

My Project

Generated by Doxygen 1.9.8

1 Hierarchical Index	1
1.1 Class Hierarchy	1
2 Class Index	3
2.1 Class List	3
3 File Index	5
3.1 File List	5
4 Class Documentation	7
4.1 Model.Individuals.Tiles.BuildingTile Class Reference	7
4.1.1 Detailed Description	8
4.1.2 Member Function Documentation	8
4.1.2.1 getValue()	8
4.1.2.2 makeCopy()	8
4.1.2.3 toString()	8
4.2 Model.CityParameters Class Reference	8
4.2.1 Detailed Description	9
4.3 Views.GUI.CityParametersView Class Reference	9
4.3.1 Detailed Description	10
4.3.2 Constructor & Destructor Documentation	10
4.3.2.1 CityParametersView()	10
4.4 Model.Individuals.CityTileset Class Reference	10
4.4.1 Detailed Description	11
4.4.2 Member Function Documentation	12
4.4.2.1 toString()	12
4.5 Model.Individuals.CityTilesetPopulation Class Reference	12
4.5.1 Detailed Description	13
4.6 Views.GUI.CityView Class Reference	13
4.6.1 Detailed Description	13
4.7 Model.Inicializer.CloseToBuildingsParkInicializer Class Reference	13
4.7.1 Detailed Description	14
4.8 Model.operators.crossover.CrossoverController Class Reference	14
4.8.1 Detailed Description	14
4.9 Model.operators.crossover.CrossoverOperator< T extends Individual > Class Template Reference	14
4.10 Model.Individuals.FixedSizePopulation< T extends Individual > Class Template Reference	15
4.11 Model.operators.crossover.GeometricalCrossover Class Reference	15
4.11.1 Detailed Description	16
4.12 Model.Individuals.Individual Class Reference	16
4.13 Model.Inicializer.InicializerController Class Reference	16
4.13.1 Detailed Description	17
4.14 Model.operators.selection.KWayTournamentSelection Class Reference	17
4.14.1 Detailed Description	17

4.15 Views.GUI.MainWindow Class Reference	17
4.15.1 Detailed Description	18
4.15.2 Member Function Documentation	18
4.15.2.1 getAppName()	18
4.15.2.2 showView()	18
4.15.2.3 updateView()	18
4.16 Model.ModelParameters Class Reference	18
4.16.1 Detailed Description	19
4.17 Views.GUI.ModelParametersVlew Class Reference	19
4.17.1 Detailed Description	19
4.17.2 Constructor & Destructor Documentation	19
4.17.2.1 ModelParametersVlew()	19
4.18 Model.fitness.MoneyFunction Class Reference	20
4.18.1 Detailed Description	20
4.19 Model.operators.mutation.MutationController Class Reference	20
4.19.1 Detailed Description	20
4.20 Model.Individuals.Neighborhood Class Reference	20
4.20.1 Detailed Description	21
4.21 Model.operators.crossover.NeighborhoodCrossover Class Reference	21
4.21.1 Detailed Description	21
4.22 Model.operators.mutation.NeighborhoodMutation Class Reference	22
4.22.1 Detailed Description	22
4.23 Model.Individuals.Tiles.NullTile Class Reference	22
4.23.1 Detailed Description	22
4.23.2 Member Function Documentation	23
4.23.2.1 getValue()	23
4.23.2.2 makeCopy()	23
4.23.2.3 toString()	23
4.24 Model.operators.mutation.ParkExpansionMutation Class Reference	23
4.24.1 Detailed Description	23
4.25 parksincity_geneticalgorithms.ParksInCity_GeneticAlgorithms Class Reference	23
4.25.1 Detailed Description	23
4.25.2 Member Function Documentation	23
4.25.2.1 main()	23
4.26 Model.ParksInCityGA Class Reference	24
4.26.1 Detailed Description	24
4.27 Model.Individuals.Tiles.ParkTile Class Reference	24
4.27.1 Detailed Description	25
4.27.2 Member Function Documentation	25
4.27.2.1 getValue()	25
4.27.2.2 makeCopy()	25
4.27.2.3 toString()	25

4.28 Model.fitness.PonderatedFunction Class Reference	26
4.28.1 Detailed Description	26
4.29 Model.Individuals.Population< T extends Individual > Class Template Reference	26
4.30 Basics.Position Class Reference	27
4.30.1 Detailed Description	27
4.30.2 Constructor & Destructor Documentation	27
4.30.2.1 Position() [1/4]	27
4.30.2.2 Position() [2/4]	27
4.30.2.3 Position() [3/4]	28
4.30.2.4 Position() [4/4]	28
4.30.3 Member Function Documentation	28
4.30.3.1 div()	28
4.30.3.2 getX()	28
4.30.3.3 getY()	28
4.30.3.4 inRange()	29
4.30.3.5 isEqual()	29
4.30.3.6 mul()	29
4.30.3.7 mult()	30
4.30.3.8 setPos()	30
4.30.3.9 setX()	30
4.30.3.10 setY()	30
4.30.3.11 subtract()	31
4.30.3.12 sum()	31
4.30.3.13 toString()	31
4.31 Model.Inicializer.RandomCityInicializer Class Reference	32
4.31.1 Detailed Description	32
4.32 Model.Inicializer.RandomParkInicializer Class Reference	32
4.32.1 Detailed Description	32
4.33 Model.operators.mutation.RandomParkMutation Class Reference	33
4.33.1 Detailed Description	33
4.34 Model.operators.selection.RankSelection Class Reference	33
4.34.1 Detailed Description	33
4.35 Model.Individuals.Tiles.RoadTile Class Reference	33
4.35.1 Detailed Description	34
4.35.2 Member Function Documentation	34
4.35.2.1 getValue()	34
4.35.2.2 makeCopy()	34
4.35.2.3 toString()	34
4.36 Model.operators.selection.SelectionController Class Reference	35
4.36.1 Detailed Description	35
4.37 Views.GUI.SlideBar Class Reference	35
4.37.1 Detailed Description	35

4.37.2 Constructor & Destructor Documentation	35
4.37.2.1 SlideBar()	35
4.38 Model.Individuals.SortByfitness Class Reference	36
4.38.1 Detailed Description	36
4.39 Basics.SortByX Class Reference	36
4.39.1 Detailed Description	36
4.40 Views.GUI.StartView Class Reference	37
4.40.1 Detailed Description	37
4.40.2 Constructor & Destructor Documentation	37
4.40.2.1 StartView()	37
4.40.3 Member Function Documentation	37
4.40.3.1 getAppName()	37
4.40.3.2 showView()	37
4.40.3.3 updateView()	38
4.41 Model.Individuals.Tiles.Tile Class Reference	38
4.41.1 Detailed Description	38
4.42 Model.Individuals.Tiles.TileType Enum Reference	39
4.42.1 Detailed Description	39
4.43 Model.fitness.ValueFunction Class Reference	39
4.43.1 Detailed Description	39
4.44 Views.View Interface Reference	39
4.44.1 Detailed Description	40
4.45 Model.Individuals.Tiles.VoidTile Class Reference	40
4.45.1 Detailed Description	41
4.45.2 Member Function Documentation	41
4.45.2.1 getValue()	41
4.45.2.2 makeCopy()	41
4.45.2.3 toString()	41
5 File Documentation	43
5.1 src/Basics/Position.java File Reference	43
Index	45

