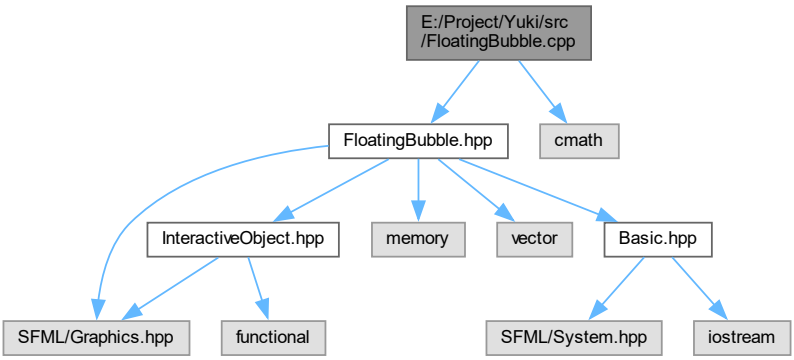
Include dependency graph for ElementumPanel.cpp:



7.54 E:/Project/Yuki/src/FloatingBubble.cpp File Reference

```
#include "FloatingBubble.hpp"
#include <cmath>
```

Include dependency graph for FloatingBubble.cpp:



Variables

- constexpr float kPi = 3.14159265358979323846f

7.54.1 Variable Documentation

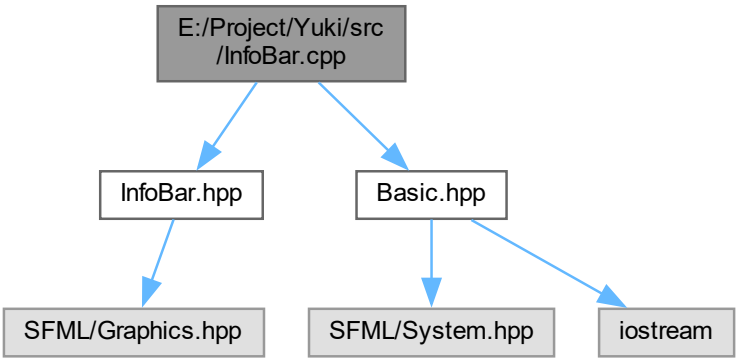
7.54.1.1 kPi

```
constexpr float kPi = 3.14159265358979323846f  [constexpr]
```

7.55 E:/Project/Yuki/src/InfoBar.cpp File Reference

```
#include "InfoBar.hpp"
#include "Basic.hpp"
```

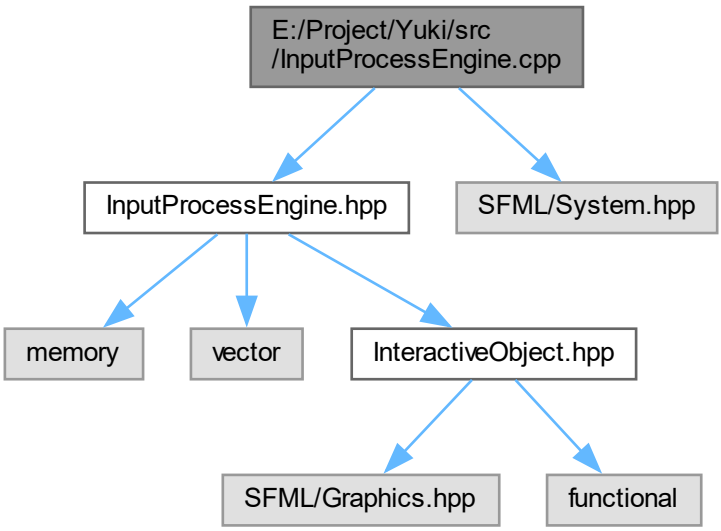
Include dependency graph for InfoBar.cpp:



7.56 E:/Project/Yuki/src/InputProcessEngine.cpp File Reference

```
#include "InputProcessEngine.hpp"
#include <SFML/System.hpp>
```

