

Tetris2D

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Chapter 1

Tetris2D

Projeto Computação Gráfica

Desenvolvido por Tiago Roxo e Joana Costa

Engenharia Informática

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

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Chapter 3

Class Index

3.1 Class List

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

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Chapter 4

File Index

4.1 File List

Here is a list of all files with brief descriptions:

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Chapter 5

Class Documentation

5.1 GeradorPecas Class Reference

```
#include <GeradorPecas.hpp>
```

Collaboration diagram for GeradorPecas:

GeradorPecas
<div>+ GeradorPecas() + GeradorPecas() + criaPecaZ() + criaPecaT() + criaPecaJ() + criaPecaS() + criaPecaO() + criaPecaL() + criaPecal() + setGameGrid() and 7 more...</div>

Public Member Functions

- [GeradorPecas](#) ()
- [GeradorPecas](#) (int, int, int, int, int **)
- void [criaPecaZ](#) (int **)
- void [criaPecaT](#) (int **)
- void [criaPecaJ](#) (int **)
- void [criaPecaS](#) (int **)
- void [criaPecaO](#) (int **)

- void [criaPecal](#) (int **)
- void [criaPecal](#) (int **)
- void [setGameGrid](#) (int **)
- [Peca](#) & [getPecaZ](#) ()
- [Peca](#) & [getPecaT](#) ()
- [Peca](#) & [getPecaJ](#) ()
- [Peca](#) & [getPecaS](#) ()
- [Peca](#) & [getPecaO](#) ()
- [Peca](#) & [getPecal](#) ()
- [Peca](#) & [getPecal](#) ()

5.1.1 Constructor & Destructor Documentation

5.1.1.1 GeradorPecas() [1/2]

```
GeradorPecas::GeradorPecas ( )
```

5.1.1.2 GeradorPecas() [2/2]

```
GeradorPecas::GeradorPecas (
    int xPosInicial,
    int yPosInicial,
    int iHeight,
    int iWidth,
    int ** gameGrid )
```

5.1.2 Member Function Documentation

5.1.2.1 criaPecal()

```
void GeradorPecas::criaPecal (
    int ** gameGrid )
```

Here is the caller graph for this function:



5.1.2.2 criaPecaJ()

```
void GeradorPecas::criaPecaJ (  
    int ** gameGrid )
```

Here is the caller graph for this function:



5.1.2.3 criaPecaL()

```
void GeradorPecas::criaPecaL (  
    int ** gameGrid )
```

Here is the caller graph for this function:



5.1.2.4 criaPecaO()

```
void GeradorPecas::criaPecaO (  
    int ** gameGrid )
```

Here is the caller graph for this function:



5.1.2.5 criaPecaS()

```
void GeradorPecas::criaPecaS (  
    int ** gameGrid )
```

Here is the caller graph for this function:



5.1.2.6 criaPecaT()

```
void GeradorPecas::criaPecaT (  
    int ** gameGrid )
```

Here is the caller graph for this function:



5.1.2.7 criaPecaZ()

```
void GeradorPecas::criaPecaZ (  
    int ** gameGrid )
```

Here is the caller graph for this function:



5.1.2.8 getPecal()

`Peca & GeradorPecas::getPecaI ()`

Here is the caller graph for this function:



5.1.2.9 getPecaJ()

`Peca & GeradorPecas::getPecaJ ()`

Here is the caller graph for this function:



5.1.2.10 getPecaL()

`Peca & GeradorPecas::getPecaL ()`

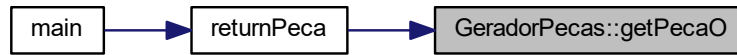
Here is the caller graph for this function:



5.1.2.11 getPecaO()

`Peca & GeradorPecas::getPecaO ()`

Here is the caller graph for this function:



5.1.2.12 getPecaS()

`Peca & GeradorPecas::getPecaS ()`

Here is the caller graph for this function:



5.1.2.13 getPecaT()

`Peca & GeradorPecas::getPecaT ()`

Here is the caller graph for this function:



5.1.2.14 getPecaZ()

`Peca & GeradorPecas::getPecaZ ()`

Here is the caller graph for this function:



5.1.2.15 setGameGrid()

```
void GeradorPecas::setGameGrid (
    int ** gameGrid )
```

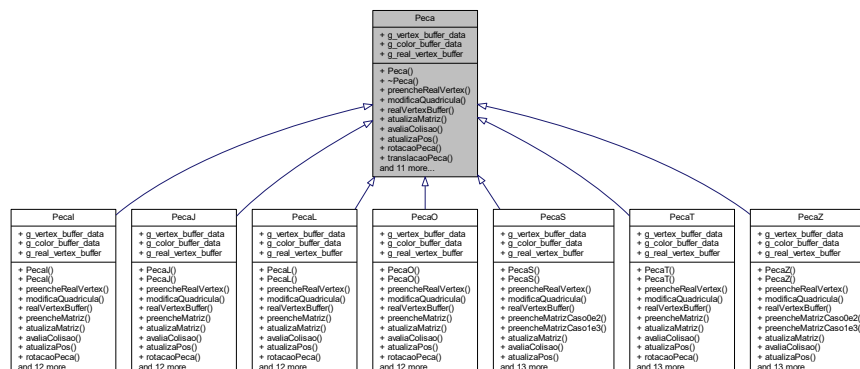
The documentation for this class was generated from the following files:

- headers/[GeradorPecas.hpp](#)
- src/[GeradorPecas.cpp](#)

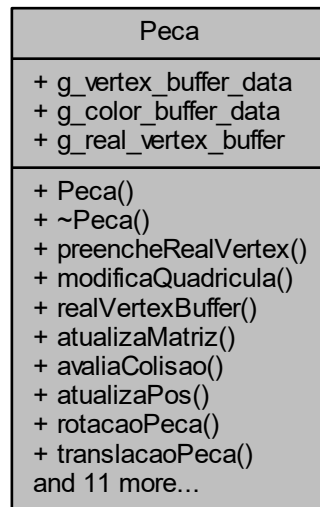
5.2 Peca Class Reference

```
#include <Peca.hpp>
```

Inheritance diagram for Peca:



Collaboration diagram for Peca:



Public Member Functions

- [Peca](#) ()
- virtual [~Peca](#) ()
- virtual void [preencheRealVertex](#) (GLfloat, GLfloat)=0
- virtual void [modificaQuadricula](#) (GLfloat, GLfloat)=0
- virtual void [realVertexBuffer](#) ()=0
- virtual bool [atualizaMatriz](#) ()=0
- virtual bool [avaliaColisao](#) ()=0
- virtual void [atualizaPos](#) ()=0
- virtual void [rotacaoPeca](#) (glm::mat4 &rot)=0
- virtual void [translacaoPeca](#) (glm::mat4 &trans)=0
- virtual int ** [getGameGrid](#) ()=0
- virtual int [getNumberRotate](#) ()=0
- virtual int [getNumberTranslation](#) ()=0
- virtual int [getNumberDown](#) ()=0
- virtual int [getXPosD](#) ()=0
- virtual int [getXPosE](#) ()=0
- virtual void [incNumberRotate](#) ()=0
- virtual void [incNumberTranslation](#) ()=0
- virtual void [decNumberTranslation](#) ()=0
- virtual void [incNumberDown](#) ()=0
- virtual void [drawObject](#) ()=0

Static Public Attributes

- static std::vector< GLfloat > [g_vertex_buffer_data](#)
- static std::vector< GLfloat > [g_color_buffer_data](#)
- static std::vector< GLfloat > [g_real_vertex_buffer](#)

5.2.1 Constructor & Destructor Documentation

5.2.1.1 Peca()

```
Peca::Peca ( ) [inline]
```

5.2.1.2 ~Peca()

```
virtual Peca::~Peca ( ) [inline], [virtual]
```

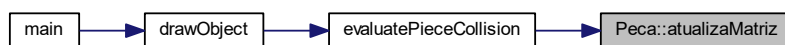
5.2.2 Member Function Documentation

5.2.2.1 atualizaMatriz()

```
virtual bool Peca::atualizaMatriz ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

Here is the caller graph for this function:



5.2.2.2 atualizaPos()

```
virtual void Peca::atualizaPos ( ) [pure virtual]
```

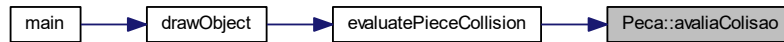
Implemented in [Pecal](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

5.2.2.3 `avaliaColisao()`

```
virtual bool Peca::avaliaColisao ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

Here is the caller graph for this function:

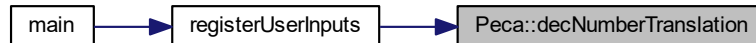


5.2.2.4 `decNumberTranslation()`

```
virtual void Peca::decNumberTranslation ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaT](#), [PecaZ](#), [PecaJ](#), [PecaL](#), and [PecaO](#).

Here is the caller graph for this function:

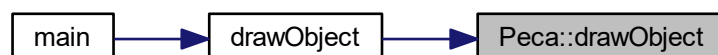


5.2.2.5 `drawObject()`

```
virtual void Peca::drawObject ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaT](#), [PecaZ](#), [PecaJ](#), [PecaL](#), and [PecaO](#).

Here is the caller graph for this function:

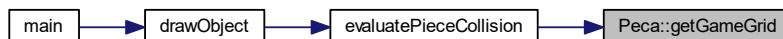


5.2.2.6 `getGameGrid()`

```
virtual int** Peca::getGameGrid ( ) [pure virtual]
```

Implemented in [PecaI](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

Here is the caller graph for this function:



5.2.2.7 `getNumberDown()`

```
virtual int Peca::getNumberDown ( ) [pure virtual]
```

Implemented in [PecaI](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

5.2.2.8 `getNumberRotate()`

```
virtual int Peca::getNumberRotate ( ) [pure virtual]
```

Implemented in [PecaI](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

5.2.2.9 `getNumberTranslation()`

```
virtual int Peca::getNumberTranslation ( ) [pure virtual]
```

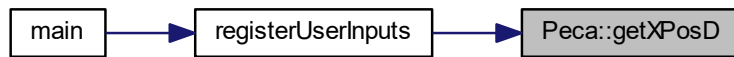
Implemented in [PecaI](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

5.2.2.10 `getXPosD()`

```
virtual int Peca::getXPosD ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

Here is the caller graph for this function:

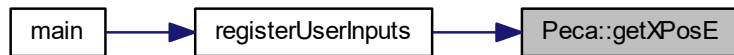


5.2.2.11 `getXPosE()`

```
virtual int Peca::getXPosE ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

Here is the caller graph for this function:

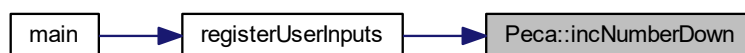


5.2.2.12 `incNumberDown()`

```
virtual void Peca::incNumberDown ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaT](#), [PecaZ](#), [PecaJ](#), [PecaL](#), and [PecaO](#).

Here is the caller graph for this function:

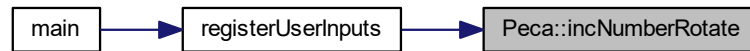


5.2.2.13 incNumberRotate()

```
virtual void Peca::incNumberRotate ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaT](#), [PecaZ](#), [PecaJ](#), [PecaL](#), and [PecaO](#).

Here is the caller graph for this function:



5.2.2.14 incNumberTranslation()

```
virtual void Peca::incNumberTranslation ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaT](#), [PecaZ](#), [PecaJ](#), [PecaL](#), and [PecaO](#).

Here is the caller graph for this function:



5.2.2.15 modificaQuadricula()

```
virtual void Peca::modificaQuadricula (
    GLfloat ,
    GLfloat ) [pure virtual]
```

Implemented in [Pecal](#), [PecaJ](#), [PecaL](#), [PecaO](#), [PecaS](#), [PecaT](#), and [PecaZ](#).

5.2.2.16 preencheRealVertex()

```
virtual void Peca::preencheRealVertex (
    GLfloat ,
    GLfloat ) [pure virtual]
```

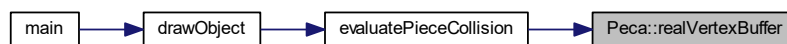
Implemented in [Pecal](#), [PecaJ](#), [PecaL](#), [PecaO](#), [PecaS](#), [PecaT](#), and [PecaZ](#).

5.2.2.17 realVertexBuffer()

```
virtual void Peca::realVertexBuffer ( ) [pure virtual]
```

Implemented in [Pecal](#), [PecaJ](#), [PecaL](#), [PecaO](#), [PecaS](#), [PecaT](#), and [PecaZ](#).

Here is the caller graph for this function:

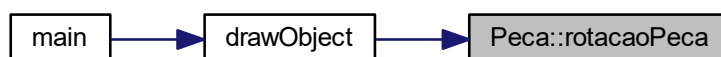


5.2.2.18 rotacaoPeca()

```
virtual void Peca::rotacaoPeca (
    glm::mat4 & rot ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

Here is the caller graph for this function:



5.2.2.19 translacaoPeca()

```
virtual void Peca::translacaoPeca (
    glm::mat4 & trans ) [pure virtual]
```

Implemented in [Pecal](#), [PecaS](#), [PecaZ](#), [PecaJ](#), [PecaL](#), [PecaO](#), and [PecaT](#).