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

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

Model.CityParameters	8
Cloneable	
Model.Individuals.Individual	16
Model.Individuals.CityTileset	10
Model.Inicializer.CloseToBuildingsParkInicializer	13
Comparable	
Model.Individuals.Individual	16
Model.Individuals.Population< T extends Individual >	26
Comparator	
Basics.SortByX	36
Model.Individuals.SortByfitness	36
Model.operators.crossover.CrossoverController	14
Model.operators.crossover.CrossoverOperator< T extends Individual >	14
Model.operators.crossover.CrossoverOperator< CityTileset >	14
Model.operators.crossover.NeighborhoodCrossover	21
Model.Individuals.FixedSizePopulation< CityTileset >	15
Model.Individuals.CityTilesetPopulation	12
Model.operators.crossover.GeometricalCrossover	15
HashSet	
Model.Individuals.Population< T extends Individual >	26
Model.Inicializer.InicializerController	16
javax.swing.JFrame	
Views.GUI.MainWindow	17
Views.GUI.StartView	37
javax.swing.JPanel	
Views.GUI.CityParametersView	9
Views.GUI.CityView	13
Views.GUI.ModelParametersVlew	19
Views.GUI.SlideBar	35
Model.operators.selection.KWayTournamentSelection	17
Model.ModelParameters	18
Model.fitness.MoneyFunction	20
Model.operators.mutation.MutationController	20
Model.Individuals.Neighborhood	20
Model.operators.mutation.NeighborhoodMutation	22

Model.operators.mutation.ParkExpansionMutation	23
parksyncity_geneticalgorithms.ParksInCity_GeneticAlgorithms	23
Model.ParksInCityGA	24
Model.fitness.PonderatedFunction	26
Model.Individuals.Population< T >	26
Model.Individuals.FixedSizePopulation< T extends Individual >	15
Basics.Position	27
Model.Inicializer.RandomCityInicializer	32
Model.Inicializer.RandomParkInicializer	32
Model.operators.mutation.RandomParkMutation	33
Model.operators.selection.RankSelection	33
Model.operators.selection.SelectionController	35
Model.Individuals.Tiles.Tile	38
Model.Individuals.Tiles.BuildingTile	7
Model.Individuals.Tiles.NullTile	22
Model.Individuals.Tiles.ParkTile	24
Model.Individuals.Tiles.RoadTile	33
Model.Individuals.Tiles.VoidTile	40
Model.Individuals.Tiles.TileType	39
Model.fitness.ValueFunction	39
Views.View	39
Views.GUI.MainWindow	17
Views.GUI.StartView	37

Chapter 2

Class Index

2.1 Class List

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

Model.Individuals.Tiles.BuildingTile	7
Model.CityParameters	
Class containing parameters for initalitation of cities	8
Views.GUI.CityParametersView	9
Model.Individuals.CityTileset	10
Model.Individuals.CityTilesetPopulation	12
Views.GUI.CityView	13
Model.Initializer.CloseToBuildingsParkInicalizer	13
Model.operators.crossover.CrossoverController	14
Model.operators.crossover.CrossoverOperator< T extends Individual >	14
Model.Individuals.FixedSizePopulation< T extends Individual >	15
Model.operators.crossover.GeometricalCrossover	15
Model.Individuals.Individual	16
Model.Initializer.InicalizerController	16
Model.operators.selection.KWayTournamentSelection	17
Views.GUI.MainWindow	17
Model.ModelParameters	18
Views.GUI.ModelParametersView	19
Model.fitness.MoneyFunction	20
Model.operators.mutation.MutationController	20
Model.Individuals.Neighborhood	20
Model.operators.crossover.NeighborhoodCrossover	21
Model.operators.mutation.NeighborhoodMutation	22
Model.Individuals.Tiles.NullTile	22
Model.operators.mutation.ParkExpansionMutation	23
parksincity_geneticalgorithms.ParksInCity_GeneticAlgorithms	23
Model.ParksInCityGA	24
Model.Individuals.Tiles.ParkTile	24
Model.fitness.PonderatedFunction	26
Model.Individuals.Population< T extends Individual >	26
Basics.Position	27
Model.Initializer.RandomCityInicalizer	32
Model.Initializer.RandomParkInicalizer	32
Model.operators.mutation.RandomParkMutation	33
Model.operators.selection.RankSelection	33

Model.Individuals.Tiles.RoadTile	33
Model.operators.selection.SelectionController	35
Views.GUI.SlideBar	35
Model.Individuals.SortByfitness	36
Basics.SortByX	36
Views.GUI.StartView	37
Model.Individuals.Tiles.Tile	38
Model.Individuals.Tiles.TileType	39
Model.fitness.ValueFunction	39
Views.View	39
Model.Individuals.Tiles.VoidTile	40

Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

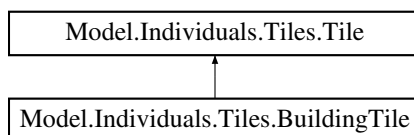
src/Basics/ Position.java	43
---	----

Chapter 4

Class Documentation

4.1 Model.Individuals.Tiles.BuildingTile Class Reference

Inheritance diagram for Model.Individuals.Tiles.BuildingTile:



Public Member Functions

- **BuildingTile** (int nCitycents)
- [BuildingTile makeCopy](#) ()
- int **getCITIZENS** ()
- int [getValue](#) ([TileType](#) type)
- String [toString](#) ()

Public Member Functions inherited from [Model.Individuals.Tiles.Tile](#)

- int **getValue** ()
- boolean **isVoid** ()
- boolean **isBuilding** ()
- boolean **isPark** ()
- boolean **isRoad** ()
- boolean **canBuild** ()

Static Public Attributes

- static final int **MAXCITIZEN** = 100
- static final int **MINCITIZEN** = 5

Static Public Attributes inherited from [Model.Individuals.Tiles.Tile](#)

- static int **NOVALUETILE** = 0

4.1.1 Detailed Description

Author

gabriel

4.1.2 Member Function Documentation

4.1.2.1 `getValue()`

```
int Model.Individuals.Tiles.BuildingTile.getValue (
    TileType type ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.1.2.2 `makeCopy()`