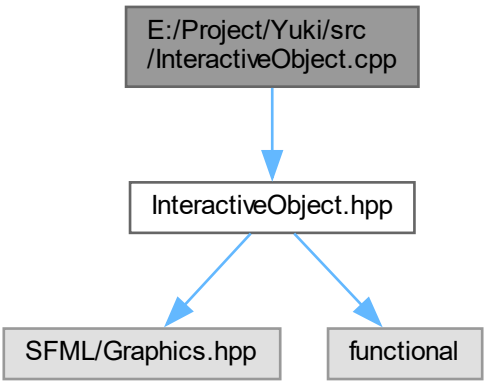
Include dependency graph for InputProcessEngine.cpp:



7.57 E:/Project/Yuki/src/InteractiveObject.cpp File Reference

```
#include "InteractiveObject.hpp"
```

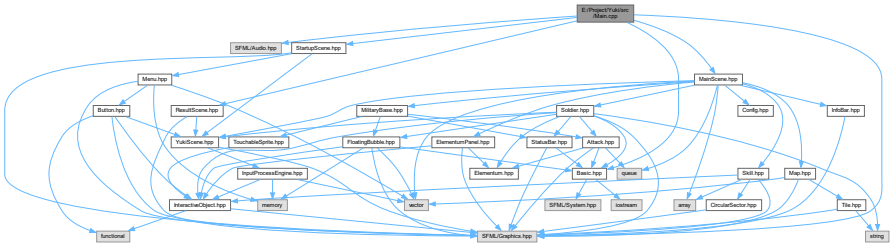
Include dependency graph for InteractiveObject.cpp:



7.58 E:/Project/Yuki/src/Main.cpp File Reference

```
#include <SFML/Audio.hpp>
#include <SFML/Graphics.hpp>
#include "Basic.hpp"
#include "MainScene.hpp"
#include "StartupScene.hpp"
#include "ResultScene.hpp"
```

Include dependency graph for Main.cpp:



Functions

- int main ()

7.58.1 Function Documentation

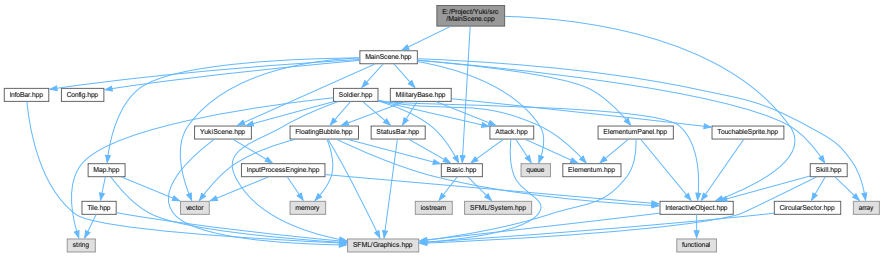
7.58.1.1 main()

```
int main ( )
```

7.59 E:/Project/Yuki/src/MainScene.cpp File Reference

```
#include "MainScene.hpp"
#include "Basic.hpp"
#include "InteractiveObject.hpp"
```

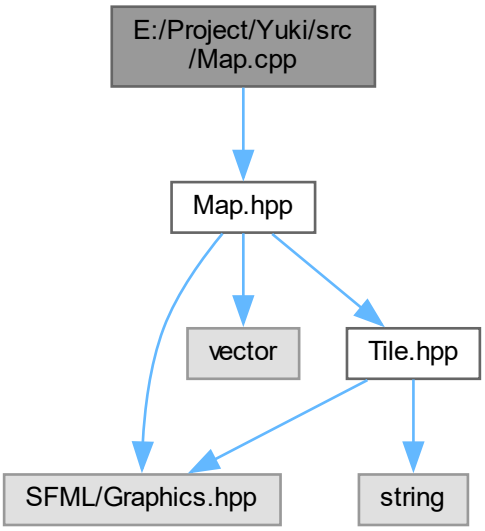
Include dependency graph for MainScene.cpp:



7.60 E:/Project/Yuki/src/Map.cpp File Reference

```
#include "Map.hpp"
```

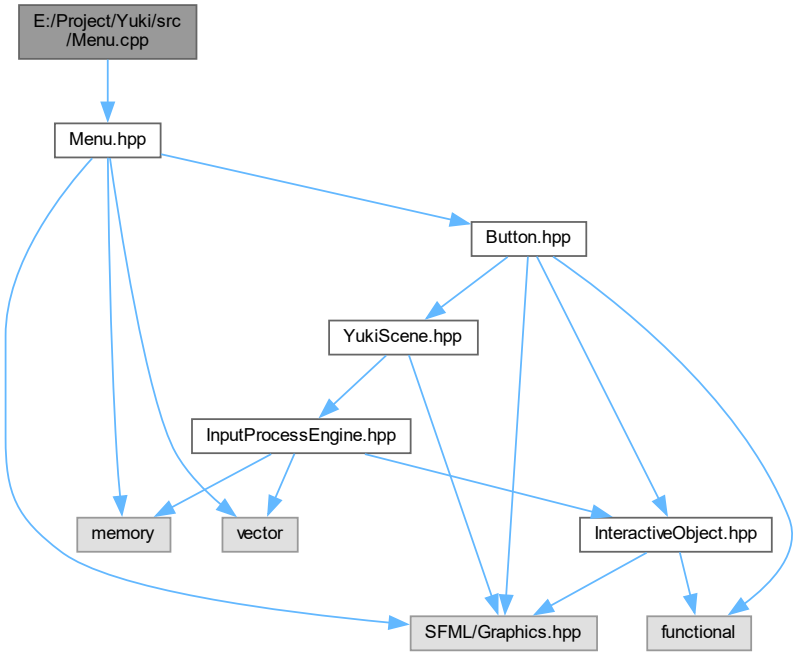
Include dependency graph for Map.cpp:



7.61 E:/Project/Yuki/src/Menu.cpp File Reference

```
#include "Menu.hpp"
```

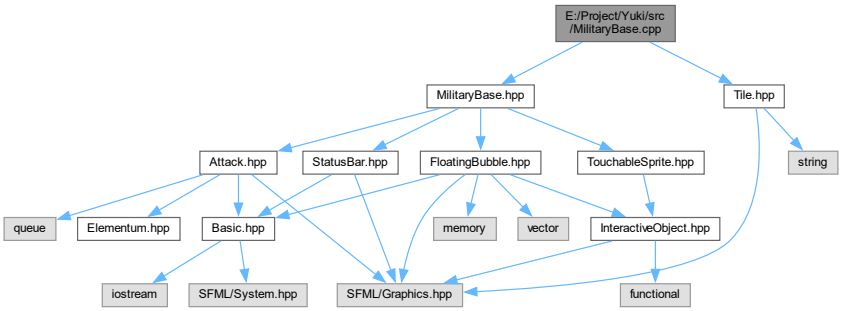
Include dependency graph for Menu.cpp:



7.62 E:/Project/Yuki/src/MilitaryBase.cpp File Reference

```
#include "MilitaryBase.hpp"
#include "Tile.hpp"
```

Include dependency graph for MilitaryBase.cpp:

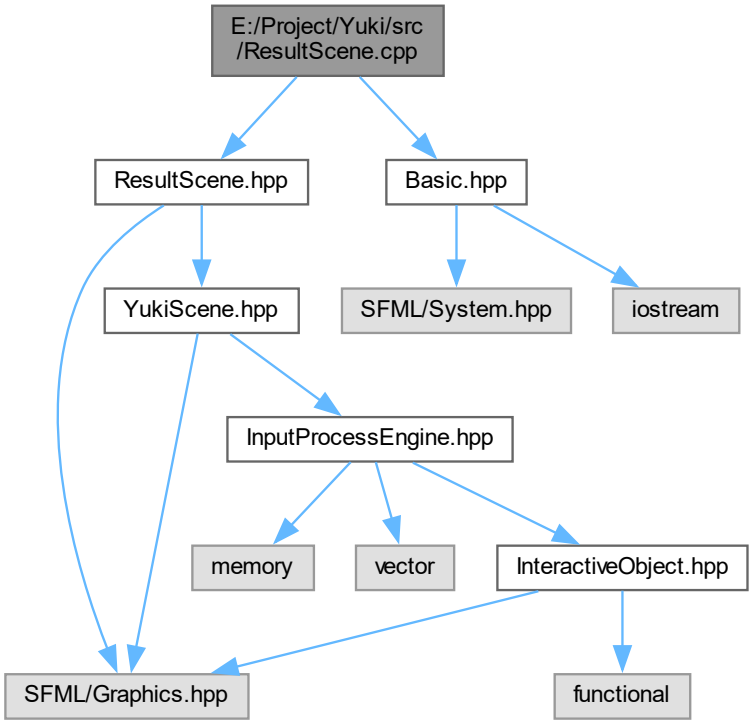


7.63 E:/Project/Yuki/src/Network.cpp File Reference

7.64 E:/Project/Yuki/src/ResultScene.cpp File Reference

```
#include "ResultScene.hpp"
#include "Basic.hpp"
```

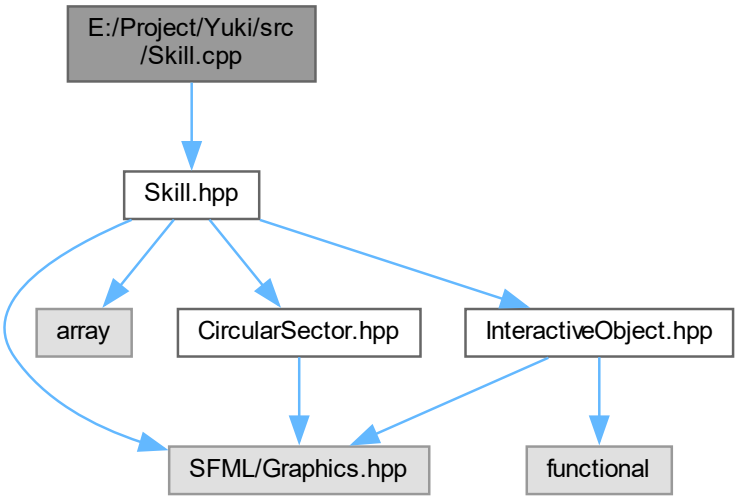
Include dependency graph for ResultScene.cpp:



7.65 E:/Project/Yuki/src/Skill.cpp File Reference

```
#include "Skill.hpp"
```

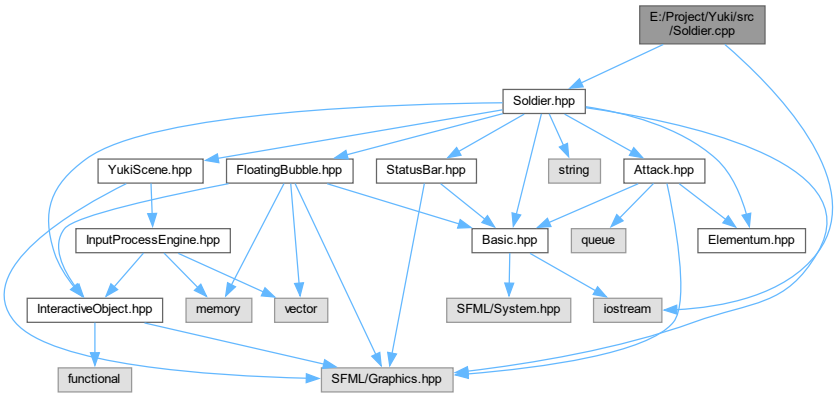
Include dependency graph for Skill.cpp:



7.66 E:/Project/Yuki/src/Soldier.cpp File Reference

```
#include "Soldier.hpp"
#include <iostream>
```

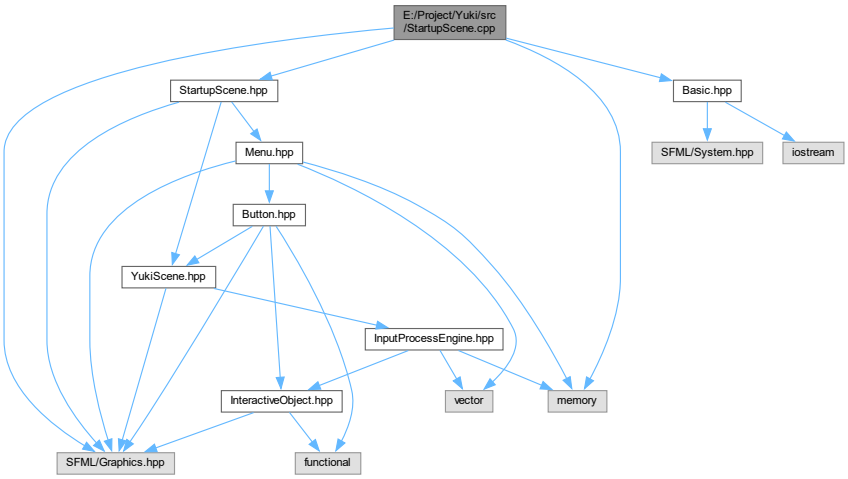
Include dependency graph for Soldier.cpp:



7.67 E:/Project/Yuki/src/StartupScene.cpp File Reference

```
#include "StartupScene.hpp"
#include <SFML/Graphics.hpp>
#include <memory>
#include "Basic.hpp"
```

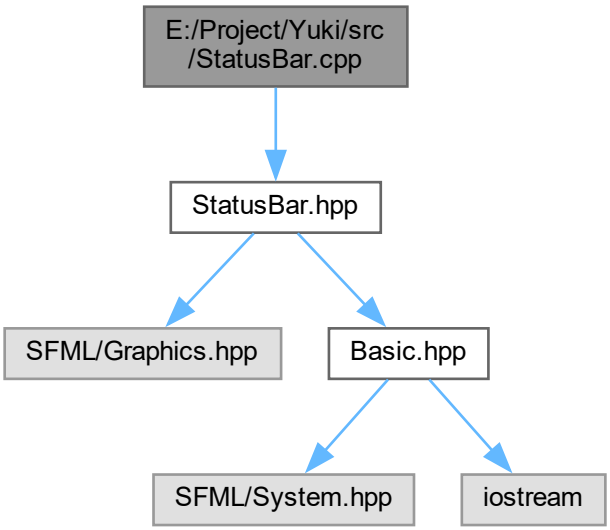
Include dependency graph for StartupScene.cpp:



7.68 E:/Project/Yuki/src/StatusBar.cpp File Reference

```
#include "StatusBar.hpp"
```

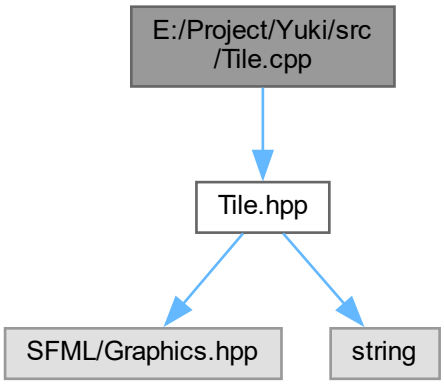
Include dependency graph for StatusBar.cpp:



7.69 E:/Project/Yuki/src/Tile.cpp File Reference

```
#include "Tile.hpp"
```

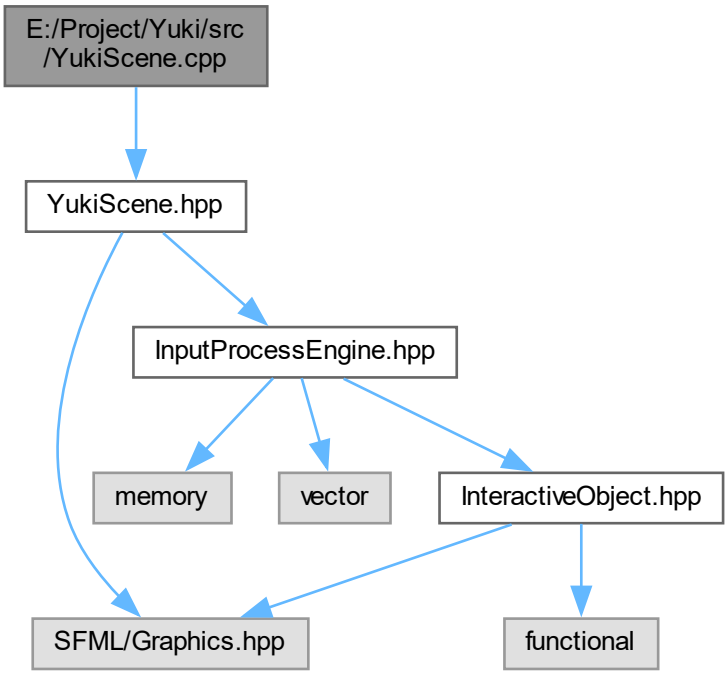
Include dependency graph for Tile.cpp:



7.70 E:/Project/Yuki/src/YukiScene.cpp File Reference

```
#include "YukiScene.hpp"
```

Include dependency graph for YukiScene.cpp:



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