Here is the caller graph for this function:



5.2.3 Member Data Documentation

5.2.3.1 g_color_buffer_data

```
std::vector<GLfloat> Peca::g_color_buffer_data [static]
```

5.2.3.2 g_real_vertex_buffer

```
std::vector<GLfloat> Peca::g_real_vertex_buffer [static]
```

5.2.3.3 g_vertex_buffer_data

```
std::vector<GLfloat> Peca::g_vertex_buffer_data [static]
```

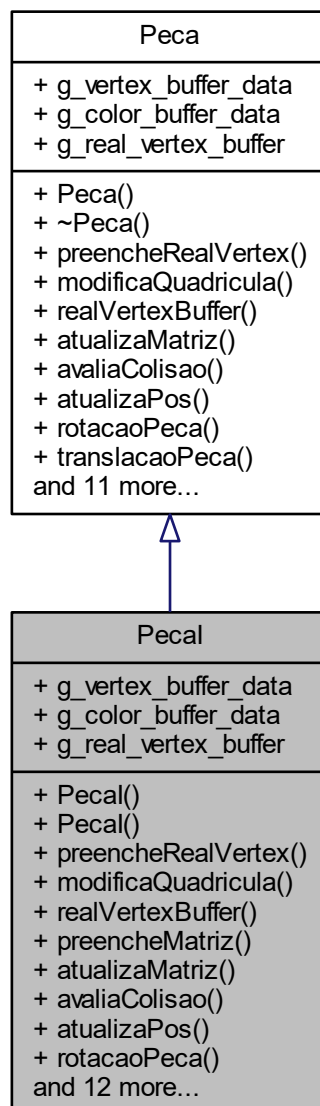
The documentation for this class was generated from the following file:

- headers/[Peca.hpp](#)

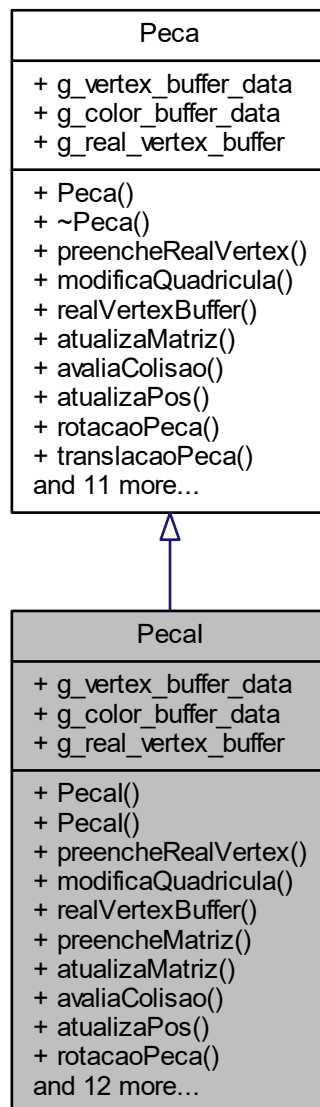
5.3 Pecal Class Reference

```
#include <PecaI.hpp>
```

Inheritance diagram for Pecal:



Collaboration diagram for Pecal:



Public Member Functions

- [Pecal](#) ()
- [Pecal](#) (int, int, int, int, int **)
- void [preencheRealVertex](#) (GLfloat, GLfloat)
- void [modificaQuadricula](#) (GLfloat, GLfloat)
- void [realVertexBuffer](#) ()
- bool [preencheMatriz](#) (int, int)
- bool [atualizaMatriz](#) ()
- bool [avaliaColisao](#) ()
- void [atualizaPos](#) ()

- void [rotacaoPeca](#) (glm::mat4 &rot)
- void [translacaoPeca](#) (glm::mat4 &trans)
- int ** [getGameGrid](#) ()
- int [getNumberRotate](#) ()
- int [getNumberTranslation](#) ()
- int [getNumberDown](#) ()
- int [getXPosD](#) ()
- int [getXPosE](#) ()
- void [incNumberRotate](#) ()
- void [incNumberTranslation](#) ()
- void [decNumberTranslation](#) ()
- void [incNumberDown](#) ()
- void [drawObject](#) ()

Static Public Attributes

- static std::vector< GLfloat > [g_vertex_buffer_data](#)
- static std::vector< GLfloat > [g_color_buffer_data](#)
- static std::vector< GLfloat > [g_real_vertex_buffer](#) = {}

5.3.1 Constructor & Destructor Documentation

5.3.1.1 Pecal() [1/2]

```
PecaI::PecaI ( )
```

5.3.1.2 Pecal() [2/2]

```
PecaI::PecaI (
    int xPosInicial,
    int yPosInicial,
    int iHeight,
    int iWidth,
    int ** gameGrid )
```

5.3.2 Member Function Documentation

5.3.2.1 atualizaMatriz()

```
bool PecaI::atualizaMatriz ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.3.2.2 atualizaPos()

```
void PecaI::atualizaPos ( ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:



5.3.2.3 avaliaColisao()

```
bool PecaI::avaliaColisao ( ) [virtual]
```

Implements [Peca](#).

5.3.2.4 decNumberTranslation()

```
void PecaI::decNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.3.2.5 drawObject()

```
void PecaI::drawObject ( ) [virtual]
```

Implements [Peca](#).

5.3.2.6 getGameGrid()

```
int ** PecaI::getGameGrid ( ) [virtual]
```

Implements [Peca](#).

5.3.2.7 getNumberDown()

```
int PecaI::getNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.3.2.8 getNumberRotate()

```
int PecaI::getNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.3.2.9 getNumberTranslation()

```
int PecaI::getNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.3.2.10 getXPosD()

```
int PecalI::getXPosD ( ) [virtual]
```

Implements [Pecal](#).

5.3.2.11 getXPosE()

```
int PecalI::getXPosE ( ) [virtual]
```

Implements [Pecal](#).

5.3.2.12 incNumberDown()

```
void PecalI::incNumberDown ( ) [virtual]
```

Implements [Pecal](#).

5.3.2.13 incNumberRotate()

```
void PecalI::incNumberRotate ( ) [virtual]
```

Implements [Pecal](#).

5.3.2.14 incNumberTranslation()

```
void PecalI::incNumberTranslation ( ) [virtual]
```

Implements [Pecal](#).

5.3.2.15 modificaQuadricula()

```
void PecaI::modificaQuadricula (  
    GLfloat x,  
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



Here is the caller graph for this function:



5.3.2.16 preencheMatriz()

```
bool PecaI::preencheMatriz (  
    int x,  
    int y )
```

Here is the caller graph for this function:

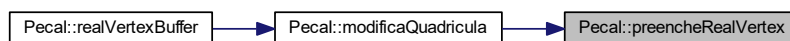


5.3.2.17 preencheRealVertex()

```
void PecalI::preencheRealVertex (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Pecal](#).

Here is the caller graph for this function:

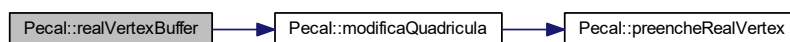


5.3.2.18 realVertexBuffer()

```
void PecalI::realVertexBuffer ( ) [virtual]
```

Implements [Pecal](#).

Here is the call graph for this function:



5.3.2.19 rotacaoPecal()

```
void PecalI::rotacaoPecal (
    glm::mat4 & rot ) [virtual]
```

Implements [Pecal](#).

5.3.2.20 translacaoPeca()

```
void PecaI::translacaoPeca (
    glm::mat4 & trans ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.3.3 Member Data Documentation

5.3.3.1 g_color_buffer_data

```
std::vector< GLfloat > PecaI::g_color_buffer_data [static]
```

5.3.3.2 g_real_vertex_buffer

```
std::vector< GLfloat > PecaI::g_real_vertex_buffer = {} [static]
```

5.3.3.3 g_vertex_buffer_data

```
std::vector< GLfloat > PecaI::g_vertex_buffer_data [static]
```

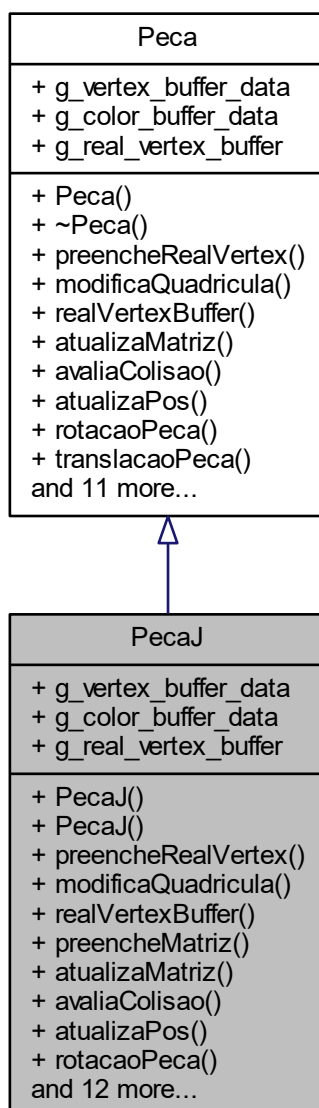
The documentation for this class was generated from the following files:

- headers/[Pecal.hpp](#)
- src/[Pecal.cpp](#)

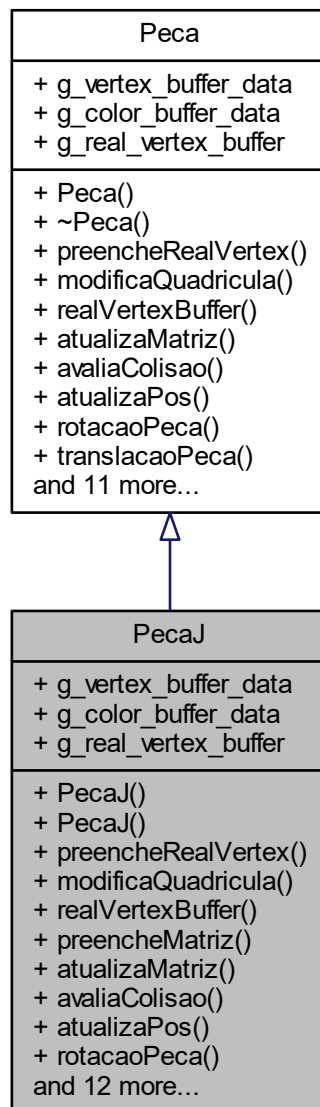
5.4 PecaJ Class Reference

```
#include <PecaJ.hpp>
```

Inheritance diagram for PecaJ:



Collaboration diagram for PecaJ:



Public Member Functions

- [PecaJ](#) ()
- [PecaJ](#) (int, int, int, int, int **)
- void [preencheRealVertex](#) (GLfloat, GLfloat)
- void [modificaQuadricula](#) (GLfloat, GLfloat)
- void [realVertexBuffer](#) ()
- bool [preencheMatriz](#) (int, int, int, int)
- bool [atualizaMatriz](#) ()
- bool [avaliaColisao](#) ()
- void [atualizaPos](#) ()

- void [rotacaoPeca](#) (glm::mat4 &rot)
- void [translacaoPeca](#) (glm::mat4 &trans)
- int ** [getGameGrid](#) ()
- int [getNumberRotate](#) ()
- int [getNumberTranslation](#) ()
- int [getNumberDown](#) ()
- int [getXPosD](#) ()
- int [getXPosE](#) ()
- void [incNumberRotate](#) ()
- void [incNumberTranslation](#) ()
- void [decNumberTranslation](#) ()
- void [incNumberDown](#) ()
- void [drawObject](#) ()

Static Public Attributes

- static std::vector< GLfloat > [g_vertex_buffer_data](#)
- static std::vector< GLfloat > [g_color_buffer_data](#)
- static std::vector< GLfloat > [g_real_vertex_buffer](#) = {}

5.4.1 Constructor & Destructor Documentation

5.4.1.1 PecaJ() [1/2]

```
PecaJ::PecaJ ( )
```

5.4.1.2 PecaJ() [2/2]

```
PecaJ::PecaJ (
    int xPosInicial,
    int yPosInicial,
    int iHeight,
    int iWidth,
    int ** gameGrid )
```

5.4.2 Member Function Documentation

5.4.2.1 atualizaMatriz()

```
bool PecaJ::atualizaMatriz ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.4.2.2 atualizaPos()

```
void PecaJ::atualizaPos ( ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:



5.4.2.3 avaliaColisao()

```
bool PecaJ::avaliaColisao ( ) [virtual]
```

Implements [Peca](#).

5.4.2.4 decNumberTranslation()

```
void PecaJ::decNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.4.2.5 drawObject()

```
void PecaJ::drawObject ( ) [virtual]
```

Implements [Peca](#).

5.4.2.6 getGameGrid()

```
int ** PecaJ::getGameGrid ( ) [virtual]
```

Implements [Peca](#).

5.4.2.7 getNumberDown()

```
int PecaJ::getNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.4.2.8 getNumberRotate()

```
int PecaJ::getNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.4.2.9 getNumberTranslation()

```
int PecaJ::getNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.4.2.10 `getXPosD()`

```
int PecaJ::getXPosD ( ) [virtual]
```

Implements [Peca](#).

5.4.2.11 `getXPosE()`

```
int PecaJ::getXPosE ( ) [virtual]
```

Implements [Peca](#).

5.4.2.12 `incNumberDown()`

```
void PecaJ::incNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.4.2.13 `incNumberRotate()`

```
void PecaJ::incNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.4.2.14 `incNumberTranslation()`

```
void PecaJ::incNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.4.2.15 modificaQuadricula()

```
void PecaJ::modificaQuadricula (  
    GLfloat x,  
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



Here is the caller graph for this function:



5.4.2.16 preencheMatriz()

```
bool PecaJ::preencheMatriz (  
    int x,  
    int y,  
    int xAjuste,  
    int yAjuste )
```

Here is the caller graph for this function:

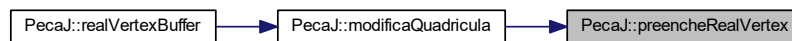


5.4.2.17 preencheRealVertex()

```
void PecaJ::preencheRealVertex (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:

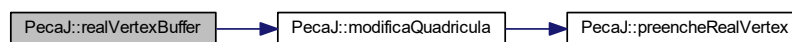


5.4.2.18 realVertexBuffer()

```
void PecaJ::realVertexBuffer ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.4.2.19 rotacaoPeca()

```
void PecaJ::rotacaoPeca (
    glm::mat4 & rot ) [virtual]
```

Implements [Peca](#).

5.4.2.20 translacaoPeca()

```
void PecaJ::translacaoPeca (
    glm::mat4 & trans ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.4.3 Member Data Documentation

5.4.3.1 g_color_buffer_data

```
std::vector< GLfloat > PecaJ::g_color_buffer_data [static]
```

5.4.3.2 g_real_vertex_buffer

```
std::vector< GLfloat > PecaJ::g_real_vertex_buffer = {} [static]
```

5.4.3.3 g_vertex_buffer_data

```
std::vector< GLfloat > PecaJ::g_vertex_buffer_data [static]
```

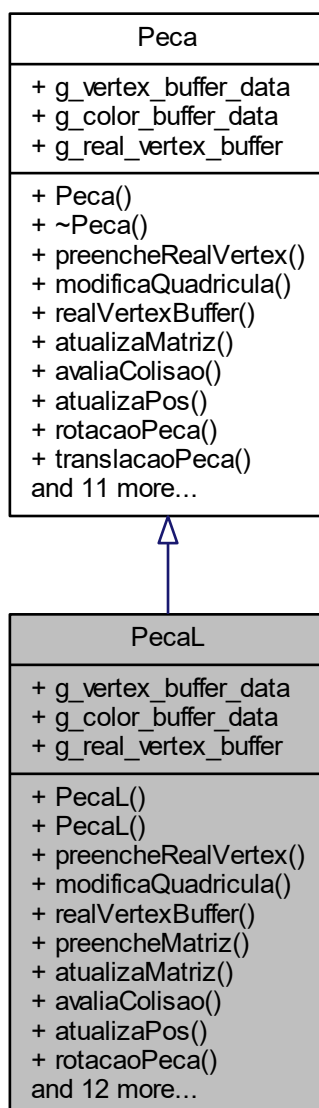
The documentation for this class was generated from the following files:

- [headers/PecaJ.hpp](#)
- [src/PecaJ.cpp](#)