```
BuildingTile Model.Individuals.Tiles.BuildingTile.makeCopy ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.1.2.3 `toString()`

```
String Model.Individuals.Tiles.BuildingTile.toString ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

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

- `src/Model/Individuals/Tiles/BuildingTile.java`

4.2 [Model.CityParameters](#) Class Reference

Class containing parameters for inizationaltion of cities.

Public Member Functions

- **CityParameters** (int s, int rd, int bd, int ps, int pp)
- int **getSize** ()
- int **getRoadDensity** ()
- int **getBuildingDensity** ()
- int **getParkSpreadness** ()
- int **getParksPercentage** ()

Static Public Attributes

- static final int **DEFAULTSIZE** = 200
- static final int **MINSIZE** = 10
- static final int **MAXSIZE** = 400
- static final int **NEIGHBORHOODSIZE** = 50
- static int **MINPERCENTAGEOFPARKS**
- static int **MAXPERCENTAGEOFPARKS**
- static final int **PERCENTAGERANGE** = 1
- static final int **DEFPARKSPARCENTAGE** = 7
- static final int **MINSEPARATIONOFROADS** = 4
- static final int **MINROADDENSITY** = 1
- static final int **DEFROADDENSITY** = 20
- static final int **MAXROADDENSITY** = 50
- static final int **MINBUILDINGDENSITY** = 10
- static final int **DEFBUILDINGDENSITY** = 70
- static final int **MAXBUILDINGDENSITY** = 100
- static final int **MAXBUILDINGSIZE** = MINSEPARATIONOFROADS * 2
- static final int **MINBUILDINGSIZE** = MINSEPARATIONOFROADS / 2
- static int **DEFPARKSPREADNESS** = 1
- static int **MAXPARKSPREADNESS** = 1000
- static int **MINPARKSPREADNESS** = 1
- static int **STOPTRYSPAND** = 100

4.2.1 Detailed Description

Class containing parameters for inizationaltion of cities.

Author

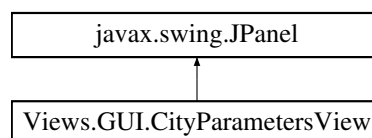
gabriel

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

- src/Model/CityParameters.java

4.3 Views.GUI.CityParametersView Class Reference

Inheritance diagram for Views.GUI.CityParametersView:



Public Member Functions

- [CityParametersView](#) ()
- int **getCitySizeValue** ()
- int **getRoadDensity** ()
- int **getBuildingDensity** ()
- int **getParkSpreadness** ()
- int **getParksPercentage** ()

4.3.1 Detailed Description

Author

gabriel

4.3.2 Constructor & Destructor Documentation

4.3.2.1 CityParametersView()

```
Views.GUI.CityParametersView.CityParametersView ( ) [inline]
```

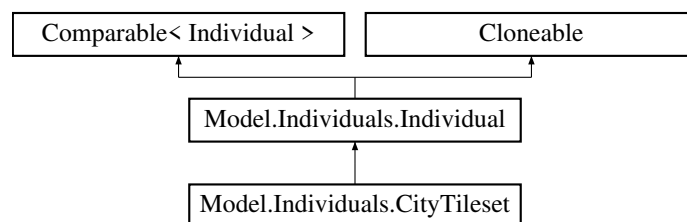
Creates new form CityParametersView

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

- src/Views/GUI/CityParametersView.java

4.4 Model.Individuals.CityTileset Class Reference

Inheritance diagram for Model.Individuals.CityTileset:



Public Member Functions

- **CityTileset** (int size)
- **CityTileset** ([CityTileset](#) cp)
- **CityTileset** (ArrayList< ArrayList< Tile > > tiles)
- Position **getMaxPark** ()
- int **getDisponibleTiles** ()
- void **setDisponibleTiles** (int i)
- double **getPercentageOfParks** ()
- int **getFreeTiles** ()
- void **setFreeTiles** (int ft)
- int **getId** ()
- int **getNparkTiles** ()
- Position **getParkTile** (int i)
- List< Position > **getArrayOfParkPositions** ()
- Tile **getTile** (Position pos)
- Tile **getTile** (int x, int y)
- ArrayList< ArrayList< Tile > > **getTiles** (Position topLeft, Position botRight)
- ArrayList< ArrayList< Tile > > **getNeighborhoodTiles** (Position pos)
- void **setTiles** (Position topLeft, ArrayList< ArrayList< Tile > > tiles)
- int **getSize** ()
- int **getNNeighborhood** ()
- int **getNeighborhoodNParks** (Position pos)
- boolean **NewParkTile** (Position pos)
- boolean **NewParkTile** (Position pos, Position neighbour)
- int **getValueOfPark** (Position pos)
- void **removeParkTile** (Position pos)
- boolean **extendPark** (Position pos)
- void **NewBuildingTile** (Position pos)
- void **NewBuildingTile** (Position pos, Tile bt)
- boolean **canBuild** (Position pos)
- void **NewRoadTile** (Position pos)
- String **toString** ()

Public Member Functions inherited from [Model.Individuals.Individual](#)

- double **getFitness** ()
- void **setFitness** (double fitness)
- int **compareTo** ([Individual](#) other)
- [Individual](#) **clone** () throws CloneNotSupportedException

Additional Inherited Members**Protected Attributes inherited from [Model.Individuals.Individual](#)**

- double **fitness**

4.4.1 Detailed Description**Author**

Gabriel Sanchez

4.4.2 Member Function Documentation

4.4.2.1 toString()

`String Model.Individuals.CityTileset.toString () [inline]`

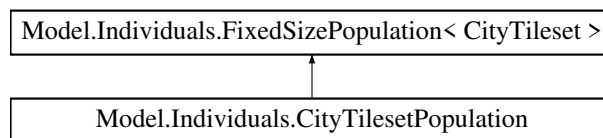
Reimplemented from [Model.Individuals.Individual](#).

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

- `src/Model/Individuals/CityTileset.java`

4.5 Model.Individuals.CityTilesetPopulation Class Reference

Inheritance diagram for `Model.Individuals.CityTilesetPopulation`:



Public Member Functions

- **CityTilesetPopulation** (long id, int maxSize)
- int **getMaxParkValue** ()
- List< [CityTileset](#) > **sortPopulationByFitness** ()

Public Member Functions inherited from

[Model.Individuals.FixedSizePopulation< CityTileset >](#)

- **FixedSizePopulation** (long id, int maxSize)
- int **getMaxSize** ()
- boolean **add** (T individual)

Additional Inherited Members

Static Public Attributes inherited from

[Model.Individuals.FixedSizePopulation< CityTileset >](#)

- static final int **MAXSIZE**
- static final int **MINSIZE**

4.5.1 Detailed Description

Author

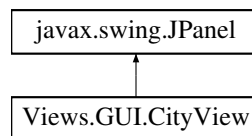
gabriel

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

- src/Model/Individuals/CityTilesetPopulation.java

4.6 Views.GUI.CityView Class Reference

Inheritance diagram for Views.GUI.CityView:



Public Member Functions

- CityTileset **getCt** ()
- BufferedImage **createCityImage** (CityTileset ct, int aumFactor)
- BufferedImage **createCityImage** (CityTileset ct)
- void **updateView** ()

4.6.1 Detailed Description

Author

gabriel

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

- src/Views/GUI/CityView.java

4.7 Model.Inicializer.CloseToBuildingsParkInicializer Class Reference

Public Member Functions

- void **Initalize** ()

4.7.1 Detailed Description

Author

gabriel

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

- `src/Model/Initializer/CloseToBuildingsParkInitializer.java`

4.8 `Model.operators.crossover.CrossoverController` Class Reference

Public Member Functions

- **CrossoverController** ([ModelParameters](#) mp)
- `Population< CityTileset > apply` (`CityTilesetPopulation` pop)

Static Public Attributes

- static int **REPETITIONS** = 2

4.8.1 Detailed Description

Author

gabriel

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

- `src/Model/operators/crossover/CrossoverController.java`

4.9 `Model.operators.crossover.CrossoverOperator< T extends Individual >` Class Template Reference

Classes

- class **Pairing**

Protected Member Functions

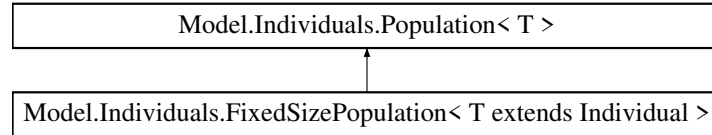
- `ArrayList< Pairing > makeRandomPairings` (`Population< T > population`)

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

- `src/Model/operators/crossover/CrossoverOperator.java`

4.10 Model.Individuals.FixedSizePopulation< T extends Individual > Class Template Reference

Inheritance diagram for Model.Individuals.FixedSizePopulation< T extends Individual >:



Public Member Functions

- **FixedSizePopulation** (long id, int maxSize)
- int **getMaxSize** ()
- boolean **add** (T individual)

Public Member Functions inherited from [Model.Individuals.Population< T >](#)

- **Population** (long id)
- **Population** ([Population](#) p)
- long **getId** ()
- void **setId** (long id)
- T **getBestIndividual** ()
- void **setBestIndividual** (T bestIndividual)
- double **getAverageFitness** ()
- ArrayList< T > **getArrayList** ()
- int **compareTo** ([Population](#) other)
- [Population](#)< T > **clone** ()
- boolean **equals** (Object o)
- int **hashCode** ()

Static Public Attributes

- static final int **MAXSIZE** = 500
- static final int **MINSIZE** = 2

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

- src/Model/Individuals/FixedSizePopulation.java

4.11 Model.operators.crossover.GeometricalCrossover Class Reference

Public Member Functions

- void **apply** ()

4.11.1 Detailed Description

Author

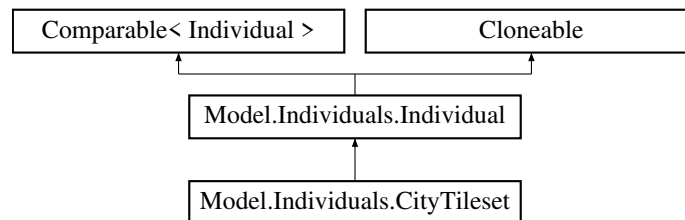
gabriel

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

- `src/Model/operators/crossover/GeometricalCrossover.java`

4.12 Model.Individuals.Individual Class Reference

Inheritance diagram for Model.Individuals.Individual:



Public Member Functions

- double **getFitness** ()
- void **setFitness** (double fitness)
- int **compareTo** ([Individual](#) other)
- [Individual](#) **clone** () throws CloneNotSupportedException
- String **toString** ()

Protected Attributes

- double **fitness**

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

- `src/Model/Individuals/Individual.java`

4.13 Model.Inicializer.InicializerController Class Reference

Public Member Functions

- **InicializerController** ([CityParameters](#) _cp, [ModelParameters](#) _mp)
- CityTilesetPopulation **Inicialize** ()
- CityTilesetPopulation **InicializeCities** ()

4.13.1 Detailed Description

Author

gabriel

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

- src/Model/Inicializer/InicializerController.java

4.14 Model.operators.selection.KWayTournamentSelection Class Reference

Public Member Functions

- void **apply** ()

4.14.1 Detailed Description

Author

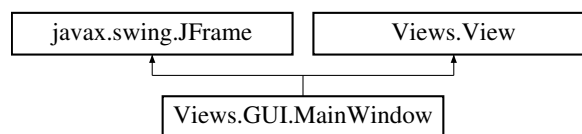
gabriel

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

- src/Model/operators/selection/KWayTournamentSelection.java

4.15 Views.GUI.MainWindow Class Reference

Inheritance diagram for Views.GUI.MainWindow:



Public Member Functions

- void [updateView](#) ()
- void **setPopulationCT** (Population< CityTileset > p)
- void [showView](#) ()
- String [getAppName](#) ()

4.15.1 Detailed Description

Author

gabriel

4.15.2 Member Function Documentation

4.15.2.1 getAppName()

```
String Views.GUI.MainWindow.getAppName ( ) [inline]
```

Implements [Views.View](#).

4.15.2.2 showView()

```
void Views.GUI.MainWindow.showView ( ) [inline]
```

Implements [Views.View](#).

4.15.2.3 updateView()

```
void Views.GUI.MainWindow.updateView ( ) [inline]
```

Implements [Views.View](#).

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

- src/Views/GUI/MainWindow.java

4.16 Model.ModelParameters Class Reference

Public Member Functions

- **ModelParameters** (int popSize, int moneyPond)
- int **getPOPULATIONSIZE** ()
- int **getMONEYPONDERATION** ()
- double **getCROSSOVERPROB** ()
- int **getCROSSOVERINTENSITY** ()
- boolean **getUSEELITISM** ()
- boolean **getUSETRUNCATE** ()
- double **getTRUNCATESIZE** ()

4.16.1 Detailed Description

Author

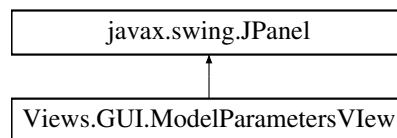
gabriel

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

- src/Model/ModelParameters.java

4.17 Views.GUI.ModelParametersVlew Class Reference

Inheritance diagram for Views.GUI.ModelParametersVlew:



Public Member Functions

- [ModelParametersVlew](#) ()
- int [getPopSizeValue](#) ()
- int [getMoneyPonderationValue](#) ()

4.17.1 Detailed Description

Author

gabriel

4.17.2 Constructor & Destructor Documentation

4.17.2.1 ModelParametersVlew()