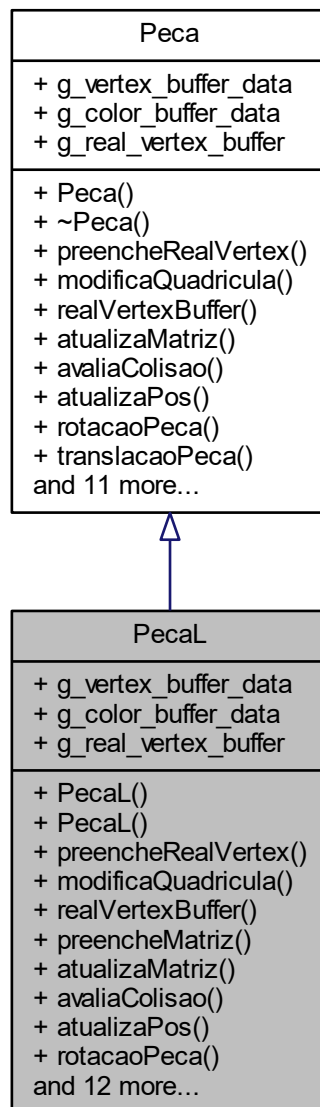
5.5 PecaL Class Reference

```
#include <PecaL.hpp>
```

Inheritance diagram for PecaL:



Collaboration diagram for PecaL:



Public Member Functions

- [PecaL](#) ()
- [PecaL](#) (int, int, int, int, int **)
- void [preencheRealVertex](#) (GLfloat, GLfloat)
- void [modificaQuadricula](#) (GLfloat, GLfloat)
- void [realVertexBuffer](#) ()
- bool [preencheMatriz](#) (int, int, int, int)
- bool [atualizaMatriz](#) ()
- bool [avaliaColisao](#) ()
- void [atualizaPos](#) ()

- void [rotacaoPeca](#) (glm::mat4 &rot)
- void [translacaoPeca](#) (glm::mat4 &trans)
- int ** [getGameGrid](#) ()
- int [getNumberRotate](#) ()
- int [getNumberTranslation](#) ()
- int [getNumberDown](#) ()
- int [getXPosD](#) ()
- int [getXPosE](#) ()
- void [incNumberRotate](#) ()
- void [incNumberTranslation](#) ()
- void [decNumberTranslation](#) ()
- void [incNumberDown](#) ()
- void [drawObject](#) ()

Static Public Attributes

- static std::vector< GLfloat > [g_vertex_buffer_data](#)
- static std::vector< GLfloat > [g_color_buffer_data](#)
- static std::vector< GLfloat > [g_real_vertex_buffer](#) = {}

5.5.1 Constructor & Destructor Documentation

5.5.1.1 PecaL() [1/2]

```
PecaL::PecaL ( )
```

5.5.1.2 PecaL() [2/2]

```
PecaL::PecaL (
    int xPosInicial,
    int yPosInicial,
    int iHeight,
    int iWidth,
    int ** gameGrid )
```

5.5.2 Member Function Documentation

5.5.2.1 atualizaMatriz()

```
bool PecaL::atualizaMatriz ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.5.2.2 atualizaPos()

```
void PecaL::atualizaPos ( ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:



5.5.2.3 avaliaColisao()

```
bool PecaL::avaliaColisao ( ) [virtual]
```

Implements [Peca](#).

5.5.2.4 decNumberTranslation()

```
void PecaL::decNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.5.2.5 drawObject()

```
void PecaL::drawObject ( ) [virtual]
```

Implements [Peca](#).

5.5.2.6 getGameGrid()

```
int ** PecaL::getGameGrid ( ) [virtual]
```

Implements [Peca](#).

5.5.2.7 getNumberDown()

```
int PecaL::getNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.5.2.8 getNumberRotate()

```
int PecaL::getNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.5.2.9 getNumberTranslation()

```
int PecaL::getNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.5.2.10 getXPosD()

```
int PecaL::getXPosD ( ) [virtual]
```

Implements [Peca](#).

5.5.2.11 getXPosE()

```
int PecaL::getXPosE ( ) [virtual]
```

Implements [Peca](#).

5.5.2.12 incNumberDown()

```
void PecaL::incNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.5.2.13 incNumberRotate()

```
void PecaL::incNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.5.2.14 incNumberTranslation()

```
void PecaL::incNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.5.2.15 modificaQuadrícula()

```
void PecaL::modificaQuadrícula (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



Here is the caller graph for this function:



5.5.2.16 preencheMatriz()

```
bool PecaL::preencheMatriz (
    int x,
    int y,
    int xAjuste,
    int yAjuste )
```

Here is the caller graph for this function:

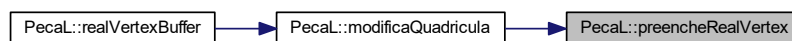


5.5.2.17 preencheRealVertex()

```
void PecaL::preencheRealVertex (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:

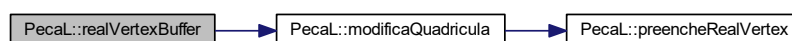


5.5.2.18 realVertexBuffer()

```
void PecaL::realVertexBuffer ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.5.2.19 rotacaoPeca()

```
void PecaL::rotacaoPeca (
    glm::mat4 & rot ) [virtual]
```

Implements [Peca](#).

5.5.2.20 translacaoPeca()

```
void PecaL::translacaoPeca (
    glm::mat4 & trans ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.5.3 Member Data Documentation

5.5.3.1 g_color_buffer_data

```
std::vector< GLfloat > PecaL::g_color_buffer_data [static]
```

5.5.3.2 g_real_vertex_buffer

```
std::vector< GLfloat > PecaL::g_real_vertex_buffer = {} [static]
```

5.5.3.3 g_vertex_buffer_data

```
std::vector< GLfloat > PecaL::g_vertex_buffer_data [static]
```

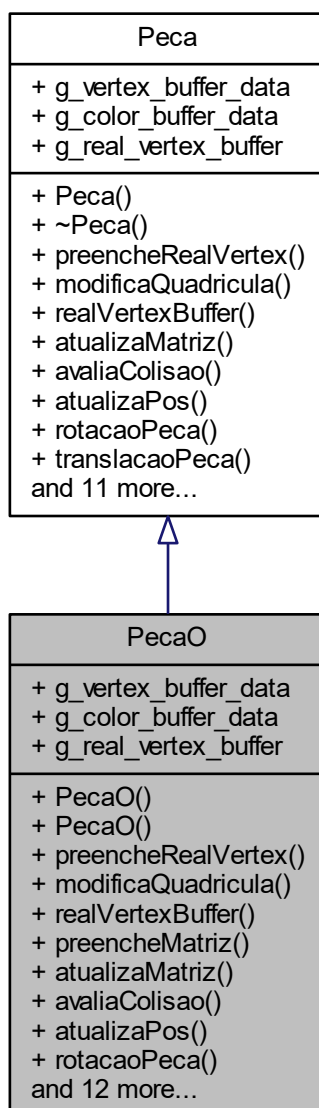
The documentation for this class was generated from the following files:

- [headers/PecaL.hpp](#)
- [src/PecaL.cpp](#)

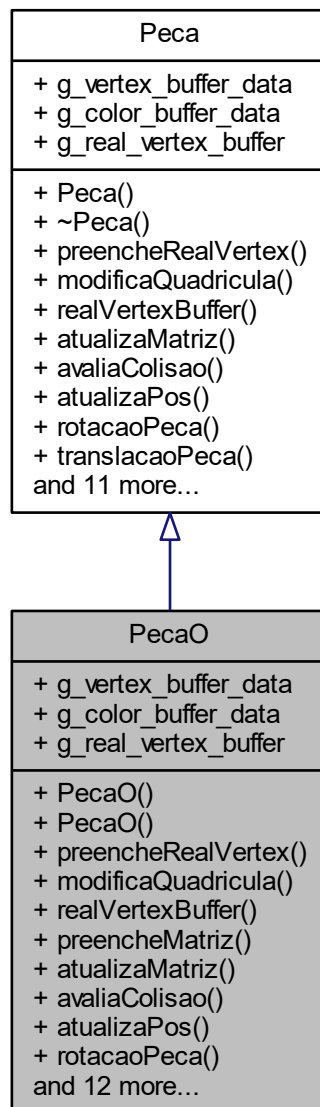
5.6 PecaO Class Reference

```
#include <PecaO.hpp>
```

Inheritance diagram for PecaO:



Collaboration diagram for PecaO:



Public Member Functions

- [PecaO \(\)](#)
- [PecaO \(int, int, int, int, int **\)](#)
- void [preencheRealVertex](#) (GLfloat, GLfloat)
- void [modificaQuadricula](#) (GLfloat, GLfloat)
- void [realVertexBuffer](#) ()
- bool [preencheMatriz](#) (int, int)
- bool [atualizaMatriz](#) ()
- bool [avaliaColisao](#) ()
- void [atualizaPos](#) ()

- void [rotacaoPeca](#) (glm::mat4 &rot)
- void [translacaoPeca](#) (glm::mat4 &trans)
- int ** [getGameGrid](#) ()
- int [getNumberRotate](#) ()
- int [getNumberTranslation](#) ()
- int [getNumberDown](#) ()
- int [getXPosD](#) ()
- int [getXPosE](#) ()
- void [incNumberRotate](#) ()
- void [incNumberTranslation](#) ()
- void [decNumberTranslation](#) ()
- void [incNumberDown](#) ()
- void [drawObject](#) ()

Static Public Attributes

- static std::vector< GLfloat > [g_vertex_buffer_data](#)
- static std::vector< GLfloat > [g_color_buffer_data](#)
- static std::vector< GLfloat > [g_real_vertex_buffer](#) = {}

5.6.1 Constructor & Destructor Documentation

5.6.1.1 PecaO() [1/2]

```
PecaO::PecaO ( )
```

5.6.1.2 PecaO() [2/2]

```
PecaO::PecaO (
    int xPosInicial,
    int yPosInicial,
    int iHeight,
    int iWidth,
    int ** gameGrid )
```

5.6.2 Member Function Documentation

5.6.2.1 atualizaMatriz()

```
bool PecaO::atualizaMatriz ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.6.2.2 atualizaPos()

```
void PecaO::atualizaPos ( ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:



5.6.2.3 avaliaColisao()

```
bool PecaO::avaliaColisao ( ) [virtual]
```

Implements [Peca](#).

5.6.2.4 decNumberTranslation()

```
void PecaO::decNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.6.2.5 drawObject()

```
void PecaO::drawObject ( ) [virtual]
```

Implements [Peca](#).

5.6.2.6 getGameGrid()

```
int ** PecaO::getGameGrid ( ) [virtual]
```

Implements [Peca](#).

5.6.2.7 getNumberDown()

```
int PecaO::getNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.6.2.8 getNumberRotate()

```
int PecaO::getNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.6.2.9 getNumberTranslation()

```
int PecaO::getNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.6.2.10 `getXPosD()`

```
int PecaO::getXPosD ( ) [virtual]
```

Implements [Peca](#).

5.6.2.11 `getXPosE()`

```
int PecaO::getXPosE ( ) [virtual]
```

Implements [Peca](#).

5.6.2.12 `incNumberDown()`

```
void PecaO::incNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.6.2.13 `incNumberRotate()`

```
void PecaO::incNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.6.2.14 `incNumberTranslation()`

```
void PecaO::incNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.6.2.15 modificaQuadricula()

```
void PecaO::modificaQuadricula (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



Here is the caller graph for this function:



5.6.2.16 preencheMatriz()

```
bool PecaO::preencheMatriz (
    int x,
    int y )
```

Here is the caller graph for this function:

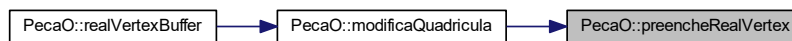


5.6.2.17 preencheRealVertex()

```
void PecaO::preencheRealVertex (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:

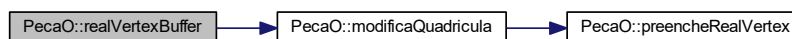


5.6.2.18 realVertexBuffer()

```
void PecaO::realVertexBuffer ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.6.2.19 rotacaoPeca()

```
void PecaO::rotacaoPeca (
    glm::mat4 & rot ) [virtual]
```

Implements [Peca](#).

5.6.2.20 translacaoPeca()

```
void PecaO::translacaoPeca (
    glm::mat4 & trans ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.6.3 Member Data Documentation

5.6.3.1 g_color_buffer_data

```
std::vector< GLfloat > PecaO::g_color_buffer_data [static]
```

5.6.3.2 g_real_vertex_buffer

```
std::vector< GLfloat > PecaO::g_real_vertex_buffer = {} [static]
```

5.6.3.3 g_vertex_buffer_data

```
std::vector< GLfloat > PecaO::g_vertex_buffer_data [static]
```

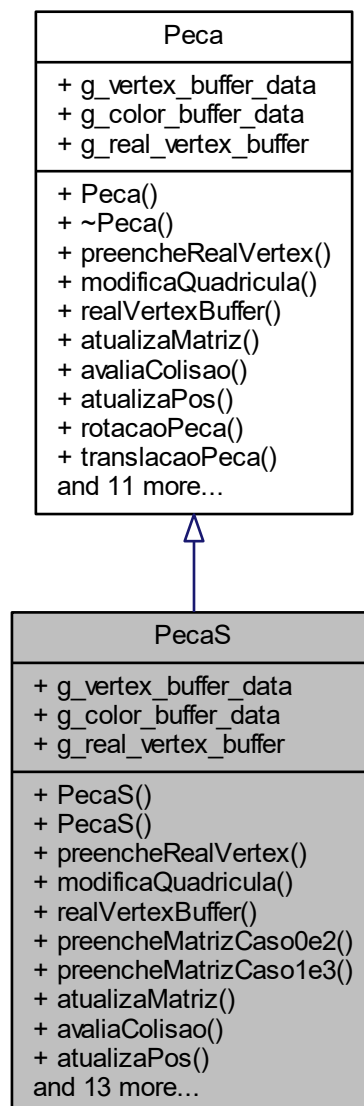
The documentation for this class was generated from the following files:

- headers/[PecaO.hpp](#)
- src/[PecaO.cpp](#)

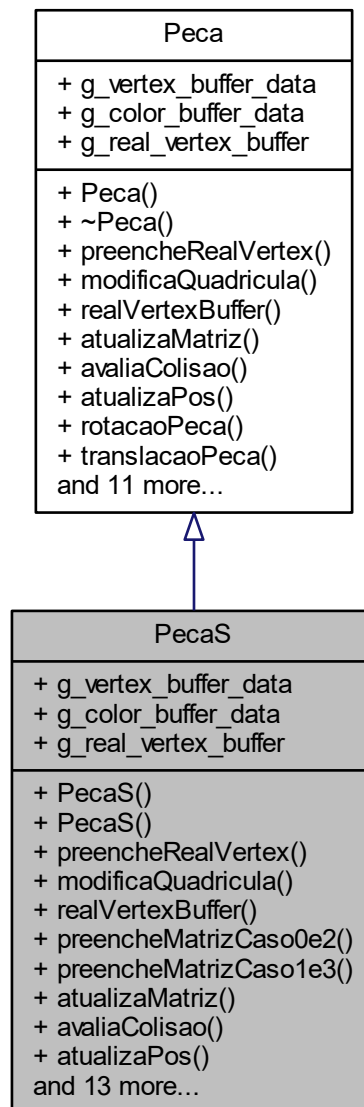
5.7 PecaS Class Reference

```
#include <PecaS.hpp>
```

Inheritance diagram for PecaS:



Collaboration diagram for PecaS:



Public Member Functions

- [PecaS](#) ()
- [PecaS](#) (int, int, int, int, int **)
- void [preencheRealVertex](#) (GLfloat, GLfloat)
- void [modificaQuadricula](#) (GLfloat, GLfloat)
- void [realVertexBuffer](#) ()
- bool [preencheMatrizCaso0e2](#) (int, int)
- bool [preencheMatrizCaso1e3](#) (int, int)
- bool [atualizaMatriz](#) ()
- bool [avaliaColisao](#) ()

- void [atualizaPos](#) ()
- void [rotacaoPeca](#) (glm::mat4 &rot)
- void [translacaoPeca](#) (glm::mat4 &trans)
- int ** [getGameGrid](#) ()
- int [getNumberRotate](#) ()
- int [getNumberTranslation](#) ()
- int [getNumberDown](#) ()
- int [getXPosD](#) ()
- int [getXPosE](#) ()
- void [incNumberRotate](#) ()
- void [incNumberTranslation](#) ()
- void [decNumberTranslation](#) ()
- void [incNumberDown](#) ()
- void [drawObject](#) ()

Static Public Attributes

- static std::vector< GLfloat > [g_vertex_buffer_data](#)
- static std::vector< GLfloat > [g_color_buffer_data](#)
- static std::vector< GLfloat > [g_real_vertex_buffer](#) = {}

5.7.1 Constructor & Destructor Documentation

5.7.1.1 PecaS() [1/2]

```
PecaS::PecaS ( )
```

5.7.1.2 PecaS() [2/2]

```
PecaS::PecaS (
    int xPosInicial,
    int yPosInicial,
    int iHeight,
    int iWidth,
    int ** gameGrid )
```

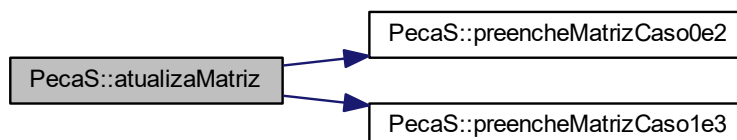
5.7.2 Member Function Documentation

5.7.2.1 atualizaMatriz()

```
bool PecaS::atualizaMatriz ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.7.2.2 atualizaPos()

```
void PecaS::atualizaPos ( ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:



5.7.2.3 avaliaColisao()

```
bool PecaS::avaliaColisao ( ) [virtual]
```

Implements [Peca](#).

5.7.2.4 decNumberTranslation()

```
void PecaS::decNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.7.2.5 drawObject()

```
void PecaS::drawObject ( ) [virtual]
```

Implements [Peca](#).

5.7.2.6 getGameGrid()

```
int ** PecaS::getGameGrid ( ) [virtual]
```

Implements [Peca](#).

5.7.2.7 getNumberDown()

```
int PecaS::getNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.7.2.8 getNumberRotate()

```
int PecaS::getNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.7.2.9 getNumberTranslation()

```
int PecaS::getNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.7.2.10 getXPosD()

```
int PecaS::getXPosD ( ) [virtual]
```

Implements [Peca](#).

5.7.2.11 getXPosE()

```
int PecaS::getXPosE ( ) [virtual]
```

Implements [Peca](#).

5.7.2.12 incNumberDown()

```
void PecaS::incNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.7.2.13 incNumberRotate()

```
void PecaS::incNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.7.2.14 incNumberTranslation()

```
void PecaS::incNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.7.2.15 modificaQuadricula()

```
void PecaS::modificaQuadricula (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



Here is the caller graph for this function:



5.7.2.16 preencheMatrizCaso0e2()

```
bool PecaS::preencheMatrizCaso0e2 (
    int x,
    int y )
```

Here is the caller graph for this function:



5.7.2.17 preencheMatrizCaso1e3()

```
bool PecaS::preencheMatrizCaso1e3 (
    int x,
    int y )
```

Here is the caller graph for this function:

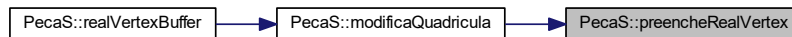


5.7.2.18 preencheRealVertex()

```
void PecaS::preencheRealVertex (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca.](#)

Here is the caller graph for this function:

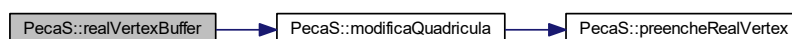


5.7.2.19 realVertexBuffer()

```
void PecaS::realVertexBuffer ( ) [virtual]
```

Implements [Peca.](#)

Here is the call graph for this function:



5.7.2.20 rotacaoPeca()

```
void PecaS::rotacaoPeca (
    glm::mat4 & rot ) [virtual]
```

Implements [Peca](#).

5.7.2.21 translacaoPeca()

```
void PecaS::translacaoPeca (
    glm::mat4 & trans ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.7.3 Member Data Documentation

5.7.3.1 g_color_buffer_data

```
std::vector< GLfloat > PecaS::g_color_buffer_data [static]
```

5.7.3.2 g_real_vertex_buffer

```
std::vector< GLfloat > PecaS::g_real_vertex_buffer = {} [static]
```

5.7.3.3 g_vertex_buffer_data

```
std::vector< GLfloat > PecaS::g_vertex_buffer_data [static]
```

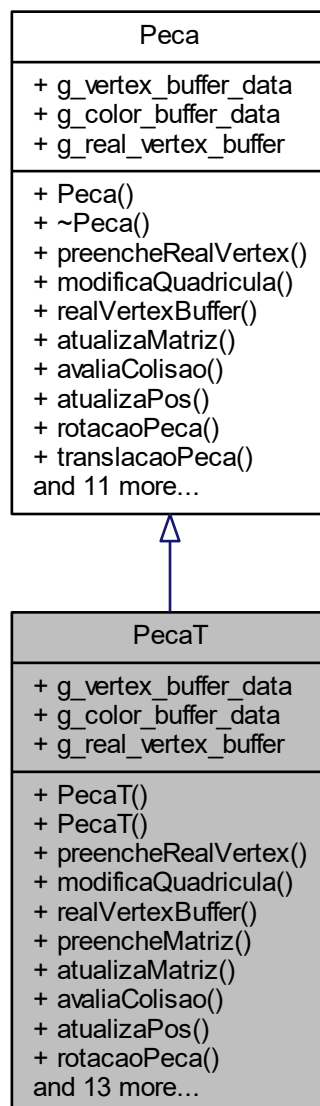
The documentation for this class was generated from the following files:

- headers/[PecaS.hpp](#)
- src/[PecaS.cpp](#)

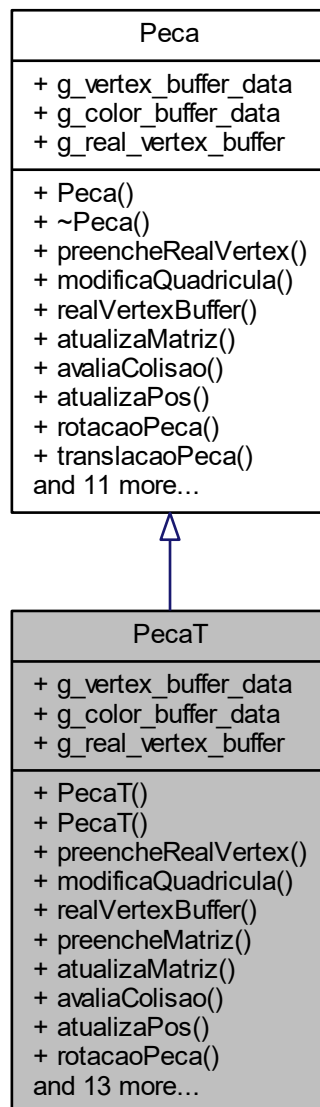
5.8 PecaT Class Reference

```
#include <PecaT.hpp>
```

Inheritance diagram for PecaT:



Collaboration diagram for PecaT:



Public Member Functions

- [PecaT](#) ()
- [PecaT](#) (int, int, int, int, int **)
- void [preencheRealVertex](#) (GLfloat, GLfloat)
- void [modificaQuadricula](#) (GLfloat, GLfloat)
- void [realVertexBuffer](#) ()
- bool [preencheMatriz](#) (int, int, int, int)
- bool [atualizaMatriz](#) ()
- bool [avaliaColisao](#) ()
- void [atualizaPos](#) ()

- void [rotacaoPeca](#) (glm::mat4 &rot)
- void [translacaoPeca](#) (glm::mat4 &trans)
- int ** [getGameGrid](#) ()
- int [getNumberRotate](#) ()
- int [getNumberTranslation](#) ()
- int [getNumberDown](#) ()
- int [getXPosD](#) ()
- int [getXPosE](#) ()
- int [getYPos](#) ()
- void [incNumberRotate](#) ()
- void [incNumberTranslation](#) ()
- void [decNumberTranslation](#) ()
- void [incNumberDown](#) ()
- void [drawObject](#) ()

Static Public Attributes

- static std::vector< GLfloat > [g_vertex_buffer_data](#)
- static std::vector< GLfloat > [g_color_buffer_data](#)
- static std::vector< GLfloat > [g_real_vertex_buffer](#) = {}

5.8.1 Constructor & Destructor Documentation

5.8.1.1 PecaT() [1/2]

```
PecaT::PecaT ( )
```

5.8.1.2 PecaT() [2/2]

```
PecaT::PecaT (
    int xPosInicial,
    int yPosInicial,
    int iHeight,
    int iWidth,
    int ** gameGrid )
```

5.8.2 Member Function Documentation

5.8.2.1 atualizaMatriz()

```
bool PecaT::atualizaMatriz ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.8.2.2 atualizaPos()

```
void PecaT::atualizaPos ( ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:



5.8.2.3 avaliaColisao()

```
bool PecaT::avaliaColisao ( ) [virtual]
```

Implements [Peca](#).

5.8.2.4 decNumberTranslation()

```
void PecaT::decNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.8.2.5 drawObject()

```
void PecaT::drawObject ( ) [virtual]
```

Implements [Peca](#).

5.8.2.6 getGameGrid()

```
int ** PecaT::getGameGrid ( ) [virtual]
```

Implements [Peca](#).

5.8.2.7 getNumberDown()

```
int PecaT::getNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.8.2.8 getNumberRotate()

```
int PecaT::getNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.8.2.9 getNumberTranslation()

```
int PecaT::getNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.8.2.10 getXPosD()

```
int PecaT::getXPosD ( ) [virtual]
```

Implements [Peca](#).

5.8.2.11 getXPosE()

```
int PecaT::getXPosE ( ) [virtual]
```

Implements [Peca](#).

5.8.2.12 getYPos()

```
int PecaT::getYPos ( )
```

5.8.2.13 incNumberDown()

```
void PecaT::incNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.8.2.14 incNumberRotate()

```
void PecaT::incNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.8.2.15 incNumberTranslation()

```
void PecaT::incNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.8.2.16 modificaQuadricula()

```
void PecaT::modificaQuadricula (  
    GLfloat x,  
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



Here is the caller graph for this function:



5.8.2.17 preencheMatriz()

```
bool PecaT::preencheMatriz (  
    int x,  
    int y,  
    int xAjuste,  
    int yAjuste )
```

Here is the caller graph for this function:

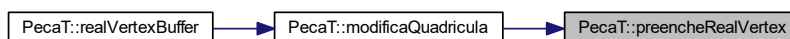


5.8.2.18 preencheRealVertex()

```
void PecaT::preencheRealVertex (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:

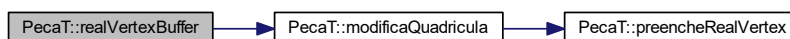


5.8.2.19 realVertexBuffer()

```
void PecaT::realVertexBuffer ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.8.2.20 rotacaoPeca()

```
void PecaT::rotacaoPeca (
    glm::mat4 & rot ) [virtual]
```

Implements [Peca](#).

5.8.2.21 translacaoPeca()

```
void PecaT::translacaoPeca (
    glm::mat4 & trans ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.8.3 Member Data Documentation

5.8.3.1 g_color_buffer_data

```
std::vector< GLfloat > PecaT::g_color_buffer_data [static]
```

5.8.3.2 g_real_vertex_buffer

```
std::vector< GLfloat > PecaT::g_real_vertex_buffer = {} [static]
```

5.8.3.3 g_vertex_buffer_data

```
std::vector< GLfloat > PecaT::g_vertex_buffer_data [static]
```

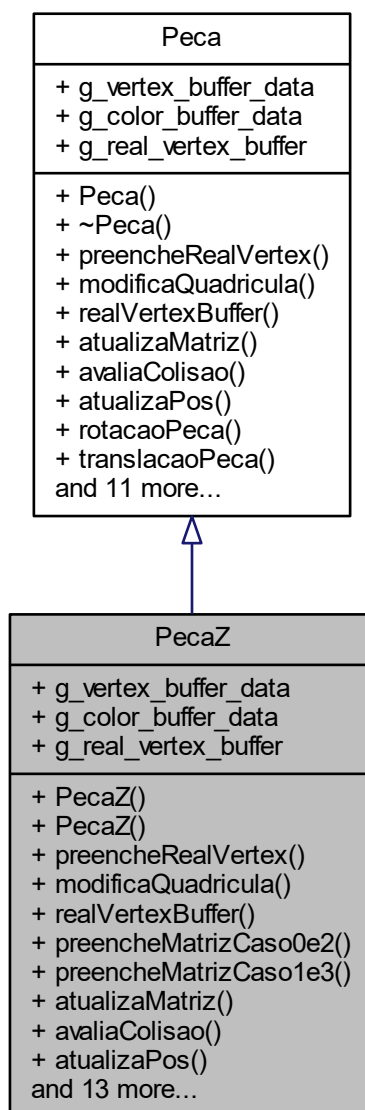
The documentation for this class was generated from the following files:

- headers/[PecaT.hpp](#)
- src/[PecaT.cpp](#)

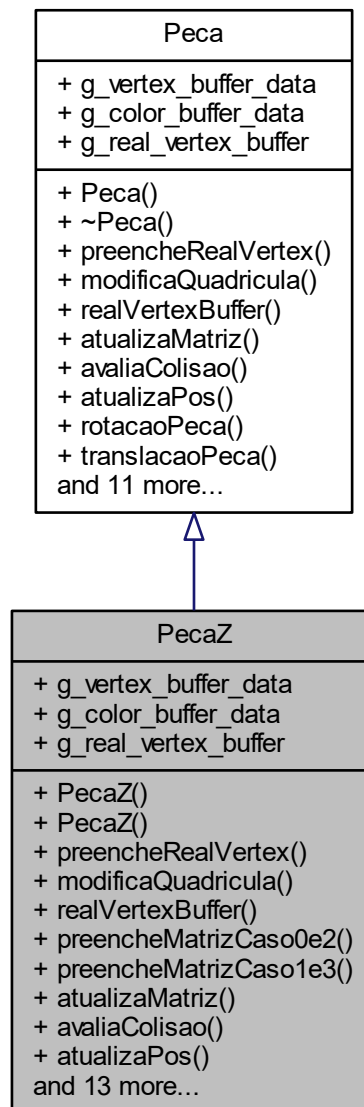
5.9 PecaZ Class Reference