```
Views.GUI.ModelParametersVlew.ModelParametersVlew ( ) [inline]
```

Creates new form ModelParametersVlew

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

- src/Views/GUI/ModelParametersVlew.java

4.18 Model.fitness.MoneyFunction Class Reference

Static Public Member Functions

- static double **Evaluate** (CityTileset city)

4.18.1 Detailed Description

Author

gabriel

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

- src/Model/fitness/MoneyFunction.java

4.19 Model.operators.mutation.MutationController Class Reference

Public Member Functions

- void **apply** (Population< CityTileset > pop)

4.19.1 Detailed Description

Author

gabriel

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

- src/Model/operators/mutation/MutationController.java

4.20 Model.Individuals.Neighborhood Class Reference

Static Public Attributes

- static final int **DEFAULTMAXPARKS** = Integer.MAX_VALUE

Protected Member Functions

- **Neighborhood** (int _maxParks, int _size)
- **Neighborhood** ([Neighborhood](#) cp)
- int **getTotalValue** ()
- void **setTotalValue** (int tv)
- void **setNParks** (int nparks)
- int **getNParks** ()
- int **getSize** ()
- boolean **addPark** (ParkTile p)
- boolean **canAddPark** ()
- boolean **deletePark** (ParkTile p)

4.20.1 Detailed Description

Author

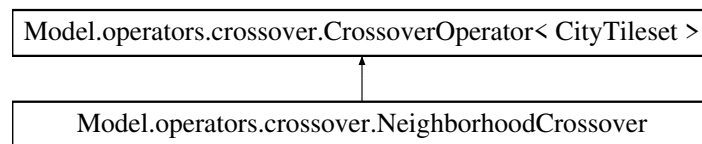
gabriel

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

- src/Model/Individuals/Neighborhood.java

4.21 Model.operators.crossover.NeighborhoodCrossover Class Reference

Inheritance diagram for Model.operators.crossover.NeighborhoodCrossover:



Public Member Functions

- Population< CityTileset > **apply** (CityTilesetPopulation pop, Random generator)

Additional Inherited Members

Protected Member Functions inherited from [Model.operators.crossover.CrossoverOperator< CityTileset >](#)

- ArrayList< Pairing > **makeRandomPairings** (Population< T > population)

4.21.1 Detailed Description

Author

gabriel

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

- src/Model/operators/crossover/NeighborhoodCrossover.java

4.22 Model.operators.mutation.NeighborhoodMutation Class Reference

4.22.1 Detailed Description

Author

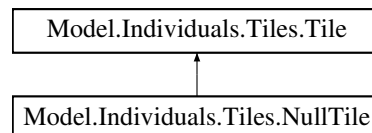
gabriel

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

- src/Model/operators/mutation/NeighborhoodMutation.java

4.23 Model.Individuals.Tiles.NullTile Class Reference

Inheritance diagram for Model.Individuals.Tiles.NullTile:



Public Member Functions

- [NullTile makeCopy \(\)](#)
- int [getValue \(TileType t\)](#)
- String [toString \(\)](#)

Public Member Functions inherited from [Model.Individuals.Tiles.Tile](#)

- int [getValue \(\)](#)
- boolean [isVoid \(\)](#)
- boolean [isBuilding \(\)](#)
- boolean [isPark \(\)](#)
- boolean [isRoad \(\)](#)
- boolean [canBuild \(\)](#)

Additional Inherited Members

Static Public Attributes inherited from [Model.Individuals.Tiles.Tile](#)

- static int [NOVALUETILE](#) = 0

4.23.1 Detailed Description

Author

gabriel

4.23.2 Member Function Documentation

4.23.2.1 getValue()

```
int Model.Individuals.Tiles.NullTile.getValue (
    TileType t ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.23.2.2 makeCopy()

```
NullTile Model.Individuals.Tiles.NullTile.makeCopy ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.23.2.3 toString()

```
String Model.Individuals.Tiles.NullTile.toString ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

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

- src/Model/Individuals/Tiles/NullTile.java

4.24 Model.operators.mutation.ParkExpansionMutation Class Reference

4.24.1 Detailed Description

Author

gabriel

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

- src/Model/operators/mutation/ParkExpansionMutation.java

4.25 parksincity_geneticalgorithms.ParksInCity_GeneticAlgorithms Class Reference

Static Public Member Functions

- static void [main](#) (String[] args)

4.25.1 Detailed Description

Author

gabriel

4.25.2 Member Function Documentation

4.25.2.1 main()

```
static void parksincity_geneticalgorithms.ParksInCity_GeneticAlgorithms.main (
    String[] args ) [inline], [static]
```

Parameters

<i>args</i>	the command line arguments
-------------	----------------------------

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

- `src/parksincity_geneticalgorithms/ParksInCity_GeneticAlgorithms.java`

4.26 Model.ParksInCityGA Class Reference

Public Member Functions

- **ParksInCityGA** ([CityParameters](#) cp, [ModelParameters](#) mp)
- void **run** ()
- CityTilesetPopulation **getPopulation** ()
- void **applyCrossover** ()
- void **applyFitness** ()
- void **applySelection** ()
- Population **savePopulation** ()

4.26.1 Detailed Description

Author

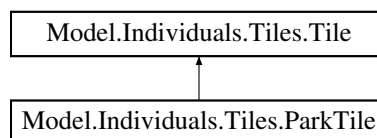
gabriel

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

- `src/Model/ParksInCityGA.java`

4.27 Model.Individuals.Tiles.ParkTile Class Reference

Inheritance diagram for Model.Individuals.Tiles.ParkTile:



Public Member Functions

- **ParkTile** (int v)
- [ParkTile](#) **makeCopy** ()
- int **getValue** ([TileType](#) type)
- void **addValue** (int v)
- String **toString** ()

Public Member Functions inherited from [Model.Individuals.Tiles.Tile](#)

- int **getValue** ()
- boolean **isVoid** ()
- boolean **isBuilding** ()
- boolean **isPark** ()
- boolean **isRoad** ()
- boolean **canBuild** ()

Static Public Member Functions

- static int **getAreaOfEffect** ()

Additional Inherited Members

Static Public Attributes inherited from [Model.Individuals.Tiles.Tile](#)

- static int **NOVALUETILE** = 0

4.27.1 Detailed Description

Author

gabriel

4.27.2 Member Function Documentation

4.27.2.1 getValue()

```
int Model.Individuals.Tiles.ParkTile.getValue (  
    TileType type ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.27.2.2 makeCopy()