```
#include <PecaZ.hpp>
```

Inheritance diagram for PecaZ:



Collaboration diagram for PecaZ:



Public Member Functions

- [PecaZ](#) ()
- [PecaZ](#) (int, int, int, int, int **)
- void [preencheRealVertex](#) (GLfloat, GLfloat)
- void [modificaQuadricula](#) (GLfloat, GLfloat)
- void [realVertexBuffer](#) ()
- bool [preencheMatrizCaso0e2](#) (int, int)
- bool [preencheMatrizCaso1e3](#) (int, int)
- bool [atualizaMatriz](#) ()
- bool [avaliaColisao](#) ()

- void [atualizaPos](#) ()
- void [rotacaoPeca](#) (glm::mat4 &rot)
- void [translacaoPeca](#) (glm::mat4 &trans)
- int ** [getGameGrid](#) ()
- int [getNumberRotate](#) ()
- int [getNumberTranslation](#) ()
- int [getNumberDown](#) ()
- int [getXPosD](#) ()
- int [getXPosE](#) ()
- void [incNumberRotate](#) ()
- void [incNumberTranslation](#) ()
- void [decNumberTranslation](#) ()
- void [incNumberDown](#) ()
- void [drawObject](#) ()

Static Public Attributes

- static std::vector< GLfloat > [g_vertex_buffer_data](#)
- static std::vector< GLfloat > [g_color_buffer_data](#)
- static std::vector< GLfloat > [g_real_vertex_buffer](#) = {}

5.9.1 Constructor & Destructor Documentation

5.9.1.1 PecaZ() [1/2]

```
PecaZ::PecaZ ( )
```

5.9.1.2 PecaZ() [2/2]

```
PecaZ::PecaZ (
    int xPosInicial,
    int yPosInicial,
    int iHeight,
    int iWidth,
    int ** gameGrid )
```

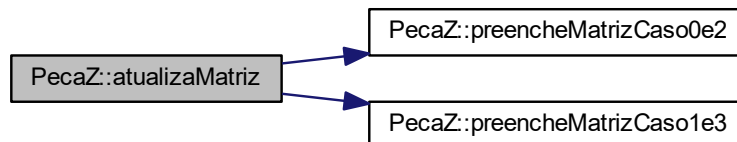
5.9.2 Member Function Documentation

5.9.2.1 atualizaMatriz()

```
bool PecaZ::atualizaMatriz ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.9.2.2 atualizaPos()

```
void PecaZ::atualizaPos ( ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:



5.9.2.3 avaliaColisao()

```
bool PecaZ::avaliaColisao ( ) [virtual]
```

Implements [Peca](#).

5.9.2.4 decNumberTranslation()

```
void PecaZ::decNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.9.2.5 drawObject()

```
void PecaZ::drawObject ( ) [virtual]
```

Implements [Peca](#).

5.9.2.6 getGameGrid()

```
int ** PecaZ::getGameGrid ( ) [virtual]
```

Implements [Peca](#).

5.9.2.7 getNumberDown()

```
int PecaZ::getNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.9.2.8 getNumberRotate()

```
int PecaZ::getNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.9.2.9 getNumberTranslation()

```
int PecaZ::getNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.9.2.10 getXPosD()

```
int PecaZ::getXPosD ( ) [virtual]
```

Implements [Peca](#).

5.9.2.11 getXPosE()

```
int PecaZ::getXPosE ( ) [virtual]
```

Implements [Peca](#).

5.9.2.12 incNumberDown()

```
void PecaZ::incNumberDown ( ) [virtual]
```

Implements [Peca](#).

5.9.2.13 incNumberRotate()

```
void PecaZ::incNumberRotate ( ) [virtual]
```

Implements [Peca](#).

5.9.2.14 incNumberTranslation()

```
void PecaZ::incNumberTranslation ( ) [virtual]
```

Implements [Peca](#).

5.9.2.15 modificaQuadricula()

```
void PecaZ::modificaQuadricula (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



Here is the caller graph for this function:



5.9.2.16 preencheMatrizCaso0e2()

```
bool PecaZ::preencheMatrizCaso0e2 (
    int x,
    int y )
```

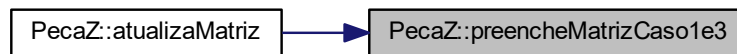
Here is the caller graph for this function:



5.9.2.17 preencheMatrizCaso1e3()

```
bool PecaZ::preencheMatrizCaso1e3 (
    int x,
    int y )
```

Here is the caller graph for this function:

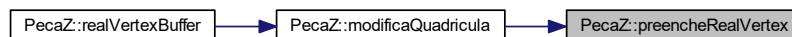


5.9.2.18 preencheRealVertex()

```
void PecaZ::preencheRealVertex (
    GLfloat x,
    GLfloat y ) [virtual]
```

Implements [Peca](#).

Here is the caller graph for this function:

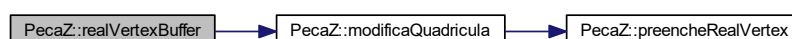


5.9.2.19 realVertexBuffer()

```
void PecaZ::realVertexBuffer ( ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.9.2.20 rotacaoPeca()

```
void PecaZ::rotacaoPeca (
    glm::mat4 & rot ) [virtual]
```

Implements [Peca](#).

5.9.2.21 translacaoPeca()

```
void PecaZ::translacaoPeca (
    glm::mat4 & trans ) [virtual]
```

Implements [Peca](#).

Here is the call graph for this function:



5.9.3 Member Data Documentation

5.9.3.1 g_color_buffer_data

```
std::vector< GLfloat > PecaZ::g_color_buffer_data [static]
```

5.9.3.2 g_real_vertex_buffer

```
std::vector< GLfloat > PecaZ::g_real_vertex_buffer = {} [static]
```

5.9.3.3 g_vertex_buffer_data

```
std::vector< GLfloat > PecaZ::g_vertex_buffer_data [static]
```

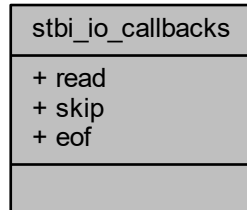
The documentation for this class was generated from the following files:

- headers/[PecaZ.hpp](#)
- src/[PecaZ.cpp](#)

5.10 stbi_io_callbacks Struct Reference

```
#include <stb_image.h>
```

Collaboration diagram for stbi_io_callbacks:



Public Attributes

- `int(* read)(void *user, char *data, int size)`
- `void(* skip)(void *user, int n)`
- `int(* eof)(void *user)`

5.10.1 Member Data Documentation

5.10.1.1 eof

```
int (* stbi_io_callbacks::eof) (void *user)
```

5.10.1.2 read

```
int (* stbi_io_callbacks::read) (void *user, char *data, int size)
```

5.10.1.3 skip

```
void (* stbi_io_callbacks::skip) (void *user, int n)
```

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

- `headers/stb_image.h`

Chapter 6

File Documentation

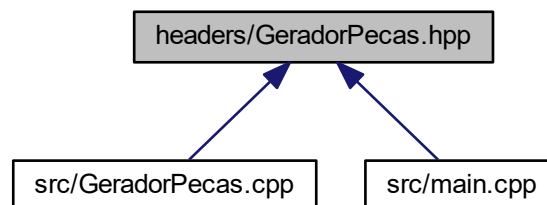
6.1 headers/GeradorPecas.hpp File Reference

```
#include "headers/PecaL.hpp"  
#include "headers/PecaJ.hpp"  
#include "headers/PecaS.hpp"  
#include "headers/PecaI.hpp"  
#include "headers/PecaZ.hpp"  
#include "headers/PecaO.hpp"  
#include "headers/PecaT.hpp"  
#include "headers/Peca.hpp"
```

Include dependency graph for GeradorPecas.hpp:



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



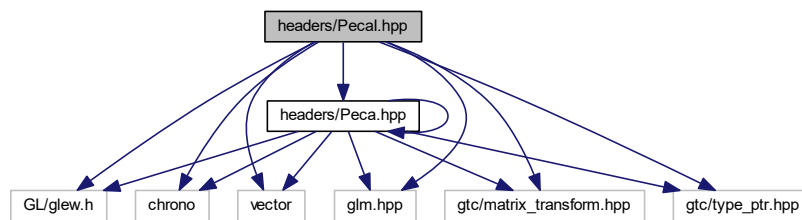
Classes

- class [GeradorPecas](#)

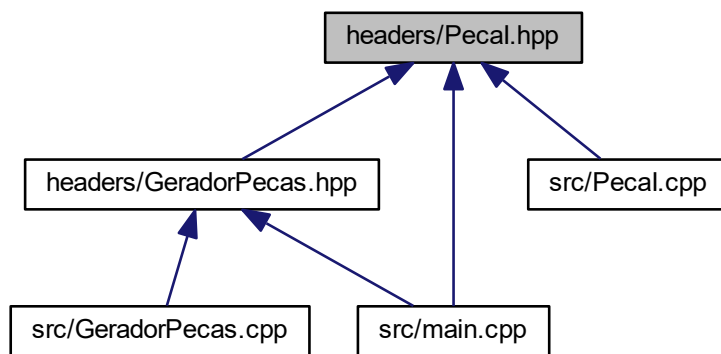
6.3 headers/Pecal.hpp File Reference

```
#include "headers/Peca.hpp"
#include <GL/glew.h>
#include <chrono>
#include <vector>
#include <glm.hpp>
#include <gtc/matrix_transform.hpp>
#include <gtc/type_ptr.hpp>
```

Include dependency graph for Pecal.hpp:



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



Classes

- class [Pecal](#)

Macros

- `#define` [GLEW_STATIC](#)

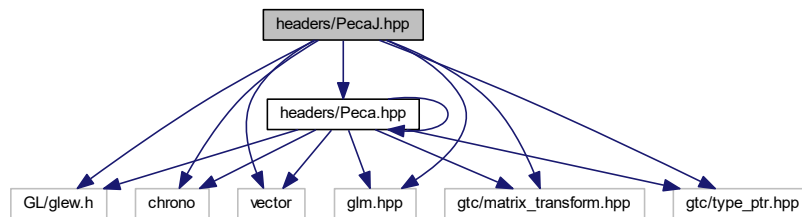
6.3.1 Macro Definition Documentation

6.3.1.1 GLEW_STATIC

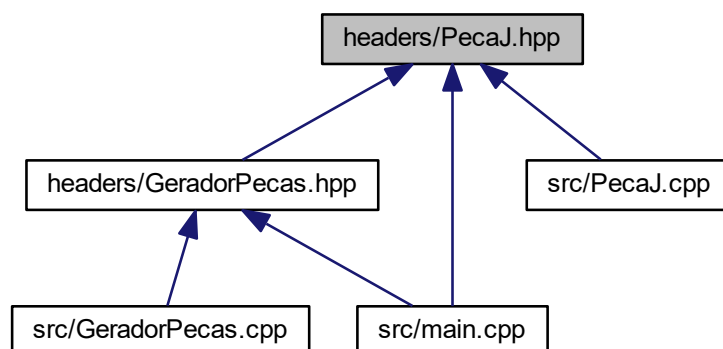
```
#define GLEW_STATIC
```

6.4 headers/PecaJ.hpp File Reference

```
#include "headers/Peca.hpp"
#include <GL/glew.h>
#include <chrono>
#include <vector>
#include <glm.hpp>
#include <gtc/matrix_transform.hpp>
#include <gtc/type_ptr.hpp>
Include dependency graph for PecaJ.hpp:
```



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



Classes

- class [PecaJ](#)

Macros

- `#define` [GLEW_STATIC](#)

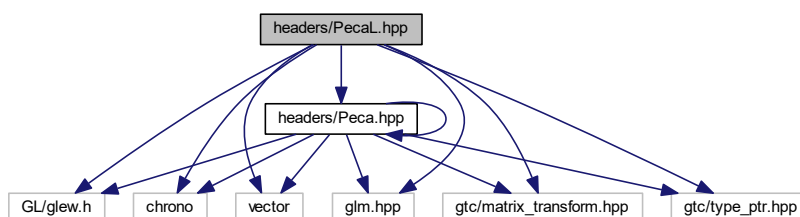
6.4.1 Macro Definition Documentation

6.4.1.1 GLEW_STATIC

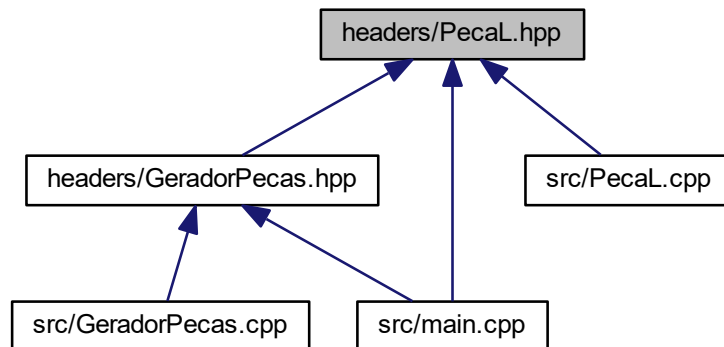
```
#define GLEW_STATIC
```

6.5 headers/PecaL.hpp File Reference

```
#include "headers/Peca.hpp"  
#include <GL/glew.h>  
#include <chrono>  
#include <vector>  
#include <glm.hpp>  
#include <gtc/matrix_transform.hpp>  
#include <gtc/type_ptr.hpp>  
Include dependency graph for PecaL.hpp:
```



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



Classes

- class [PecaL](#)

Macros

- `#define` [GLEW_STATIC](#)

6.5.1 Macro Definition Documentation

6.5.1.1 GLEW_STATIC

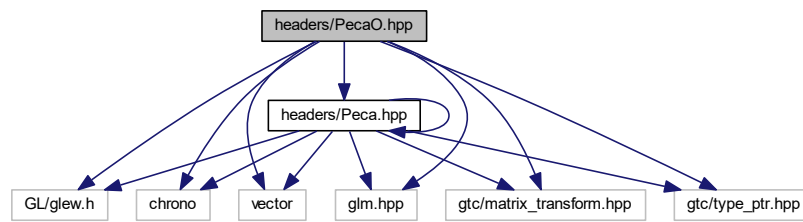
```
#define GLEW_STATIC
```

6.6 headers/PecaO.hpp File Reference

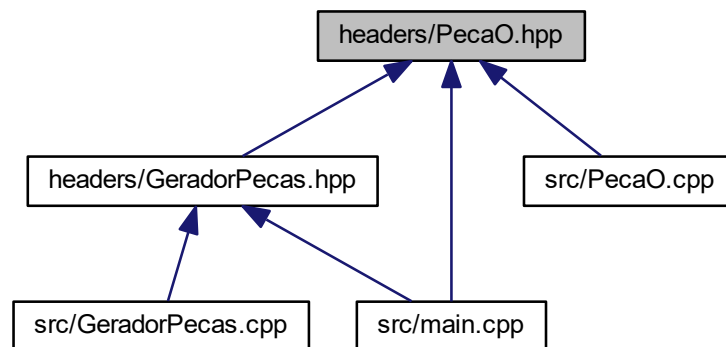
```
#include "headers/Peca.hpp"
#include <GL/glew.h>
#include <chrono>
#include <vector>
#include <glm.hpp>
#include <gtc/matrix_transform.hpp>
```