```
ParkTile Model.Individuals.Tiles.ParkTile.makeCopy ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.27.2.3 toString()

```
String Model.Individuals.Tiles.ParkTile.toString ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

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

- src/Model/Individuals/Tiles/ParkTile.java

4.28 Model.fitness.PonderatedFunction Class Reference

Public Member Functions

- **PonderatedFunction** (int moneyPoneration)
- void **evaluate** (CityTilesetPopulation pop)

4.28.1 Detailed Description

Author

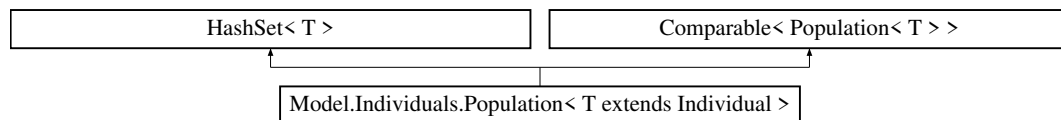
gabriel

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

- src/Model/fitness/PonderatedFunction.java

4.29 Model.Individuals.Population< T extends Individual > Class Template Reference

Inheritance diagram for Model.Individuals.Population< T extends Individual >:



Public Member Functions

- **Population** (long id)
- **Population** ([Population](#) p)
- long **getId** ()
- void **setId** (long id)
- T **getBestIndividual** ()
- void **setBestIndividual** (T bestIndividual)
- double **getAverageFitness** ()
- ArrayList< T > **getArrayList** ()
- int **compareTo** ([Population](#) other)
- [Population](#)< T > **clone** ()
- boolean **equals** (Object o)
- int **hashCode** ()

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

- src/Model/Individuals/Population.java

4.30 Basics.Position Class Reference

Public Member Functions

- [Position](#) ()
- [Position](#) (int n)
- [Position](#) (int _x, int _y)
- [Position](#) ([Position](#) p)
- int [getX](#) ()
- int [getY](#) ()
- void [setX](#) (int _x)
- void [setY](#) (int _y)
- void [setPos](#) (int _x, int _y)
- [Position](#) [mult](#) (int m)
- [Position](#) [div](#) (int d)
- boolean [inRange](#) ([Position](#) topRight, [Position](#) botLeft)
- boolean [isEqual](#) ([Position](#) pos)
- String [toString](#) ()

Static Public Member Functions

- static [Position](#) [subtract](#) ([Position](#) pos1, [Position](#) pos2)
- static [Position](#) [sum](#) ([Position](#) pos1, [Position](#) pos2)
- static [Position](#) [mul](#) ([Position](#) pos1, int num)

Static Public Attributes

- static final [Position](#) [ZERO](#) = new [Position](#)(0)
Default position. Origin.

4.30.1 Detailed Description

Author

gabriel Position Represents a 2D point, and has methods to operate with them

4.30.2 Constructor & Destructor Documentation

4.30.2.1 [Position](#)() [1/4]

```
Basics.Position.Position ( ) [inline]
```

Default constructor

4.30.2.2 [Position](#)() [2/4]

```
Basics.Position.Position (
    int n ) [inline]
```

Constructor with one parameter

4.30.2.3 Position() [3/4]

```
Basics.Position.Position (
    int _x,
    int _y ) [inline]
```

Constructor with two parameters

4.30.2.4 Position() [4/4]

```
Basics.Position.Position (
    Position p ) [inline]
```

Copy constructor

4.30.3 Member Function Documentation

4.30.3.1 div()

```
Position Basics.Position.div (
    int d ) [inline]
```

Division of the position with an integer

Parameters

<i>d</i>	
----------	--

Returns

4.30.3.2 getX()

```
int Basics.Position.getX ( ) [inline]
```

Getter of x

Returns

4.30.3.3 getY()

```
int Basics.Position.getY ( ) [inline]
```

Getter of y

Returns

4.30.3.4 inRange()

```
boolean Basics.Position.inRange (
    Position topRight,
    Position botLeft ) [inline]
```

Checks if the point is "inside" the square made by the two corners given

Parameters

<i>topRight</i>	
<i>botLeft</i>	

Returns

4.30.3.5 isEqual()

```
boolean Basics.Position.isEqual (
    Position pos ) [inline]
```

Checks if two points have the same coordinates

Parameters

<i>pos</i>	
------------	--

Returns

4.30.3.6 mul()

```
static Position Basics.Position.mul (
    Position pos1,
    int num ) [inline], [static]
```

Static function to multiply a position with a number (integer)

Parameters

<i>pos1</i>	
<i>num</i>	

Returns

4.30.3.7 mult()

```
Position Basics.Position.mult (
    int m ) [inline]
```

Multiplication of the position with a integer

Parameters

<i>m</i>	
----------	--

Returns

4.30.3.8 setPos()

```
void Basics.Position.setPos (
    int _x,
    int _y ) [inline]
```

Setter for a position

Parameters

\leftarrow _x	
\leftarrow _y	

4.30.3.9 setX()

```
void Basics.Position.setX (
    int _x ) [inline]
```

Setter of x

Parameters

\leftarrow _x	
--------------------	--

4.30.3.10 setY()

```
void Basics.Position.setY (
    int _y ) [inline]
```

Setter of y

Parameters

↩	
↩	
y	

4.30.3.11 subtract()

```
static Position Basics.Position.subtract (
    Position pos1,
    Position pos2 ) [inline], [static]
```

Static method to subtract position

Parameters

pos1	
pos2	

4.30.3.12 sum()

```
static Position Basics.Position.sum (
    Position pos1,
    Position pos2 ) [inline], [static]
```

Static method to sum positions

Parameters

pos1	
pos2	

Returns

4.30.3.13 toString()

```
String Basics.Position.toString ( ) [inline]
```

toString method for Position format: (x,y)

Returns

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

- src/Basics/[Position.java](#)

4.31 Model.Inicializer.RandomCityInicializer Class Reference

Public Member Functions

- void **setCt** (CityTileset _ct)
- void **setNewBuildingProb** (double nbp)
- void **inicialize** (CityTileset _ct, int n_nodes)
- void **generateNodes** (int n_nodes)
- void **createBuildings** ()
- void **createBuildings** (int n_buildings, boolean type)
- void **createRoads** ()

4.31.1 Detailed Description

Author

gabriel

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

- src/Model/Inicializer/RandomCityInicializer.java

4.32 Model.Inicializer.RandomParkInicializer Class Reference

Public Member Functions

- **RandomParkInicializer** (int spreadness)
- void **setSpreadness** (int sp)
- void **Inicialize** (CityTileset ct)

Public Attributes

- int **maxParks**
- int **minParks**

4.32.1 Detailed Description

Author

gabriel

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

- src/Model/Inicializer/RandomParkInicializer.java

4.33 Model.operators.mutation.RandomParkMutation Class Reference

Public Member Functions

- void **apply** (Population< CityTileset > pop)

4.33.1 Detailed Description

Author

gabriel

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

- src/Model/operators/mutation/RandomParkMutation.java

4.34 Model.operators.selection.RankSelection Class Reference

Public Member Functions

- Population< CityTileset > **apply** (CityTilesetPopulation pop, boolean useElitism, boolean truncate, Random generator, double truncateSize)

4.34.1 Detailed Description

Author

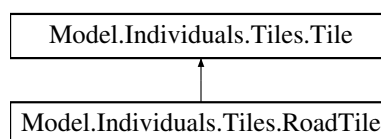
gabriel

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

- src/Model/operators/selection/RankSelection.java

4.35 Model.Individuals.Tiles.RoadTile Class Reference

Inheritance diagram for Model.Individuals.Tiles.RoadTile:



Public Member Functions

- [RoadTile](#) `makeCopy ()`
- `int` `getValue (TileType type)`
- `String` `toString ()`

Public Member Functions inherited from [Model.Individuals.Tiles.Tile](#)

- `int` `getValue ()`
- `boolean` `isVoid ()`
- `boolean` `isBuilding ()`
- `boolean` `isPark ()`
- `boolean` `isRoad ()`
- `boolean` `canBuild ()`

Additional Inherited Members

Static Public Attributes inherited from [Model.Individuals.Tiles.Tile](#)

- `static int` `NOVALUETILE = 0`

4.35.1 Detailed Description

Author

gabriel

4.35.2 Member Function Documentation

4.35.2.1 `getValue()`

```
int Model.Individuals.Tiles.RoadTile.getValue (  
    TileType type ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.35.2.2 `makeCopy()`

```
RoadTile Model.Individuals.Tiles.RoadTile.makeCopy ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.35.2.3 `toString()`

```
String Model.Individuals.Tiles.RoadTile.toString ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

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

- `src/Model/Individuals/Tiles/RoadTile.java`

4.36 Model.operators.selection.SelectionController Class Reference

Public Member Functions

- **SelectionController** ([ModelParameters](#) mp)
- Population< CityTileset > **apply** (CityTilesetPopulation pop)

4.36.1 Detailed Description

Author

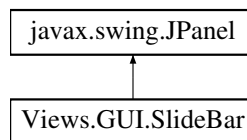
gabriel

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

- src/Model/operators/selection/SelectionController.java

4.37 Views.GUI.SlideBar Class Reference

Inheritance diagram for Views.GUI.SlideBar:



Public Member Functions

- [SlideBar](#) ()
- void **setLimits** (int max, int min)
- void **setDefault** (int def)
- int **getValue** ()

4.37.1 Detailed Description

Author

gabriel

4.37.2 Constructor & Destructor Documentation

4.37.2.1 SlideBar()

```
Views.GUI.SlideBar.SlideBar ( ) [inline]
```

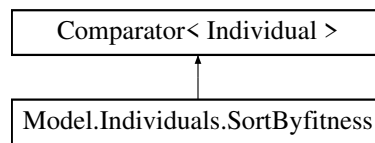
Creates new form prueba

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

- src/Views/GUI/SlideBar.java

4.38 Model.Individuals.SortByfitness Class Reference

Inheritance diagram for Model.Individuals.SortByfitness:



Public Member Functions

- `int compare (Individual a, Individual b)`

4.38.1 Detailed Description

Author

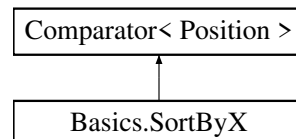
gabriel

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

- `src/Model/Individuals/SortByfitness.java`

4.39 Basics.SortByX Class Reference

Inheritance diagram for Basics.SortByX:



Public Member Functions

- `int compare (Position a, Position b)`

4.39.1 Detailed Description

Author

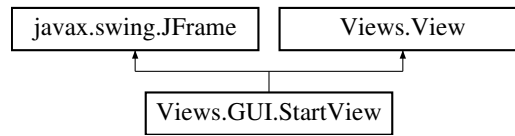
gabriel

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

- `src/Basics/SortByX.java`

4.40 Views.GUI.StartView Class Reference

Inheritance diagram for Views.GUI.StartView:



Public Member Functions

- [StartView](#) ()
- [MainWindow](#) `generateMainWindow` ()
- void [updateView](#) ()
- void [showView](#) ()
- String [getAppName](#) ()

4.40.1 Detailed Description

Author

gabriel

4.40.2 Constructor & Destructor Documentation

4.40.2.1 StartView()

```
Views.GUI.StartView.StartView ( ) [inline]
```

Creates new form StartView

4.40.3 Member Function Documentation

4.40.3.1 getAppName()

```
String Views.GUI.StartView.getAppName ( ) [inline]
```

Implements [Views.View](#).

4.40.3.2 showView()

```
void Views.GUI.StartView.showView ( ) [inline]
```

Implements [Views.View](#).

4.40.3.3 updateView()

```
void Views.GUI.StartView.updateView ( ) [inline]
```

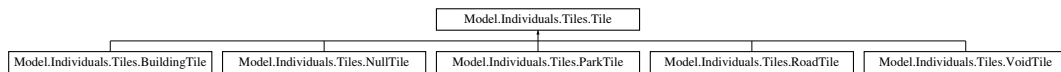
Implements [Views.View](#).

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

- src/Views/GUI/StartView.java

4.41 Model.Individuals.Tiles.Tile Class Reference

Inheritance diagram for Model.Individuals.Tiles.Tile:



Public Member Functions

- abstract [Tile](#) **makeCopy** ()
- int **getValue** ()
- abstract int **getValue** ([TileType](#) type)
- boolean **isVoid** ()
- boolean **isBuilding** ()
- boolean **isPark** ()
- boolean **isRoad** ()
- boolean **canBuild** ()
- abstract String **toString** ()

Static Public Attributes

- static int **NOVALUETILE** = 0

4.41.1 Detailed Description

Author

gabriel

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

- src/Model/Individuals/Tiles/Tile.java

4.42 Model.Individuals.Tiles.TileType Enum Reference

Public Attributes

- **BUILDING**
- **PARK**
- **ROAD**
- **VOID**

4.42.1 Detailed Description

Author

gabriel

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

- src/Model/Individuals/Tiles/TileType.java

4.43 Model.fitness.ValueFunction Class Reference

Static Public Member Functions

- static Double **Evaluate** (CityTileset city)

4.43.1 Detailed Description

Author

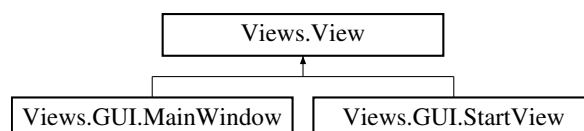
gabriel

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

- src/Model/fitness/ValueFunction.java

4.44 Views.View Interface Reference

Inheritance diagram for Views.View:



Public Member Functions

- void **updateView** ()
- void **showView** ()
- String **getAppName** ()

4.44.1 Detailed Description

Author

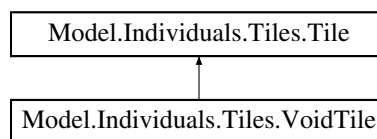
Profe

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

- src/Views/View.java

4.45 Model.Individuals.Tiles.VoidTile Class Reference

Inheritance diagram for Model.Individuals.Tiles.VoidTile:



Public Member Functions

- [VoidTile](#) **makeCopy** ()
- int **getValue** ([TileType](#) type)
- String **toString** ()

Public Member Functions inherited from [Model.Individuals.Tiles.Tile](#)

- int **getValue** ()
- boolean **isVoid** ()
- boolean **isBuilding** ()
- boolean **isPark** ()
- boolean **isRoad** ()
- boolean **canBuild** ()

Additional Inherited Members

Static Public Attributes inherited from [Model.Individuals.Tiles.Tile](#)

- static int **NOVALUETILE** = 0

4.45.1 Detailed Description

Author

gabriel

4.45.2 Member Function Documentation

4.45.2.1 getValue()

```
int Model.Individuals.Tiles.VoidTile.getValue (
    TileType type ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.45.2.2 makeCopy()

```
VoidTile Model.Individuals.Tiles.VoidTile.makeCopy ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

4.45.2.3 toString()

```
String Model.Individuals.Tiles.VoidTile.toString ( ) [inline]
```

Reimplemented from [Model.Individuals.Tiles.Tile](#).