```
#include <gtc/type_ptr.hpp>
```

Include dependency graph for PecaO.hpp:



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



Classes

- class [PecaO](#)

Macros

- `#define` [GLEW_STATIC](#)

6.6.1 Macro Definition Documentation

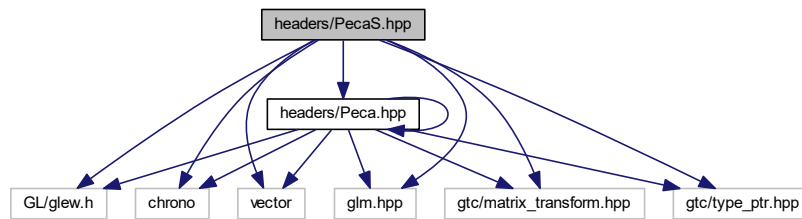
6.6.1.1 GLEW_STATIC

```
#define GLEW_STATIC
```

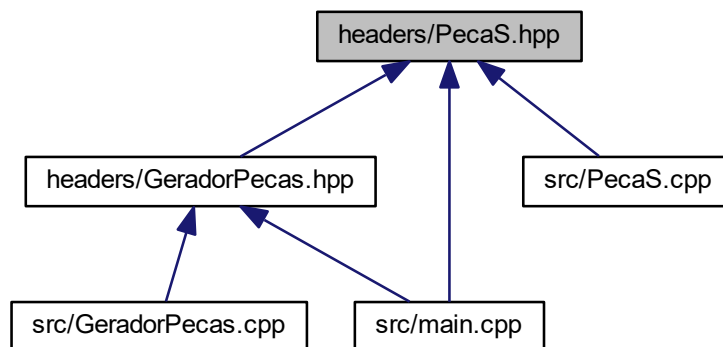
6.7 headers/PecaS.hpp File Reference

```
#include "headers/Peca.hpp"
#include <GL/glew.h>
#include <chrono>
#include <vector>
#include <glm.hpp>
#include <gtc/matrix_transform.hpp>
#include <gtc/type_ptr.hpp>
```

Include dependency graph for PecaS.hpp:



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



Classes

- class [PecaS](#)

Macros

- `#define` [GLEW_STATIC](#)

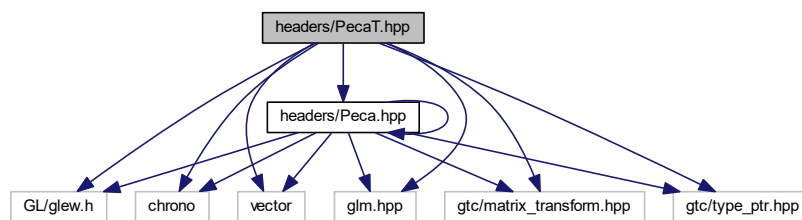
6.7.1 Macro Definition Documentation

6.7.1.1 GLEW_STATIC

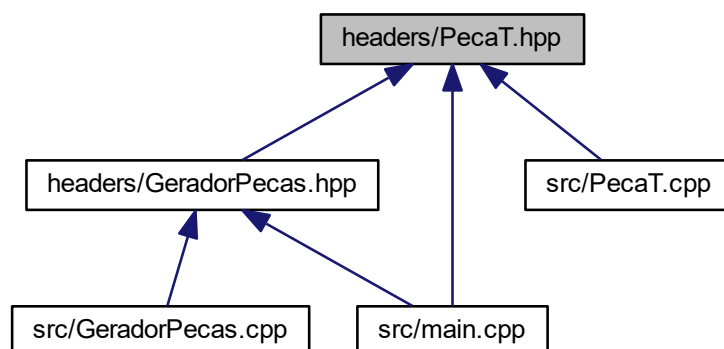
```
#define GLEW_STATIC
```

6.8 headers/PecaT.hpp File Reference

```
#include "headers/Peca.hpp"
#include <GL/glew.h>
#include <chrono>
#include <vector>
#include <glm.hpp>
#include <gtc/matrix_transform.hpp>
#include <gtc/type_ptr.hpp>
Include dependency graph for PecaT.hpp:
```



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



Classes

- class [PecaT](#)

Macros

- `#define` [GLEW_STATIC](#)

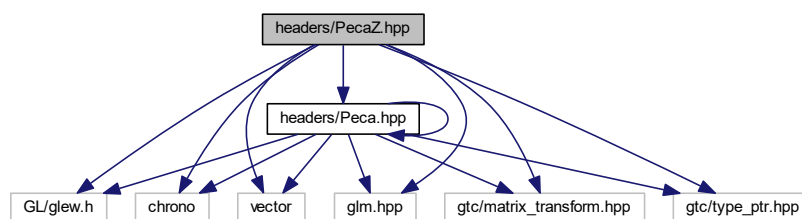
6.8.1 Macro Definition Documentation

6.8.1.1 GLEW_STATIC

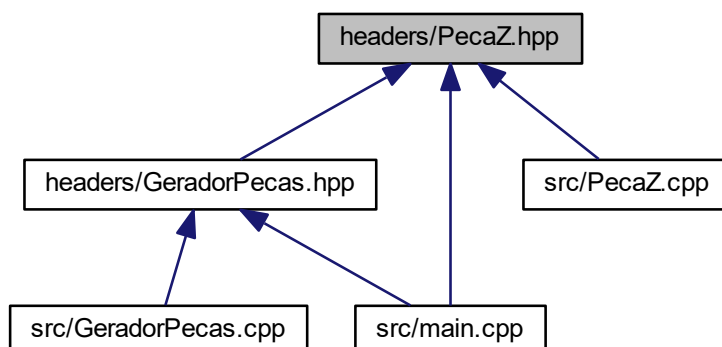
```
#define GLEW_STATIC
```

6.9 headers/PecaZ.hpp File Reference

```
#include "headers/Peca.hpp"  
#include <GL/glew.h>  
#include <chrono>  
#include <vector>  
#include <glm.hpp>  
#include <gtc/matrix_transform.hpp>  
#include <gtc/type_ptr.hpp>  
Include dependency graph for PecaZ.hpp:
```



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



Classes

- class [PecaZ](#)

Macros

- #define [GLEW_STATIC](#)

6.9.1 Macro Definition Documentation

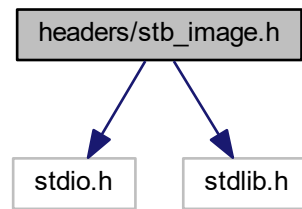
6.9.1.1 GLEW_STATIC

```
#define GLEW_STATIC
```

6.10 headers/stb_image.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
```

Include dependency graph for stb_image.h:



Classes

- struct [stbi_io_callbacks](#)

Macros

- `#define STBI_VERSION 1`
- `#define STBIDEF extern`

Typedefs

- typedef unsigned char [stbi_uc](#)
- typedef unsigned short [stbi_us](#)

Enumerations

- enum {
[STBI_default](#) = 0, [STBI_grey](#) = 1, [STBI_grey_alpha](#) = 2, [STBI_rgb](#) = 3,
[STBI_rgb_alpha](#) = 4 }

Functions

- `STBIDEF stbi_uc * stbi_load_from_memory (stbi_uc const *buffer, int len, int *x, int *y, int *channels_in_file, int desired_channels)`
- `STBIDEF stbi_uc * stbi_load_from_callbacks (stbi_io_callbacks const *clbk, void *user, int *x, int *y, int *channels_in_file, int desired_channels)`
- `STBIDEF stbi_uc * stbi_load (char const *filename, int *x, int *y, int *channels_in_file, int desired_channels)`
- `STBIDEF stbi_uc * stbi_load_from_file (FILE *f, int *x, int *y, int *channels_in_file, int desired_channels)`
- `STBIDEF stbi_uc * stbi_load_gif_from_memory (stbi_uc const *buffer, int len, int **delays, int *x, int *y, int *z, int *comp, int req_comp)`
- `STBIDEF stbi_us * stbi_load_16_from_memory (stbi_uc const *buffer, int len, int *x, int *y, int *channels_in_file, int desired_channels)`
- `STBIDEF stbi_us * stbi_load_16_from_callbacks (stbi_io_callbacks const *clbk, void *user, int *x, int *y, int *channels_in_file, int desired_channels)`

- [STBIDEF stbi_us * stbi_load_16](#) (char const *filename, int *x, int *y, int *channels_in_file, int desired_channels)
- [STBIDEF stbi_us * stbi_load_from_file_16](#) (FILE *f, int *x, int *y, int *channels_in_file, int desired_channels)
- [STBIDEF float * stbi_loadf_from_memory](#) (stbi_uc const *buffer, int len, int *x, int *y, int *channels_in_file, int desired_channels)
- [STBIDEF float * stbi_loadf_from_callbacks](#) (stbi_io_callbacks const *clbk, void *user, int *x, int *y, int *channels_in_file, int desired_channels)
- [STBIDEF float * stbi_loadf](#) (char const *filename, int *x, int *y, int *channels_in_file, int desired_channels)
- [STBIDEF float * stbi_loadf_from_file](#) (FILE *f, int *x, int *y, int *channels_in_file, int desired_channels)
- [STBIDEF void stbi_hdr_to_ldr_gamma](#) (float gamma)
- [STBIDEF void stbi_hdr_to_ldr_scale](#) (float scale)
- [STBIDEF void stbi_ldr_to_hdr_gamma](#) (float gamma)
- [STBIDEF void stbi_ldr_to_hdr_scale](#) (float scale)
- [STBIDEF int stbi_is_hdr_from_callbacks](#) (stbi_io_callbacks const *clbk, void *user)
- [STBIDEF int stbi_is_hdr_from_memory](#) (stbi_uc const *buffer, int len)
- [STBIDEF int stbi_is_hdr](#) (char const *filename)
- [STBIDEF int stbi_is_hdr_from_file](#) (FILE *f)
- [STBIDEF const char * stbi_failure_reason](#) (void)
- [STBIDEF void stbi_image_free](#) (void *retval_from_stbi_load)
- [STBIDEF int stbi_info_from_memory](#) (stbi_uc const *buffer, int len, int *x, int *y, int *comp)
- [STBIDEF int stbi_info_from_callbacks](#) (stbi_io_callbacks const *clbk, void *user, int *x, int *y, int *comp)
- [STBIDEF int stbi_is_16_bit_from_memory](#) (stbi_uc const *buffer, int len)
- [STBIDEF int stbi_is_16_bit_from_callbacks](#) (stbi_io_callbacks const *clbk, void *user)
- [STBIDEF int stbi_info](#) (char const *filename, int *x, int *y, int *comp)
- [STBIDEF int stbi_info_from_file](#) (FILE *f, int *x, int *y, int *comp)
- [STBIDEF int stbi_is_16_bit](#) (char const *filename)
- [STBIDEF int stbi_is_16_bit_from_file](#) (FILE *f)
- [STBIDEF void stbi_set_unpremultiply_on_load](#) (int flag_true_if_should_unpremultiply)
- [STBIDEF void stbi_convert_iphone_png_to_rgb](#) (int flag_true_if_should_convert)
- [STBIDEF void stbi_set_flip_vertically_on_load](#) (int flag_true_if_should_flip)
- [STBIDEF char * stbi_zlib_decode_malloc_guesssize](#) (const char *buffer, int len, int initial_size, int *outlen)
- [STBIDEF char * stbi_zlib_decode_malloc_guesssize_headerflag](#) (const char *buffer, int len, int initial_size, int *outlen, int parse_header)
- [STBIDEF char * stbi_zlib_decode_malloc](#) (const char *buffer, int len, int *outlen)
- [STBIDEF int stbi_zlib_decode_buffer](#) (char *obuffer, int olen, const char *ibuffer, int ilen)
- [STBIDEF char * stbi_zlib_decode_noheader_malloc](#) (const char *buffer, int len, int *outlen)
- [STBIDEF int stbi_zlib_decode_noheader_buffer](#) (char *obuffer, int olen, const char *ibuffer, int ilen)

6.10.1 Macro Definition Documentation

6.10.1.1 STBI_VERSION

```
#define STBI_VERSION 1
```

6.10.1.2 STBIDEF

```
#define STBIDEF extern
```

6.10.2 Typedef Documentation

6.10.2.1 stbi_uc

```
typedef unsigned char stbi_uc
```

6.10.2.2 stbi_us

```
typedef unsigned short stbi_us
```

6.10.3 Enumeration Type Documentation

6.10.3.1 anonymous enum

```
anonymous enum
```

6.10.4 Function Documentation

6.10.4.1 stbi_convert_iphone_png_to_rgb()

```
STBIDEF void stbi_convert_iphone_png_to_rgb (
    int flag_true_if_should_convert )
```

6.10.4.2 stbi_failure_reason()

```
STBIDEF const char* stbi_failure_reason (
    void )
```

6.10.4.3 stbi_hdr_to_ldr_gamma()

```
STBIDEF void stbi_hdr_to_ldr_gamma (
    float gamma )
```

6.10.4.4 stbi_hdr_to_ldr_scale()

```
STBIDEF void stbi_hdr_to_ldr_scale (
    float scale )
```

6.10.4.5 stbi_image_free()

```
STBIDEF void stbi_image_free (
    void * retval_from_stbi_load )
```

6.10.4.6 stbi_info()

```
STBIDEF int stbi_info (
    char const * filename,
    int * x,
    int * y,
    int * comp )
```

6.10.4.7 stbi_info_from_callbacks()

```
STBIDEF int stbi_info_from_callbacks (
    stbi_io_callbacks const * clbk,
    void * user,
    int * x,
    int * y,
    int * comp )
```

6.10.4.8 stbi_info_from_file()

```
STBIDEF int stbi_info_from_file (
    FILE * f,
    int * x,
    int * y,
    int * comp )
```

6.10.4.9 stbi_info_from_memory()

```
STBIDEF int stbi_info_from_memory (
    stbi_uc const * buffer,
    int len,
    int * x,
    int * y,
    int * comp )
```

6.10.4.10 stbi_is_16_bit()

```
STBIDEF int stbi_is_16_bit (
    char const * filename )
```

6.10.4.11 stbi_is_16_bit_from_callbacks()

```
STBIDEF int stbi_is_16_bit_from_callbacks (
    stbi_io_callbacks const * clbk,
    void * user )
```

6.10.4.12 stbi_is_16_bit_from_file()

```
STBIDEF int stbi_is_16_bit_from_file (
    FILE * f )
```

6.10.4.13 stbi_is_16_bit_from_memory()

```
STBIDEF int stbi_is_16_bit_from_memory (
    stbi_uc const * buffer,
    int len )
```

6.10.4.14 stbi_is_hdr()

```
STBIDEF int stbi_is_hdr (
    char const * filename )
```

6.10.4.15 stbi_is_hdr_from_callbacks()

```
STBIDEF int stbi_is_hdr_from_callbacks (
    stbi_io_callbacks const * clbk,
    void * user )
```

6.10.4.16 stbi_is_hdr_from_file()

```
STBIDEF int stbi_is_hdr_from_file (
    FILE * f )
```

6.10.4.17 stbi_is_hdr_from_memory()

```
STBIDEF int stbi_is_hdr_from_memory (
    stbi_uc const * buffer,
    int len )
```

6.10.4.18 stbi_ldr_to_hdr_gamma()

```
STBIDEF void stbi_ldr_to_hdr_gamma (
    float gamma )
```

6.10.4.19 stbi_ldr_to_hdr_scale()

```
STBIDEF void stbi_ldr_to_hdr_scale (
    float scale )
```

6.10.4.20 stbi_load()

```
STBIDEF stbi_uc* stbi_load (
    char const * filename,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.21 stbi_load_16()

```
STBIDEF stbi_us* stbi_load_16 (
    char const * filename,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.22 stbi_load_16_from_callbacks()

```
STBIDEF stbi_us* stbi_load_16_from_callbacks (
    stbi_io_callbacks const * clbk,
    void * user,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.23 stbi_load_16_from_memory()

```
STBIDEF stbi_us* stbi_load_16_from_memory (
    stbi_uc const * buffer,
    int len,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.24 stbi_load_from_callbacks()

```
STBIDEF stbi_uc* stbi_load_from_callbacks (
    stbi_io_callbacks const * clbk,
    void * user,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.25 stbi_load_from_file()

```
STBIDEF stbi_uc* stbi_load_from_file (
    FILE * f,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.26 stbi_load_from_file_16()

```
STBIDEF stbi_us* stbi_load_from_file_16 (
    FILE * f,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.27 stbi_load_from_memory()

```
STBIDEF stbi_uc* stbi_load_from_memory (
    stbi_uc const * buffer,
    int len,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.28 stbi_load_gif_from_memory()

```
STBIDEF stbi_uc* stbi_load_gif_from_memory (
    stbi_uc const * buffer,
    int len,
    int ** delays,
    int * x,
    int * y,
    int * z,
    int * comp,
    int req_comp )
```

6.10.4.29 stbi_loadf()

```
STBIDEF float* stbi_loadf (
    char const * filename,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.30 stbi_loadf_from_callbacks()

```
STBIDEF float* stbi_loadf_from_callbacks (
    stbi_io_callbacks const * clbk,
    void * user,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.31 stbi_loadf_from_file()

```
STBIDEF float* stbi_loadf_from_file (
    FILE * f,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.32 stbi_loadf_from_memory()

```
STBIDEF float* stbi_loadf_from_memory (
    stbi_uc const * buffer,
    int len,
    int * x,
    int * y,
    int * channels_in_file,
    int desired_channels )
```

6.10.4.33 stbi_set_flip_vertically_on_load()

```
STBIDEF void stbi_set_flip_vertically_on_load (
    int flag_true_if_should_flip )
```


6.10.4.34 stbi_set_unpremultiply_on_load()

```
STBIDEF void stbi_set_unpremultiply_on_load (
    int flag_true_if_should_unpremultiply )
```

6.10.4.35 stbi_zlib_decode_buffer()

```
STBIDEF int stbi_zlib_decode_buffer (
    char * obuffer,
    int olen,
    const char * ibuffer,
    int ilen )
```

6.10.4.36 stbi_zlib_decode_malloc()

```
STBIDEF char* stbi_zlib_decode_malloc (
    const char * buffer,
    int len,
    int * outlen )
```

6.10.4.37 stbi_zlib_decode_malloc_guesssize()

```
STBIDEF char* stbi_zlib_decode_malloc_guesssize (
    const char * buffer,
    int len,
    int initial_size,
    int * outlen )
```

6.10.4.38 stbi_zlib_decode_malloc_guesssize_headerflag()

```
STBIDEF char* stbi_zlib_decode_malloc_guesssize_headerflag (
    const char * buffer,
    int len,
    int initial_size,
    int * outlen,
    int parse_header )
```



```
#include <glm.hpp>
#include <gtc/matrix_transform.hpp>
#include <gtc/type_ptr.hpp>
#include <common/shader.cpp>
Include dependency graph for main.cpp:
```



Macros

- `#define GLEW_STATIC`

Functions

- void `inicializaMatrizZero` ()
- void `randNum` ()
- `Peca` * `returnPeca` (`GeradorPecas` &`geraPecas`)
- `std::vector< GLfloat >` `vertexBufferPiece` (`Peca` &`plPeca`)
- `std::vector< GLfloat >` `colorBufferPiece` (`Peca` &`plPeca`)
- `std::vector< GLfloat >` * `realVertexBufferPiece` (`Peca` &`plPeca`)
- void `transferDataToGPUMemoryOfPiece` (`Peca` &`plPeca`)
- void `cleanupDataFromGPU` ()
- void `eliminaLinha` (int `iLinha`)
- void `atualizaCampoJogo` (int `iLinha`)
- `std::vector< int >` `avaliaEliminacaoLinhas` (int **`gameGrid`)
- bool `evaluatePieceCollision` (`Peca` &`plPeca`)
- bool `drawObject` (`Peca` &`plPeca`)
- void `drawPreviousObjects` (`Peca` &`pPeca`)
- void `registerUserInputs` (`Peca` &`plPeca`)
- int `main` (void)

Variables

- `GLFWwindow` * `window`
- `GLuint` `VertexArrayID`
- `GLuint` `vertexbuffer`
- `GLuint` `vertexbufferTot`
- `GLuint` `colorbuffer`
- `GLuint` `colorbufferTot`
- `GLuint` `programID`
- int const `iWidth` = 11
- int const `iHeight` = 16
- `GLfloat` `WIDTH` = 11.f
- `GLfloat` `HEIGHT` = 16.f
- `GLint` `WindowHeight` = 600
- `GLint` `WindowWidth` = `WIDTH` / `HEIGHT` * `WindowHeight`
- char `vertexShader` [] = "shaders/vertexShader.vertexshader"
- char `fragmentShader` [] = "shaders/fragmentShader.fragmentshader"

- char `WindowTitle` [] = "Tetris"
- `std::chrono::time_point< std::chrono::steady_clock > t_start`
- int ** `gameGrid`
- int `xPosInicial` = (int)`WIDTH` / 2
- int `yPosInicial` = `HEIGHT`
- `GeradorPecas` `geraPecas`
- int `iRandPiece`
- `std::vector< GLfloat > g_vertex_buffer_data` = {}
- `std::vector< GLfloat > g_color_buffer_data` = {}
- `std::vector< GLfloat > g_vertex_buffer_dataTot` = {}
- `std::vector< GLfloat > g_color_buffer_dataTot` = {}
- int `newSize`

6.13.1 Macro Definition Documentation

6.13.1.1 GLEW_STATIC

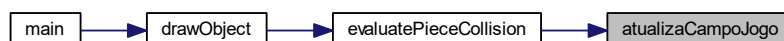
```
#define GLEW_STATIC
```

6.13.2 Function Documentation

6.13.2.1 atualizaCampoJogo()

```
void atualizaCampoJogo (
    int iLinha )
```

Here is the caller graph for this function:



6.13.2.2 avaliaEliminacaoLinhas()

```
std::vector<int> avaliaEliminacaoLinhas (  
    int ** gameGrid )
```

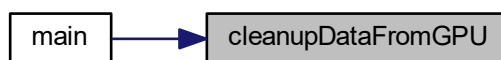
Here is the caller graph for this function:



6.13.2.3 cleanupDataFromGPU()

```
void cleanupDataFromGPU ( )
```

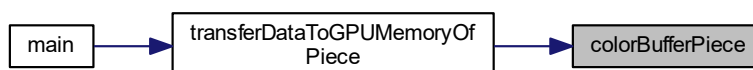
Here is the caller graph for this function:



6.13.2.4 colorBufferPiece()

```
std::vector<GLfloat> colorBufferPiece (  
    Peca & p1Peca )
```

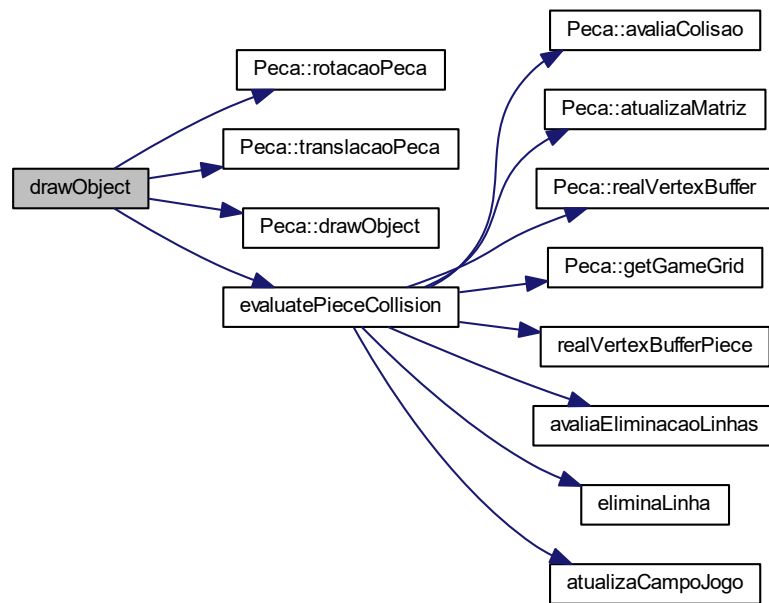
Here is the caller graph for this function:



6.13.2.5 drawObject()

```
bool drawObject (
    Peca & p1Peca )
```

Here is the call graph for this function:



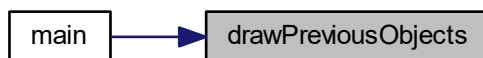
Here is the caller graph for this function:



6.13.2.6 drawPreviousObjects()

```
void drawPreviousObjects (
    Peca & pPeca )
```

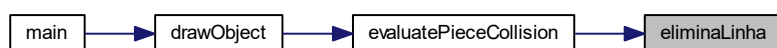
Here is the caller graph for this function:



6.13.2.7 eliminaLinha()

```
void eliminaLinha (  
    int iLinha )
```

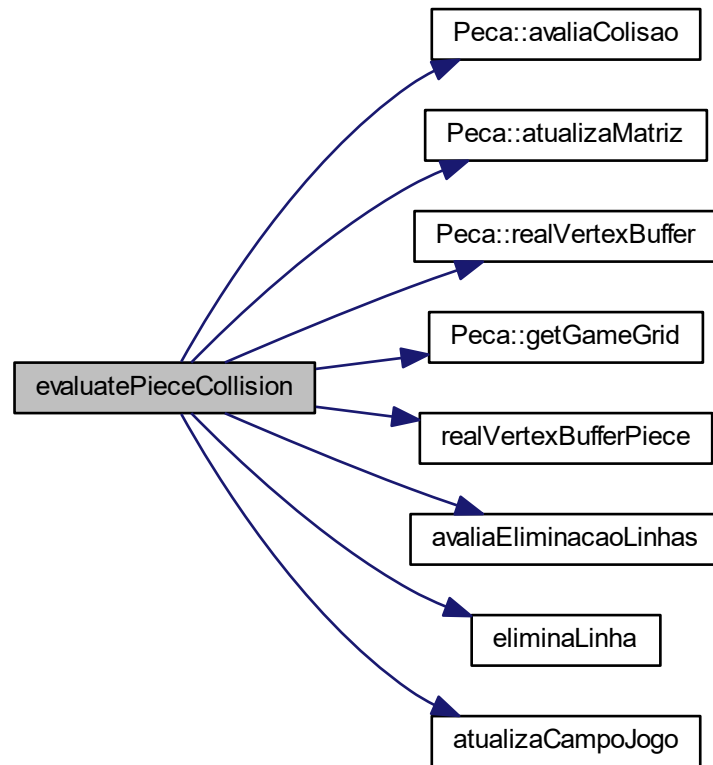
Here is the caller graph for this function:



6.13.2.8 evaluatePieceCollision()

```
bool evaluatePieceCollision (  
    Peca & p1Peca )
```

Here is the call graph for this function:



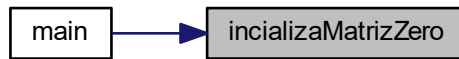
Here is the caller graph for this function:



6.13.2.9 inicializaMatrizZero()

```
void inicializaMatrizZero ( )
```

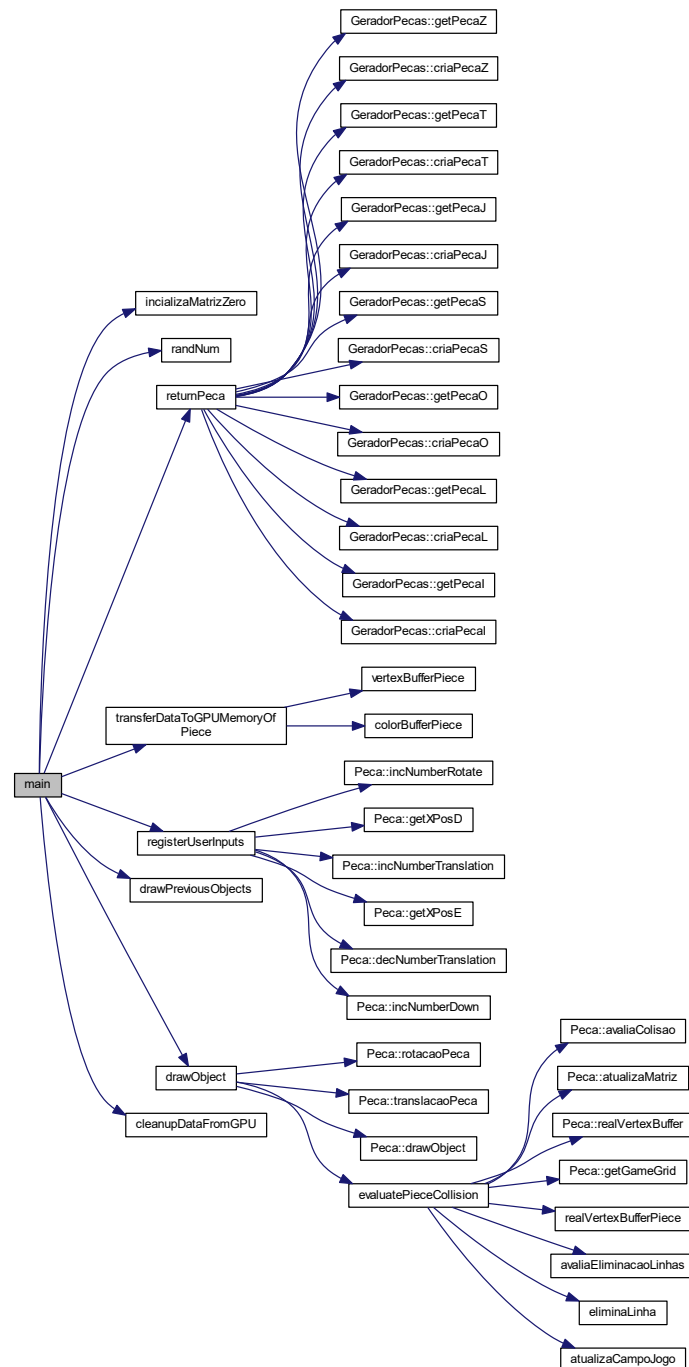

Here is the caller graph for this function:



6.13.2.10 main()