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

- `src/Model/Individuals/Tiles/VoidTile.java`

Chapter 5

File Documentation

5.1 src/Basics/Position.java File Reference

Classes

- class [Basics.Position](#)

Index

Basics.Position, [27](#)
 div, [28](#)
 getX, [28](#)
 getY, [28](#)
 inRange, [28](#)
 isEqual, [29](#)
 mul, [29](#)
 mult, [29](#)
 Position, [27](#), [28](#)
 setPos, [30](#)
 setX, [30](#)
 setY, [30](#)
 subtract, [31](#)
 sum, [31](#)
 toString, [31](#)
Basics.SortByX, [36](#)

CityParametersView
 Views.GUI.CityParametersView, [10](#)

div
 Basics.Position, [28](#)

getAppName
 Views.GUI.MainWindow, [18](#)
 Views.GUI.StartView, [37](#)

getValue
 Model.Individuals.Tiles.BuildingTile, [8](#)
 Model.Individuals.Tiles.NullTile, [23](#)
 Model.Individuals.Tiles.ParkTile, [25](#)
 Model.Individuals.Tiles.RoadTile, [34](#)
 Model.Individuals.Tiles.VoidTile, [41](#)

getX
 Basics.Position, [28](#)

getY
 Basics.Position, [28](#)

inRange
 Basics.Position, [28](#)

isEqual
 Basics.Position, [29](#)

main
 parksincity_geneticalgorithms.ParksInCity_GeneticAlgorithms, [23](#)

makeCopy
 Model.Individuals.Tiles.BuildingTile, [8](#)
 Model.Individuals.Tiles.NullTile, [23](#)
 Model.Individuals.Tiles.ParkTile, [25](#)
 Model.Individuals.Tiles.RoadTile, [34](#)
 Model.Individuals.Tiles.VoidTile, [41](#)

Model.CityParameters, [8](#)
Model.fitness.MoneyFunction, [20](#)
Model.fitness.PonderatedFunction, [26](#)
Model.fitness.ValueFunction, [39](#)
Model.Individuals.CityTileset, [10](#)
 toString, [12](#)
Model.Individuals.CityTilesetPopulation, [12](#)
Model.Individuals.FixedSizePopulation< T extends Individual >, [15](#)
Model.Individuals.Individual, [16](#)
Model.Individuals.Neighborhood, [20](#)
Model.Individuals.Population< T extends Individual >, [26](#)
Model.Individuals.SortByfitness, [36](#)
Model.Individuals.Tiles.BuildingTile, [7](#)
 getValue, [8](#)
 makeCopy, [8](#)
 toString, [8](#)
Model.Individuals.Tiles.NullTile, [22](#)
 getValue, [23](#)
 makeCopy, [23](#)
 toString, [23](#)
Model.Individuals.Tiles.ParkTile, [24](#)
 getValue, [25](#)
 makeCopy, [25](#)
 toString, [25](#)
Model.Individuals.Tiles.RoadTile, [33](#)
 getValue, [34](#)
 makeCopy, [34](#)
 toString, [34](#)
Model.Individuals.Tiles.Tile, [38](#)
Model.Individuals.Tiles.TileType, [39](#)
Model.Individuals.Tiles.VoidTile, [40](#)
 getValue, [41](#)
 makeCopy, [41](#)
 toString, [41](#)
Model.Inicializer.CloseToBuildingsParkInicializer, [13](#)
Model.Inicializer.InicializerController, [16](#)
Model.Inicializer.RandomCityInicializer, [32](#)
Model.Inicializer.RandomParkInicializer, [32](#)
Model.ModelParameters, [18](#)
Model.operators.crossover.CrossoverController, [14](#)
Model.operators.crossover.CrossoverOperator< T extends Individual >, [14](#)
Model.operators.crossover.GeometricalCrossover, [15](#)
Model.operators.crossover.NeighborhoodCrossover, [21](#)
Model.operators.mutation.MutationController, [20](#)
Model.operators.mutation.NeighborhoodMutation, [22](#)
Model.operators.mutation.ParkExpansionMutation, [23](#)

- Model.operators.mutation.RandomParkMutation, [33](#)
- Model.operators.selection.KWayTournamentSelection, [17](#)
- Model.operators.selection.RankSelection, [33](#)
- Model.operators.selection.SelectionController, [35](#)
- Model.ParksInCityGA, [24](#)
- ModelParametersView
 - Views.GUI.ModelParametersVlew, [19](#)
- mul
 - Basics.Position, [29](#)
- mult
 - Basics.Position, [29](#)
- parkscinicity_geneticalgorithms.ParksInCity_GeneticAlgorithms, [23](#)
- main, [23](#)
- Position
 - Basics.Position, [27](#), [28](#)
- setPos
 - Basics.Position, [30](#)
- setX
 - Basics.Position, [30](#)
- setY
 - Basics.Position, [30](#)
- showView
 - Views.GUI.MainWindow, [18](#)
 - Views.GUI.StartView, [37](#)
- SlideBar
 - Views.GUI.SlideBar, [35](#)
- src/Basics/Position.java, [43](#)
- StartView
 - Views.GUI.StartView, [37](#)
- subtract
 - Basics.Position, [31](#)
- sum
 - Basics.Position, [31](#)
- toString
 - Basics.Position, [31](#)
 - Model.Individuals.CityTileset, [12](#)
 - Model.Individuals.Tiles.BuildingTile, [8](#)
 - Model.Individuals.Tiles.NullTile, [23](#)
 - Model.Individuals.Tiles.ParkTile, [25](#)
 - Model.Individuals.Tiles.RoadTile, [34](#)
 - Model.Individuals.Tiles.VoidTile, [41](#)
- updateView
 - Views.GUI.MainWindow, [18](#)
 - Views.GUI.StartView, [37](#)
- Views.GUI.CityParametersView, [9](#)
 - CityParametersView, [10](#)
- Views.GUI.CityView, [13](#)
- Views.GUI.MainWindow, [17](#)
 - getAppName, [18](#)
 - showView, [18](#)
 - updateView, [18](#)
- Views.GUI.ModelParametersVlew, [19](#)
 - ModelParametersView, [19](#)
- Views.GUI.SlideBar, [35](#)
 - SlideBar, [35](#)
- Views.GUI.StartView, [37](#)
 - getAppName, [37](#)
 - showView, [37](#)
 - StartView, [37](#)
 - updateView, [37](#)
- Views.View, [39](#)