```
int main (  
    void )
```

Here is the call graph for this function:



6.13.2.11 randNum()

```
void randNum ( )
```

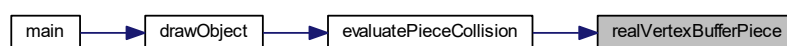
Here is the caller graph for this function:



6.13.2.12 `realVertexBufferPiece()`

```
std::vector<GLfloat>* realVertexBufferPiece (  
    Peca & pIPeca )
```

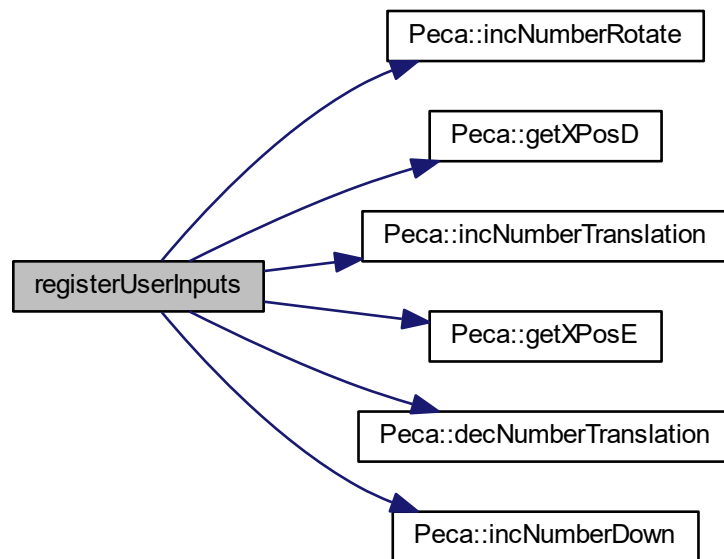
Here is the caller graph for this function:



6.13.2.13 `registerUserInputs()`

```
void registerUserInputs (  
    Peca & pIPeca )
```

Here is the call graph for this function:



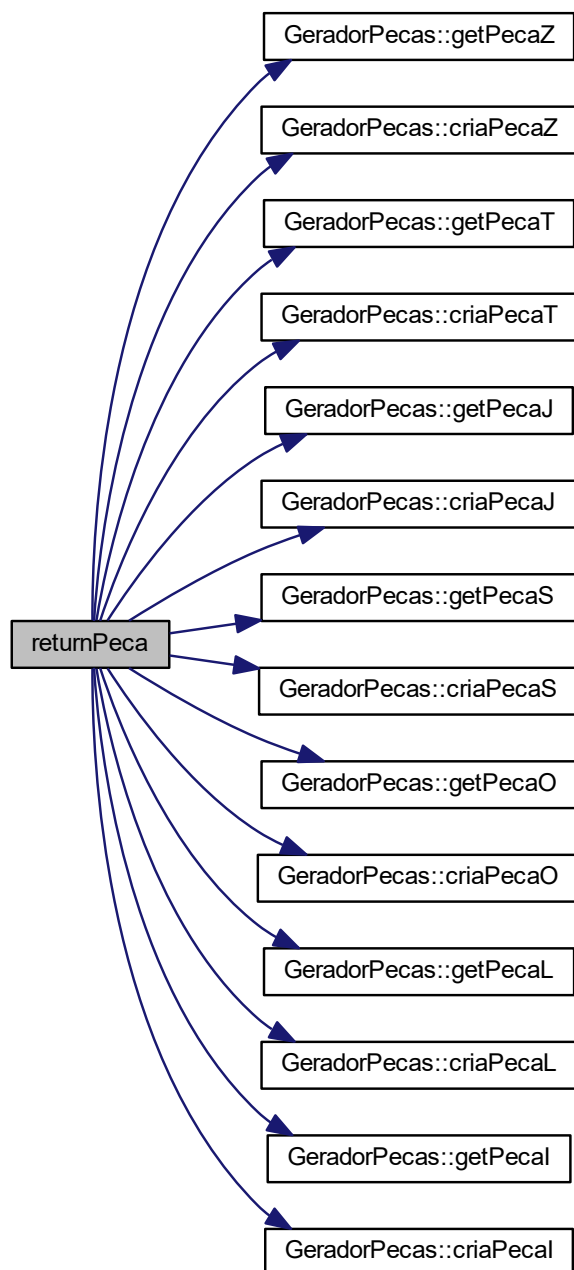
Here is the caller graph for this function:



6.13.2.14 returnPeca()

```
Peca* returnPeca (
    GeradorPecas & geraPecas )
```

Here is the call graph for this function:



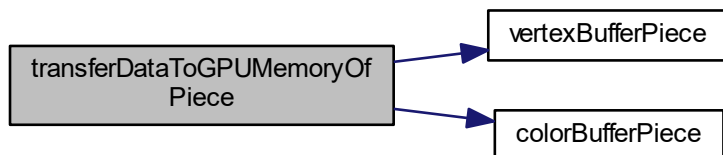
Here is the caller graph for this function:



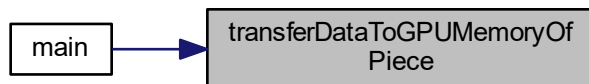
6.13.2.15 transferDataToGPUMemoryOfPiece()

```
void transferDataToGPUMemoryOfPiece (  
    Peca & plPeca )
```

Here is the call graph for this function:



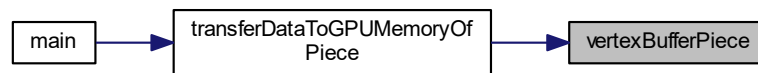
Here is the caller graph for this function:



6.13.2.16 vertexBufferPiece()

```
std::vector<GLfloat> vertexBufferPiece (  
    Peca & pIPeca )
```

Here is the caller graph for this function:



6.13.3 Variable Documentation

6.13.3.1 colorbuffer

```
GLuint colorbuffer
```

6.13.3.2 colorbufferTot

```
GLuint colorbufferTot
```

6.13.3.3 fragmentShader

```
char fragmentShader[] = "shaders/fragmentShader.fragmentshader"
```

6.13.3.4 g_color_buffer_data

```
std::vector<GLfloat> g_color_buffer_data = {}
```

6.13.3.5 g_color_buffer_dataTot

```
std::vector<GLfloat> g_color_buffer_dataTot = {}
```

6.13.3.6 g_vertex_buffer_data

```
std::vector<GLfloat> g_vertex_buffer_data = {}
```

6.13.3.7 g_vertex_buffer_dataTot

```
std::vector<GLfloat> g_vertex_buffer_dataTot = {}
```

6.13.3.8 gameGrid

```
int** gameGrid
```

6.13.3.9 geraPecas

```
GeradorPecas geraPecas
```

6.13.3.10 HEIGHT

```
GLfloat HEIGHT = 16.f
```

6.13.3.11 iHeight

```
int const iHeight = 16
```

6.13.3.12 iRandPiece

```
int iRandPiece
```


6.13.3.13 iWidth

```
int const iWidth = 11
```

6.13.3.14 newSize

```
int newSize
```

6.13.3.15 programID

```
GLuint programID
```

6.13.3.16 t_start

```
std::chrono::time_point<std::chrono::steady_clock> t_start
```

6.13.3.17 VertexArrayID

```
GLuint VertexArrayID
```

6.13.3.18 vertexbuffer

```
GLuint vertexbuffer
```

6.13.3.19 vertexbufferTot

```
GLuint vertexbufferTot
```

6.13.3.20 vertexShader

```
char vertexShader[] = "shaders/vertexShader.vertexshader"
```

6.13.3.21 WIDTH

```
GLfloat WIDTH = 11.f
```

6.13.3.22 window

```
GLFWwindow* window
```

6.13.3.23 WindowHeight

```
GLint WindowHeight = 600
```

6.13.3.24 WindowTitle

```
char WindowTitle[] = "Tetris"
```

6.13.3.25 WindowWidth

```
GLint WindowWidth = WIDTH / HEIGHT * WindowHeight
```

6.13.3.26 xPosInicial

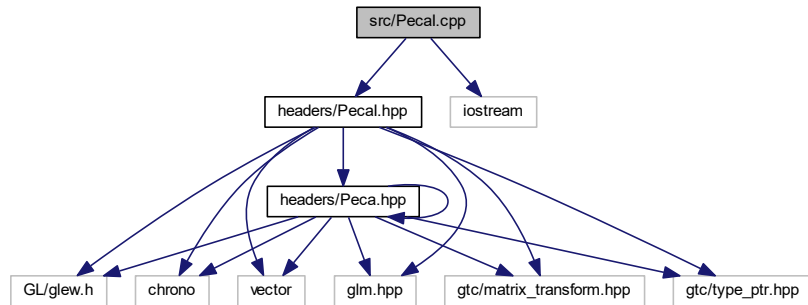
```
int xPosInicial = (int)WIDTH / 2
```

6.13.3.27 yPosInicial

```
int yPosInicial = HEIGHT
```

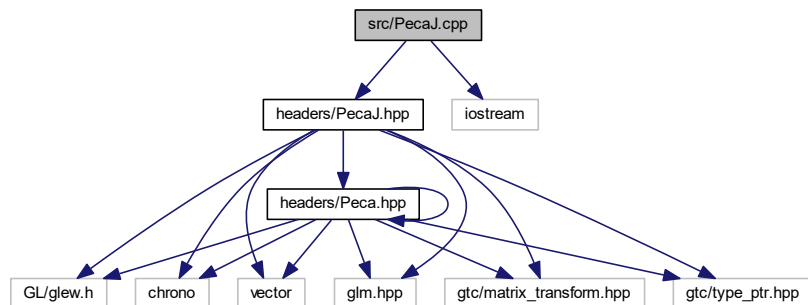
6.14 src/Pecal.cpp File Reference

```
#include "headers/PecaI.hpp"
#include <iostream>
Include dependency graph for Pecal.cpp:
```



6.15 src/PecaJ.cpp File Reference

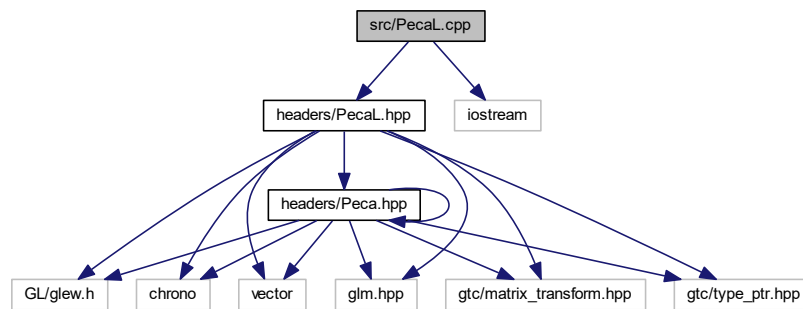
```
#include "headers/PecaJ.hpp"
#include <iostream>
Include dependency graph for PecaJ.cpp:
```



6.16 src/PecaL.cpp File Reference

```
#include "headers/PecaL.hpp"
#include <iostream>
```

Include dependency graph for PecaL.cpp:

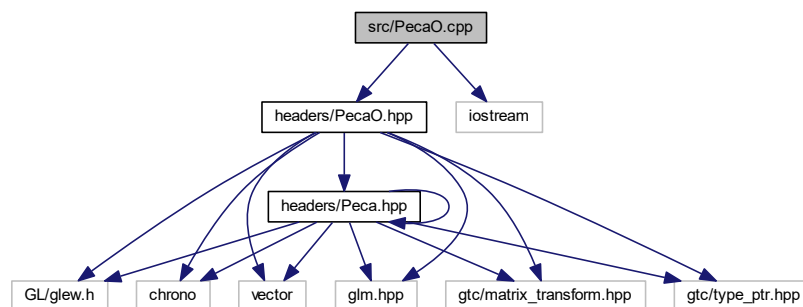


6.17 src/PecaO.cpp File Reference

```
#include "headers/PecaO.hpp"
```

```
#include <iostream>
```

Include dependency graph for PecaO.cpp:

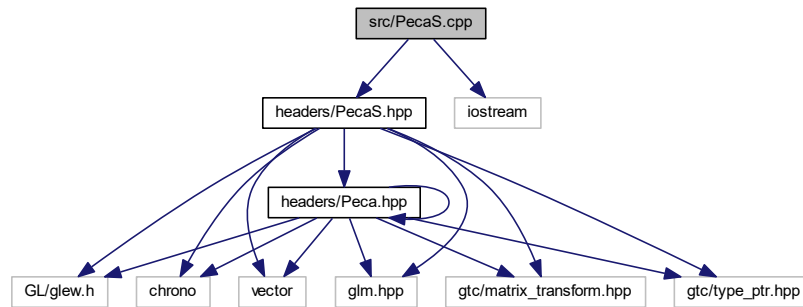


6.18 src/PecaS.cpp File Reference

```
#include "headers/PecaS.hpp"
```

```
#include <iostream>
```

Include dependency graph for PecaS.cpp:



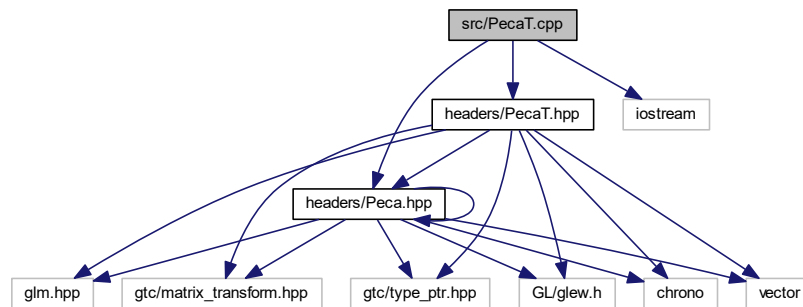
6.19 src/PecaT.cpp File Reference

```

#include "headers/PecaT.hpp"
#include "headers/Peca.hpp"
#include <iostream>

```

Include dependency graph for PecaT.cpp:



6.20 src/PecaZ.cpp File Reference

```

#include "headers/PecaZ.hpp"
#include "headers/Peca.hpp"
#include <iostream>

```

Include dependency graph for PecaZ.cpp:

