Tecnológico nacional de México

Alumno:

Fernandez Guzmán Juan de Dios

Cordero Hernández Jesús

Cruz Ruiz Eliuh proceso

Materia:

Programación orientada a Objetos

Clave de la materia:

2g2a

Catedrático:

Rafael Herrera García

Orizaba, Ver.

Contenido

Ejercicio 1:

Problemática:

En cierta empresa de fabricación de ropa, se requiere sistematizar el proceso, se fabrican diversidad de prendas de vestir tanto para caballeros como damas, no se fabrica ropa de niños, de cada prenda se

tiene un registro de modelo, tela, costo de producción por pieza, genero (masculino, femenino o mixto), temporada (primavera, verano, otoño o invierno), cuando se produce un lote de cada prenda, se registra número de lote, número de piezas, fecha de fabricación. De cada lote debe calcularse el costo de producción del lote, así como el monto de recuperación que se obtendrá después de su venta, el precio de venta por pieza es siempre 15% más del costo de producción y por lote completo es por cada pieza el 5% más del costo de producción.

OPERACION	TIPO DE DATO	ARGUMENTO	ALCANCE
contructor		Modelo, tela, costo, temporada, genero	publico
Obtenermodelo	String		public
Obtenertela	String		public
Obtenercosto	float		public
Obtenertemporada	String		public
Otenergenero	String		public

Análisis:

Prenda

ATRIBUTO	TIPO DE DATO	CARDINALIDAD	OBLIGATORIEDAD
Modelo	String	1	Si
Tela	String	1	Si
Costo	float	1	Si
Temporada	String	1	Si
Genero	Genero	1	Si

Prenda

OPERACION	TIPO DE DATO	ARGUMENTO	ALCANCE
contructor		Modelo, tela, costo, temporada, genero	publico
Obtenermodelo	String		public

Obtenertela	String	public
Obtenercosto	float	public
Obtenertemporada	String	public
Otenergenero	String	public

Lote

ATRIBUTO	TIPO DE DATO	CARDINALIDAD	OBLIGATORIEDAD
Numerodelote	int	1	Si
Numero De Prendas	int	1	Si
Fecha De Fabricacion	LocalDate	1	Si
Costo	float	1	si

lote

OPERACION	TIPO DE DATO	ARGUMENTO	ALCANCE
Constructor		Numerodelote, Numerodeprendas, Fechadefabricacion, costo	publico
ObtenerNumerodelote	int		public
ObtenerNumerodePrendas	int		public
ObtenerfechadeFabricacion	LocalDate		public
ObtenerCosto	String		public

Ganancia

ATRIBUTO	TIPO DE DATO	CARDINALIDAD	OBLIGATORIEDAD
CostoProduccion	float	1	Si
Ganancia	float	1	si

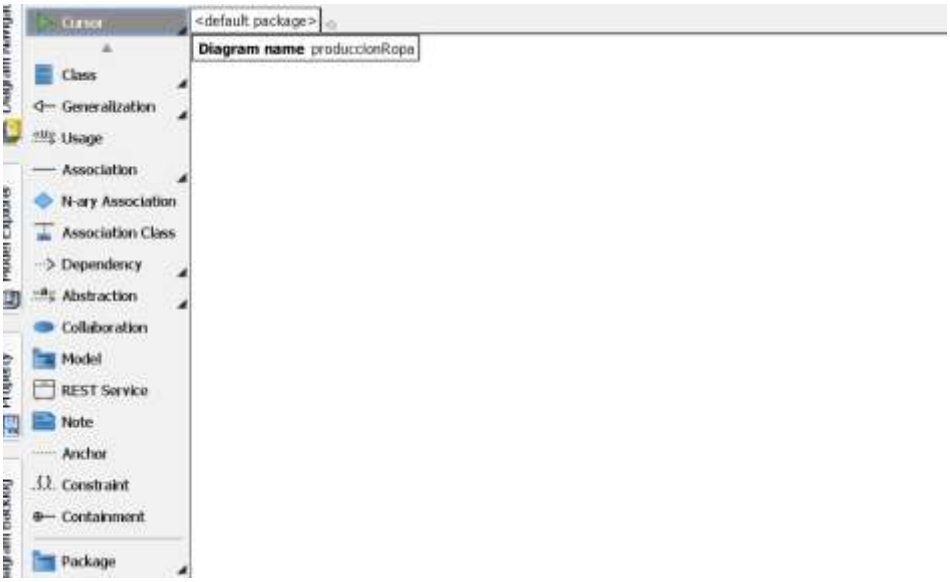
Ganancia

OPERACION	TIPO DE DATO	ARGUMENTO	ALCA
contructor		CostoProduccion, ganacia	publ
ObtenerCostoProduccion	float		public

CalcularGanancia	float	CostoProduccion,numeroDePrendas	public

Diagrama Uml:

Creación de la clase:



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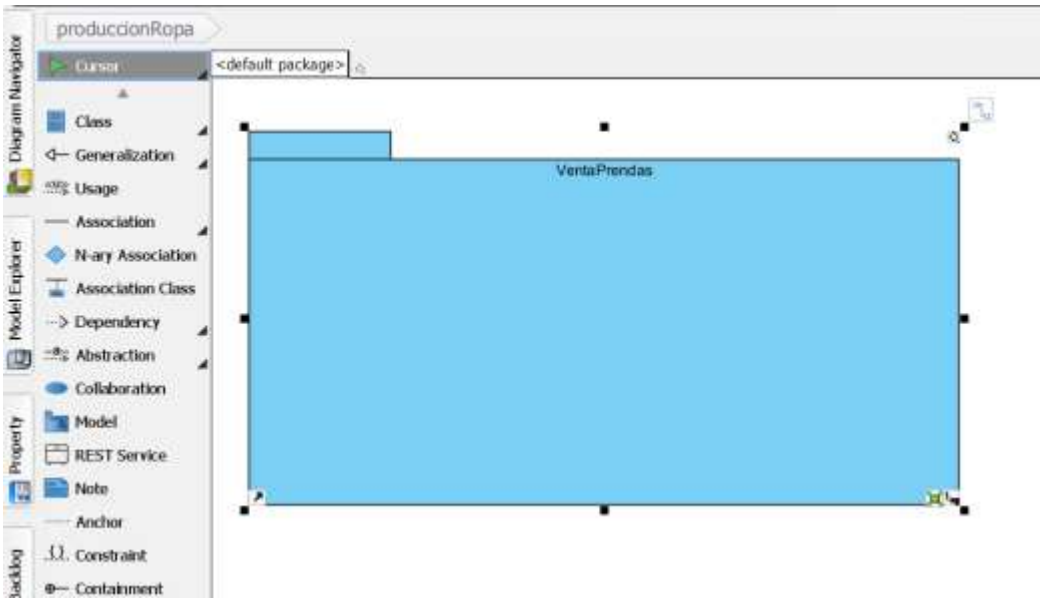

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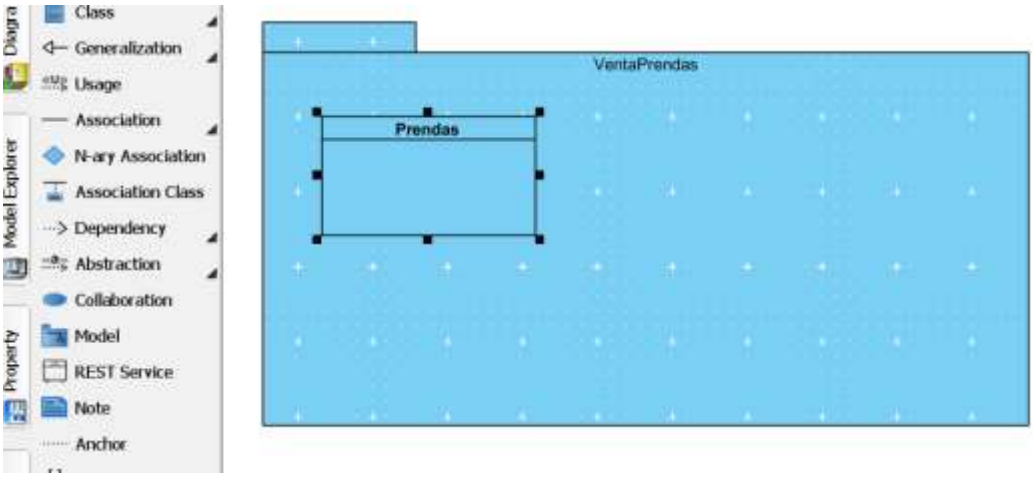

Declaración de atributos:

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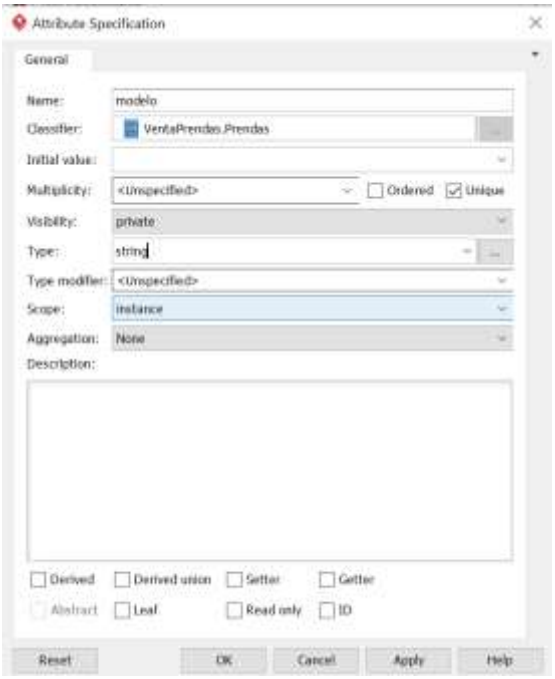

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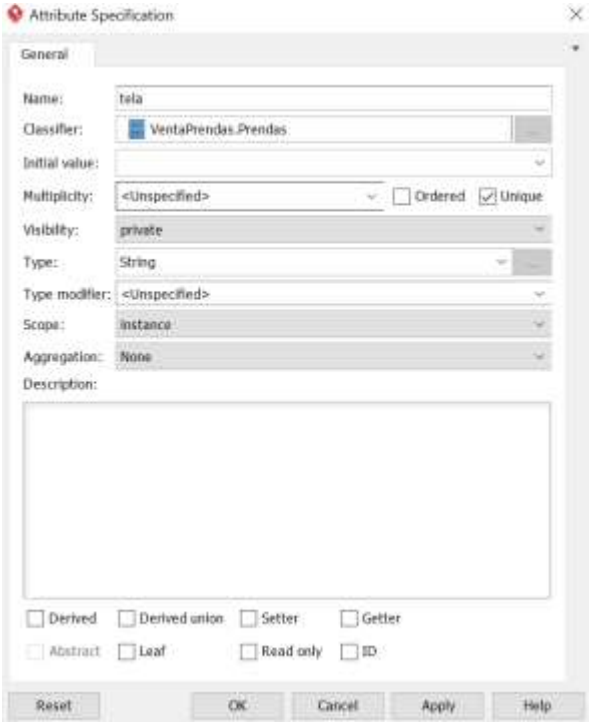
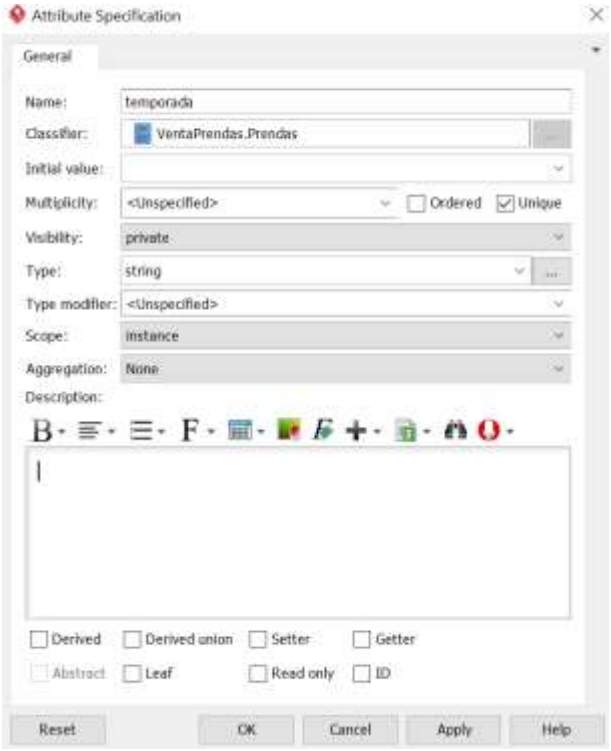
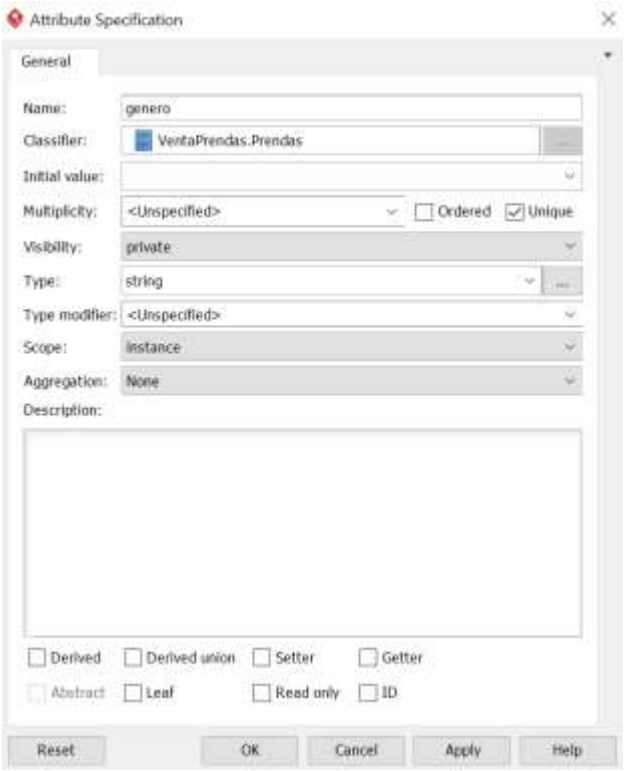


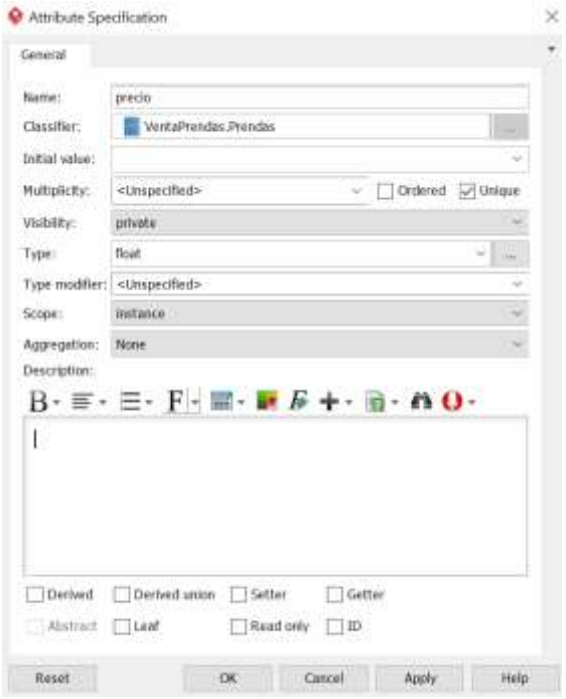
Declaración atributo “temporada”(String):



Declaración atributo “genero”(String):

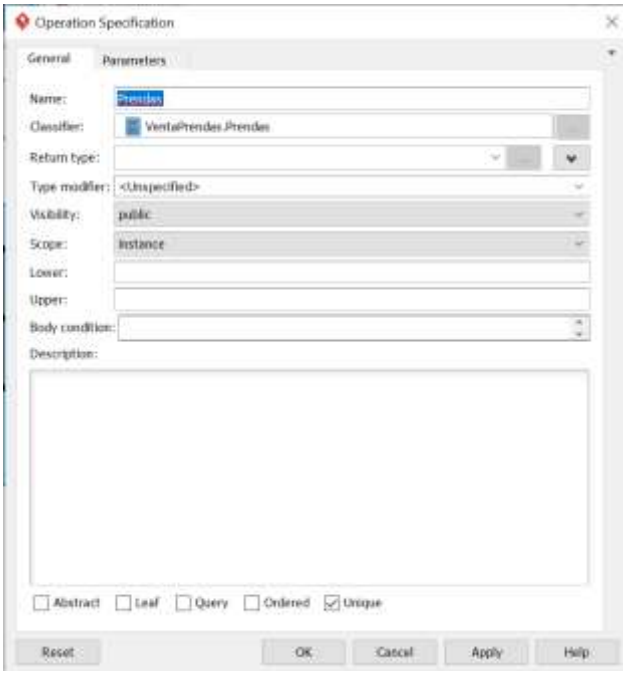


Declaración atributo “precio”(float):

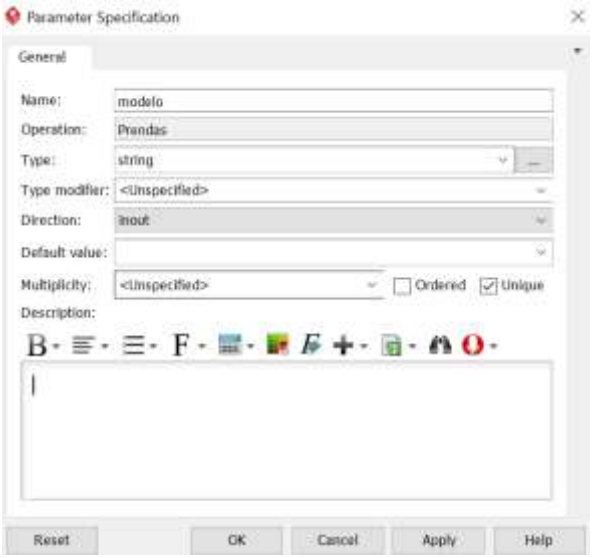


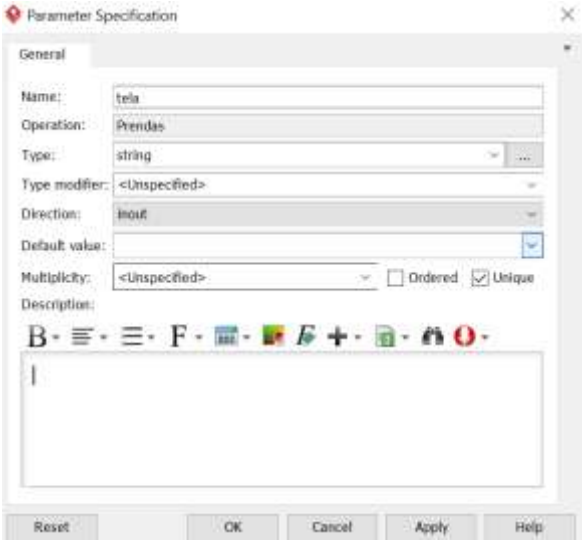
Declaración métodos:

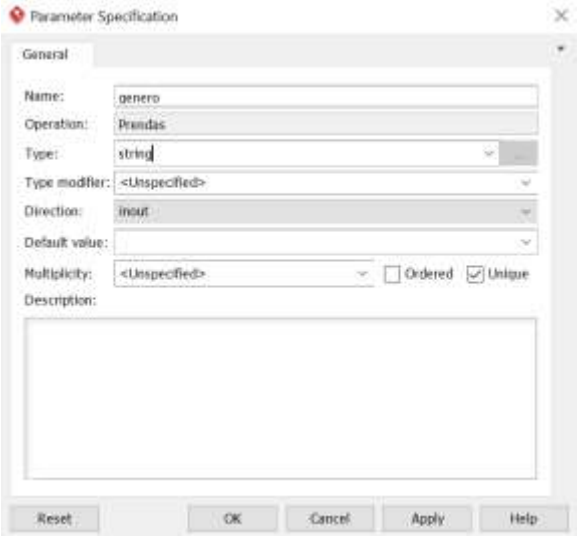
Declaración constructor:

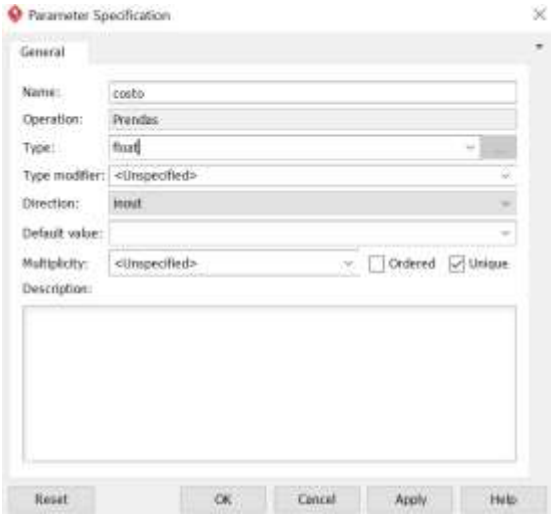


Declaración parámetros del constructor:









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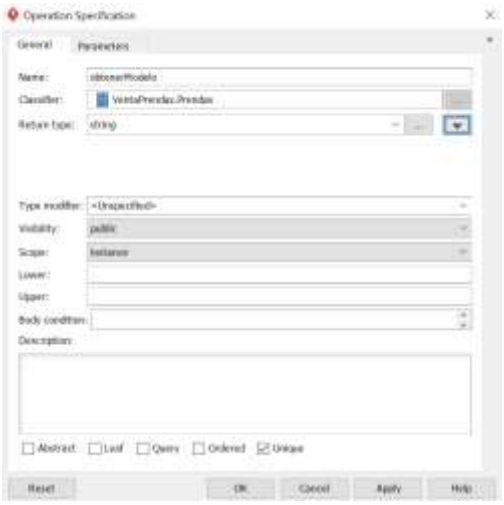
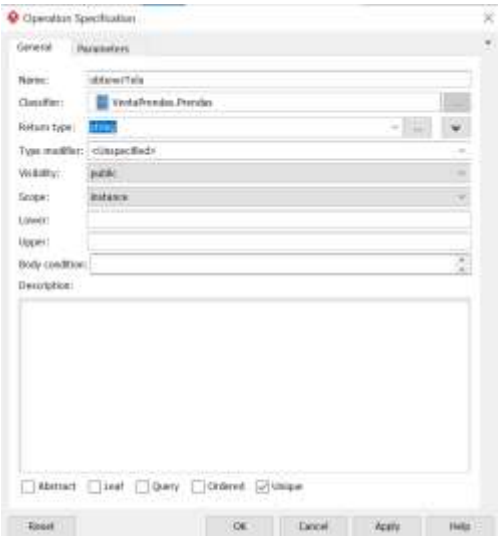
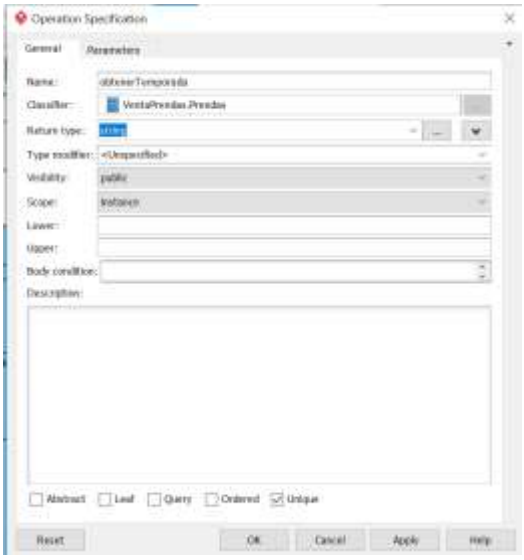
Declaración operación obtenerModelo:



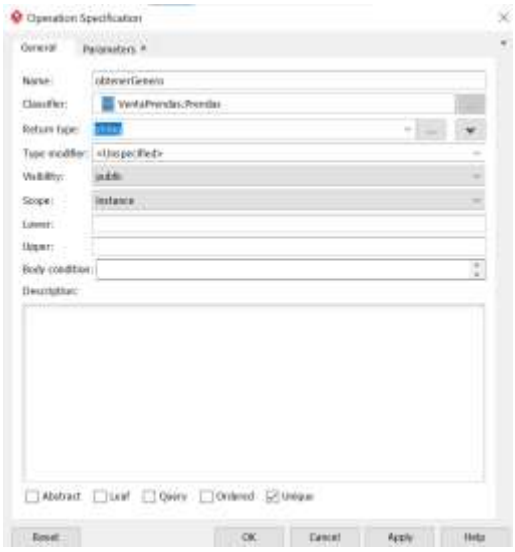
Declaración operación obtenerTela:



Declaración operación obtenerTemporada:

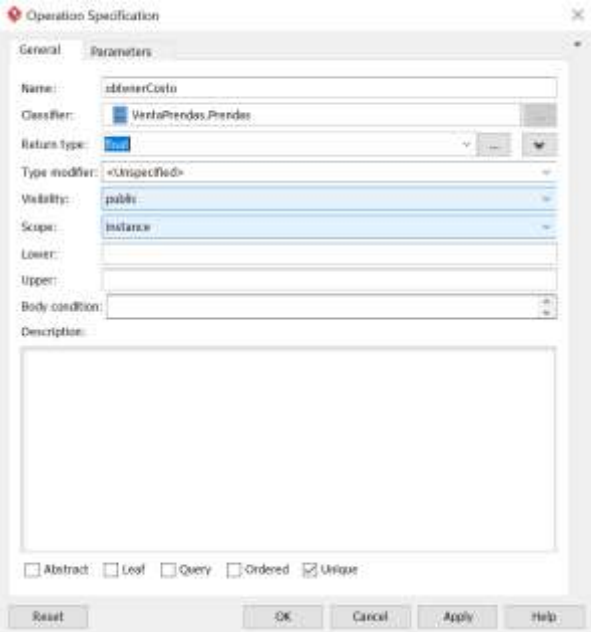


Declaración operación obtenerGenero:

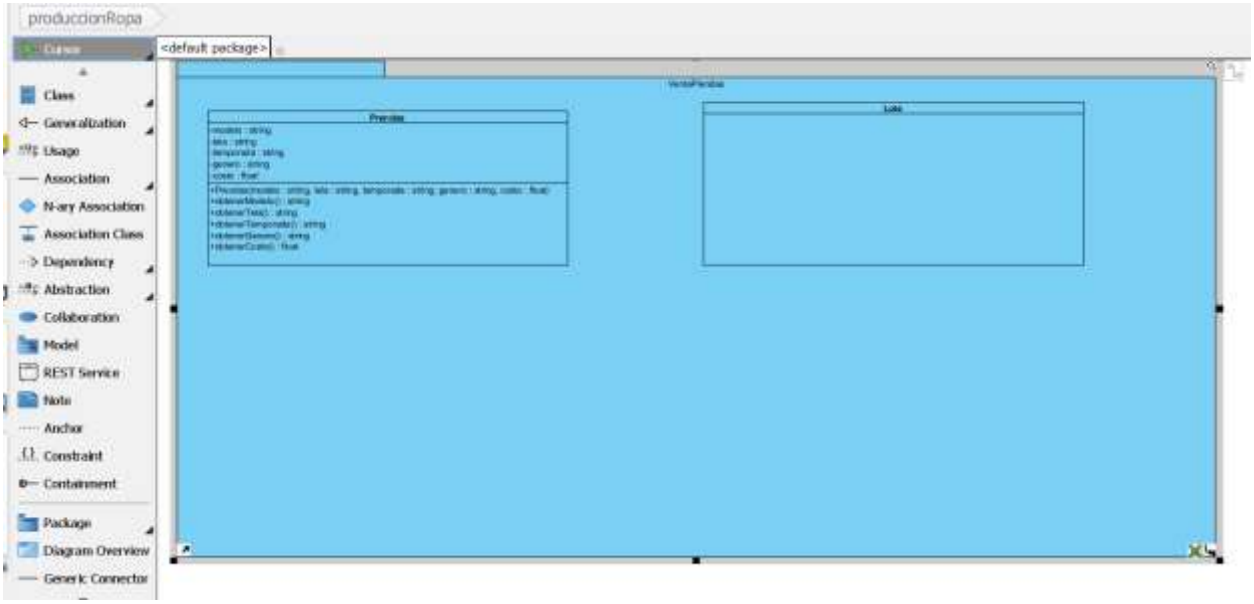


Orizaba, Ver.

Declaración operación obtenerCosto:

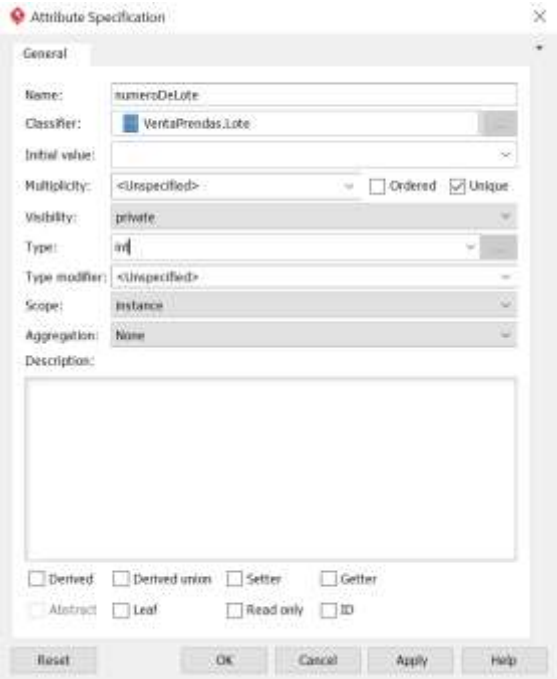


Creación de clase “lote”:

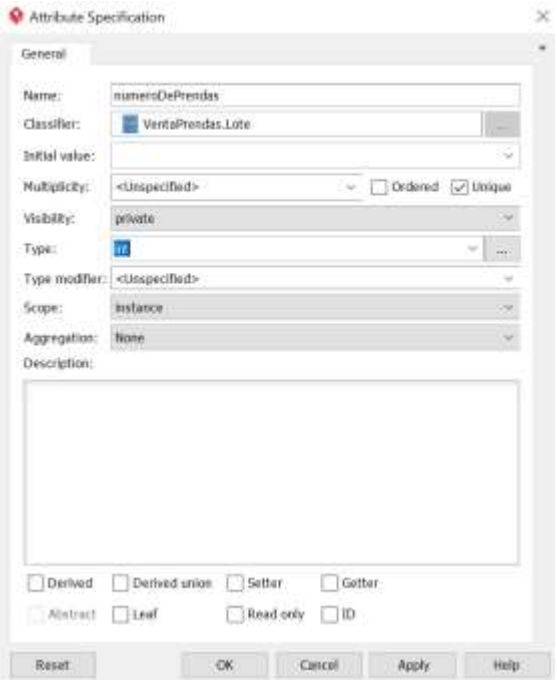


Declaración de Atributos:

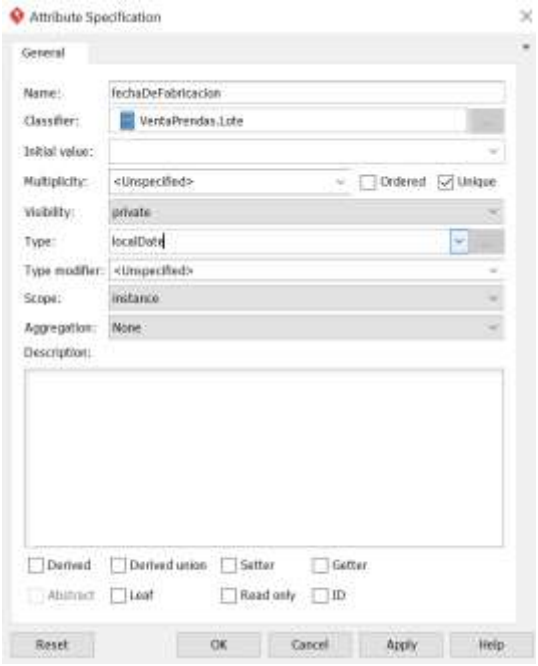
Declaración atributo “numeroDeLote”(int):



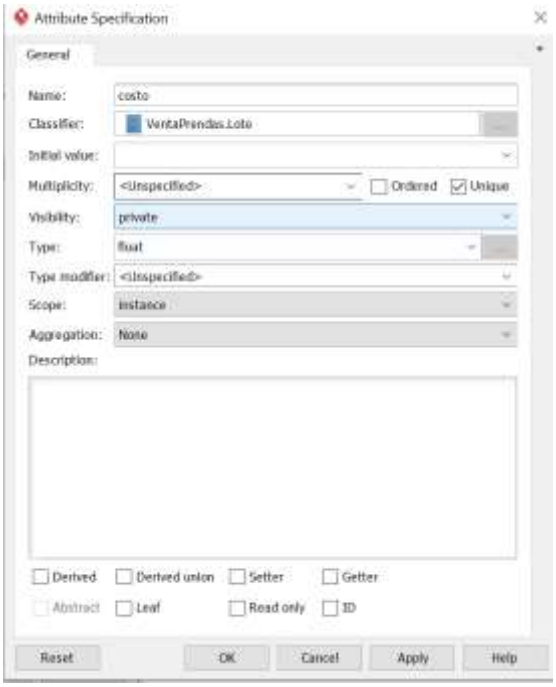
Declaración atributo “numeroDePrendas”(int):



Declaración atributo “fechaDeFabricacion”(localDate):

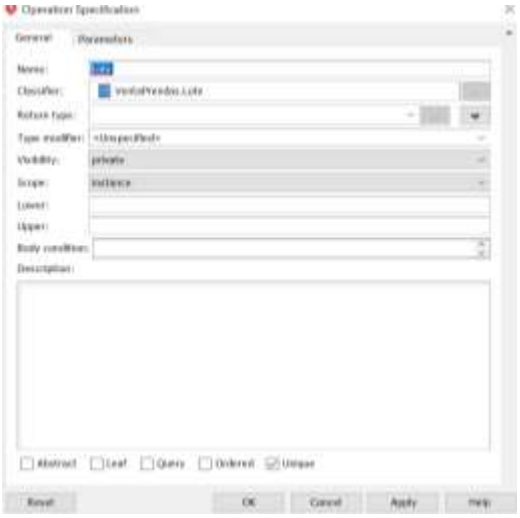


Declaración atributo “costo”(float):

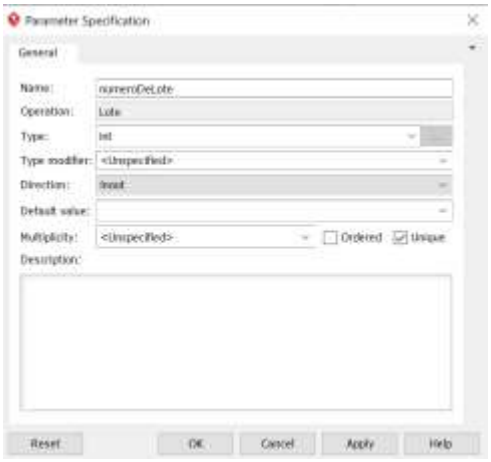


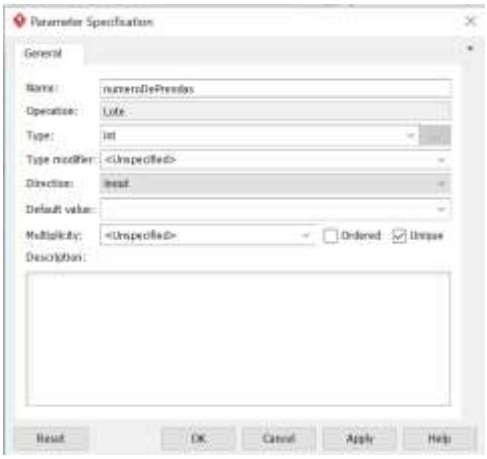
Declaración métodos:

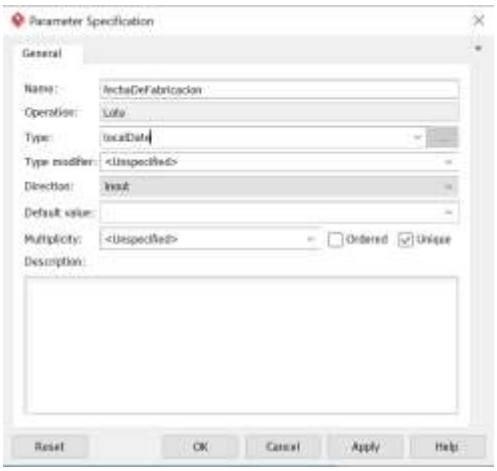
Declaración de constructor:

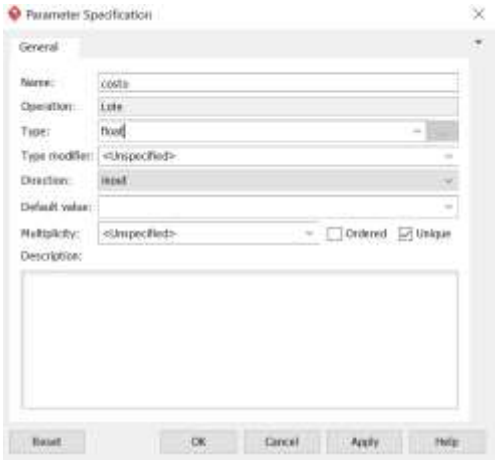


Declaración parámetros constructor:

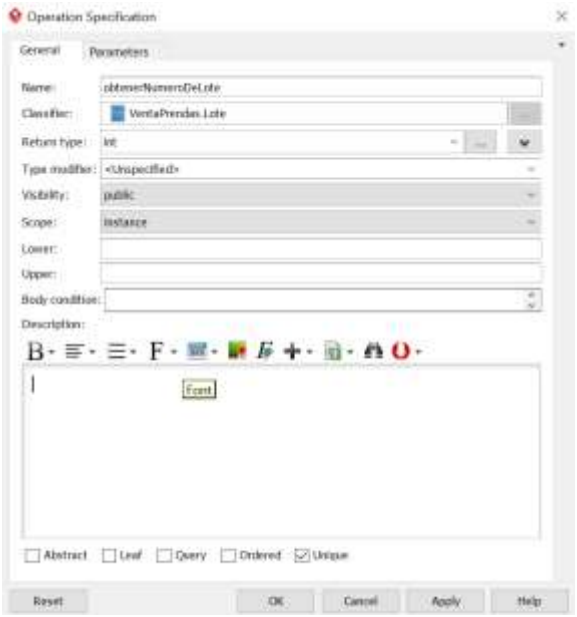




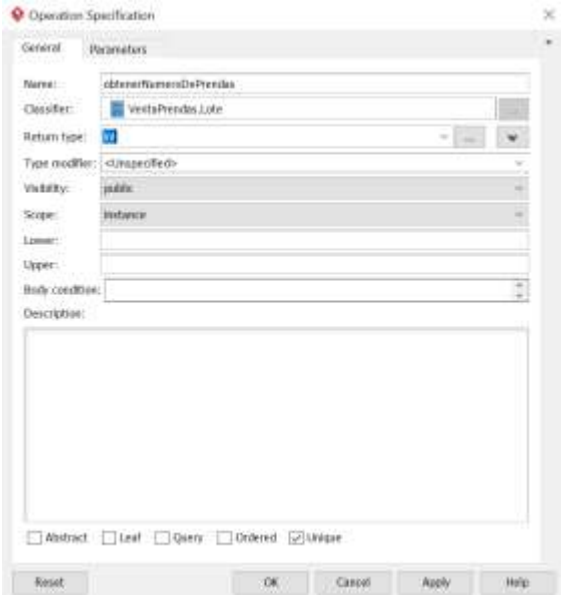




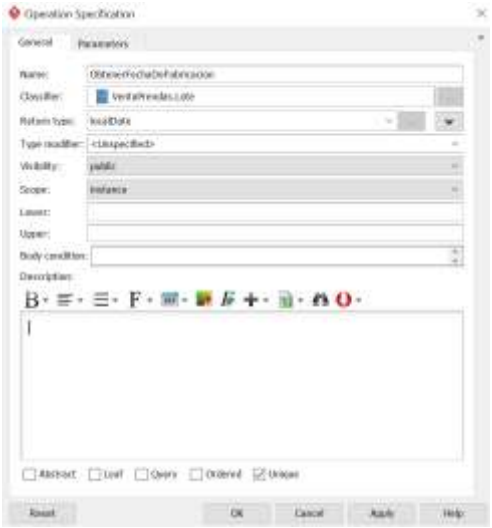
Declaración operación obtenerNumeroDeLote:



Declaracion operación obtenerNumeroDePrendas:

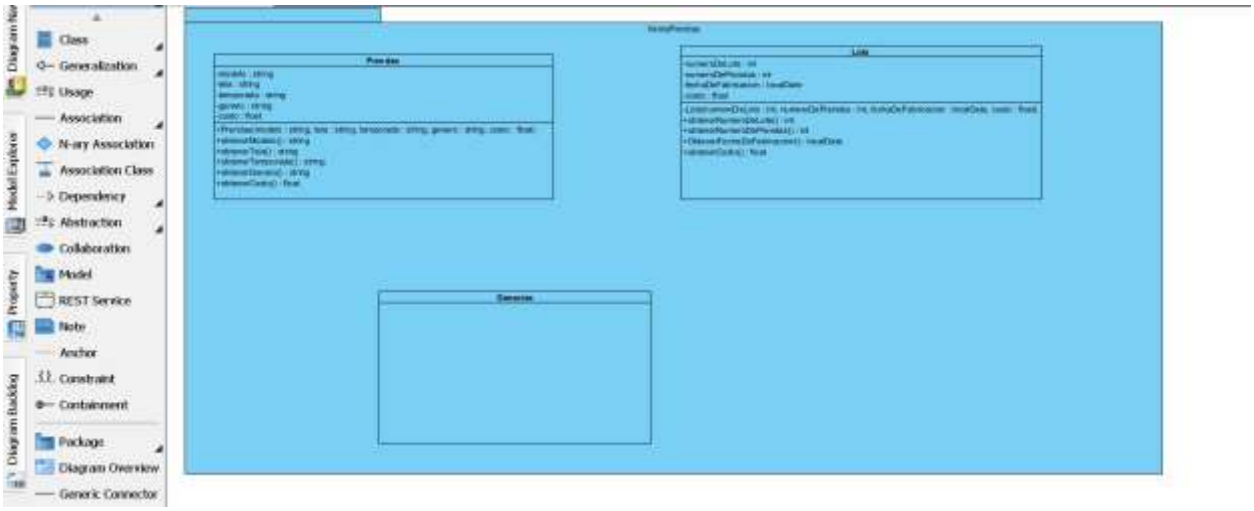


Declaración operación obtenerFechaDeFabricacion:



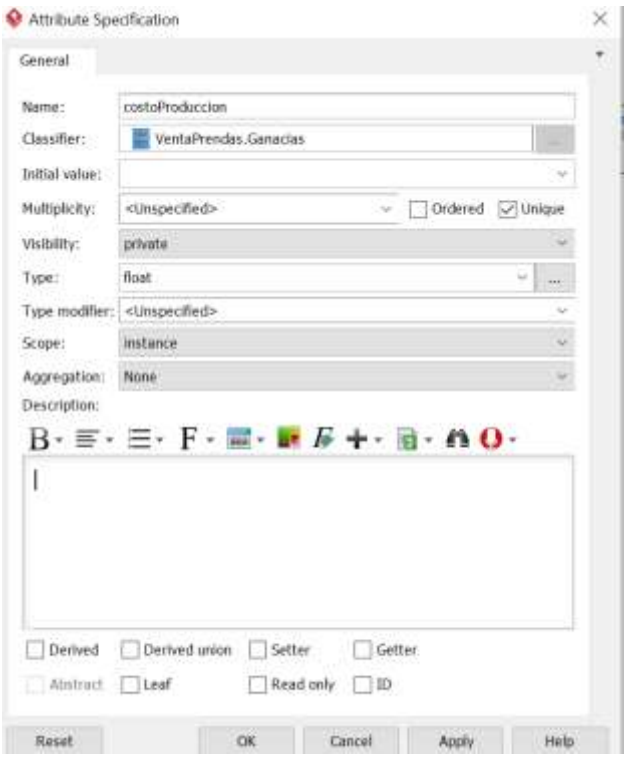
Declaración operación obtenerCosto:

Creación de clase “Ganancias”:

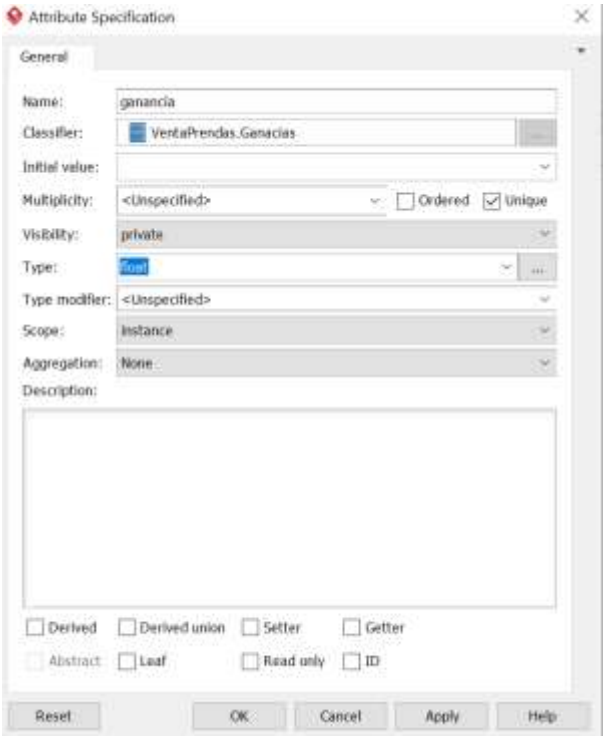


Declaración de Atributos:

Declaración atributo “costoProduccion”(float):

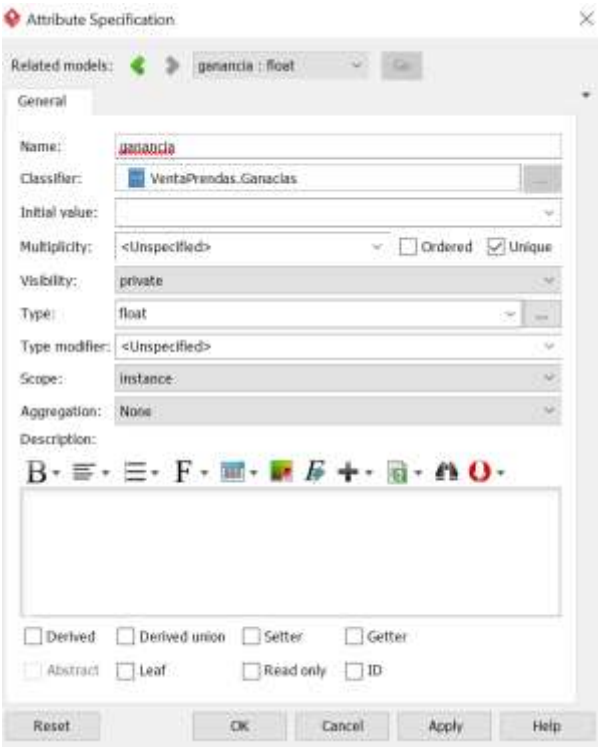


Declaración atributo “ganancia”(float):



Declaración métodos:

Declaración método constructor:



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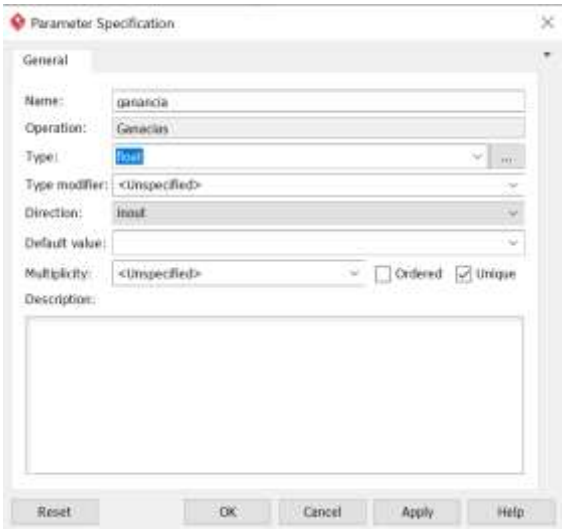
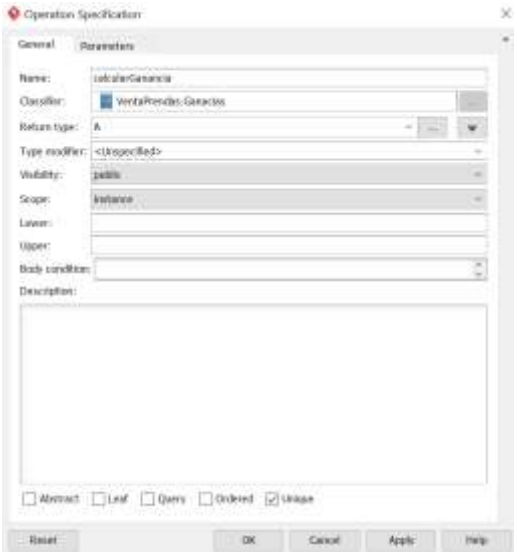
Declaracion parámetros constructor:



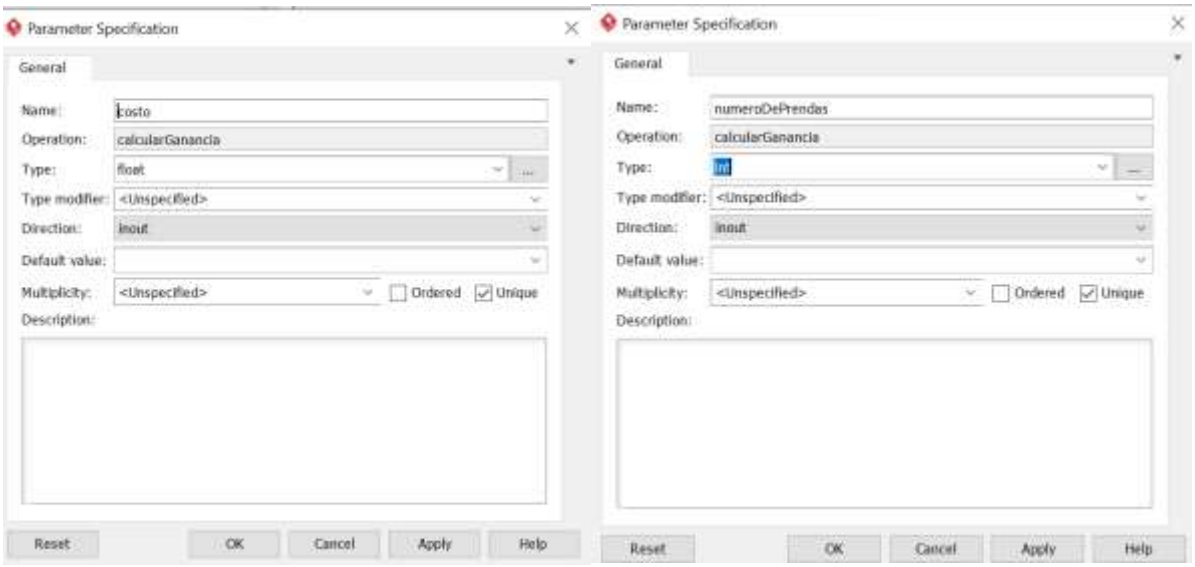
Declaración método obtenerCosto:

Orizaba, Ver.

Declaración metodo calcularGanancia:



Parámetros calcular ganancia:

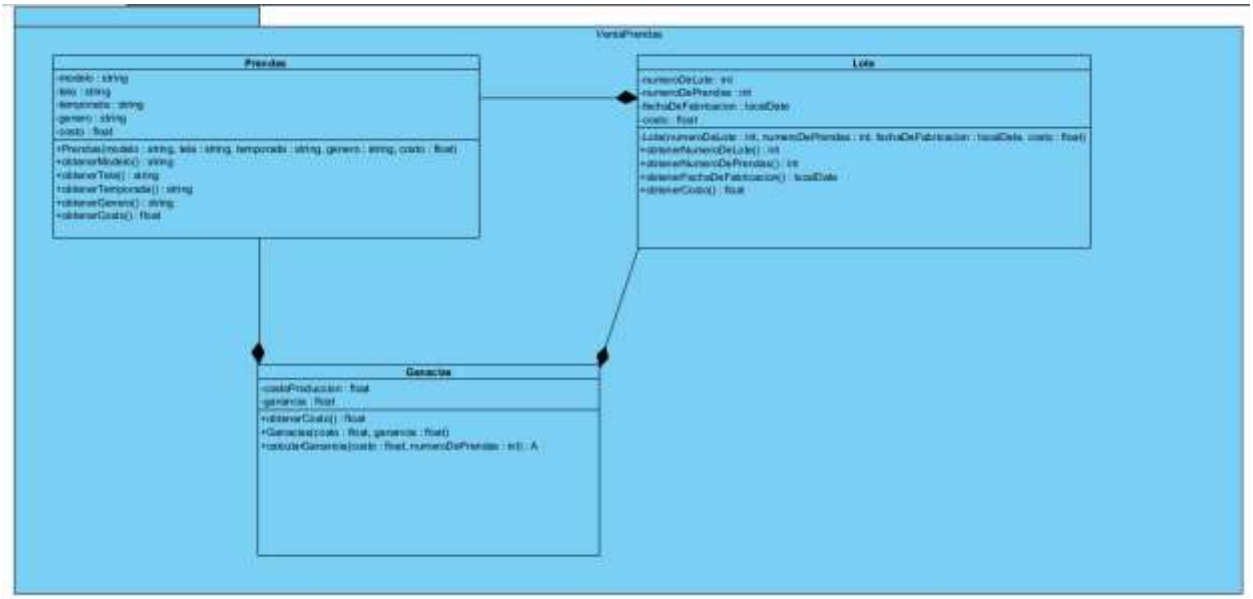


Relaciones clases:

Para el primer caso costo es completamente dependiente de las clases “Prendas” y “Lote” ya que sin esta no tendría caso como calcular la ganancia de ambas.

Por lo cual elegiremos la opción de composición ya que es completamente dependiente del otro;

Para el segundo caso el lote es una extensión de varias prendas por lo cual seria inútil que hubiera un lote sin prendas.



Ejercicio 2:

Una empresa agrícola ha decidido sistematizar el control de la producción frutal que tiene, para lo cual de cada fruta se describe su nombre, la extensión del terreno (hectáreas) dedicadas a su cultivo y producción, el tiempo de cosecha (Cada fruta puede tener 1 o más periodos de cosecha), la cantidad estimada a cosechar por hectárea en cada periodo (cada periodo por condiciones de estación climática puede tener diferentes cantidades estimadas), costo de producción promedio por tonelada y el precio de venta promedio por tonelada. Por cada fruta se puede agregar o eliminar un periodo de cosecha, se puede obtener el costo total de un periodo, así como las ganancias estimadas en un periodo.

Análisis:

ATRIBUTO	TIPO DE DATO	CARDINALIDAD	OBLIGATORIEDAD
Nombre	String	1	Si
AreaDelTerreno	float	1	Si
Periodo	Periodo		Si
CostoDeProduccion	float		Si
CostoDeVenta	float		Si

frutas

ATRIBUTO	TIPO DE DATO	CARDINALIDAD	OBLIGATORIEDAD
temporada	String	1	si
cantidadPorHectarea	int	1	si
tiempodecosecha	float	1	Si

Periodo

frutas

OPERACION	TIPO DE DATO	ARGUMENTO	ALCANCE
contructor		Nombre, areaDelTerreno, periodo, CostoDeProduccion,CostoDeVenta	publico
ObtenerNombre	String		public
ObtenerAreaDelTerreno	float	Largo,Ancho	public

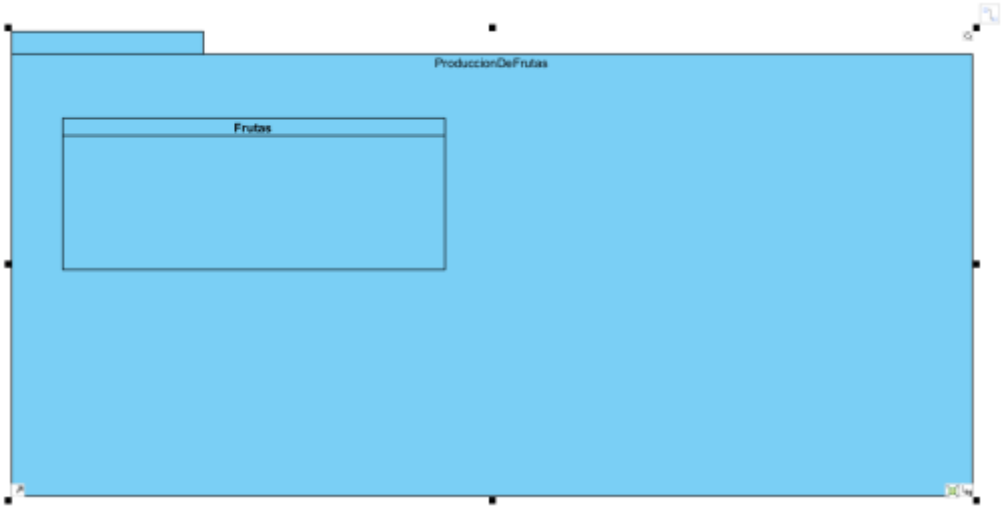
ObtenerPeriodos	Periodo[]		public
ObtenerCostoDeProduccion	float		public
ObtenerCostoDeVenta	float		public
CalcularGanancias	float	CostoDeProduccion, CostoDeVenta,Periodo	public
agregarPeriodo	void		public
eliminarPeriodo	void		public

Periodo

OPERACION	TIPO DE DATO	ARGUMENTO	ALCANCE
contructor		Temporada,cantidadPorHectarea,TiempoDeCosecha	publico
ObtenerTemporada	String		public
ObtenerCantidadPorHectarea	float	Largo,Ancho	public
TiempoDeCosecha	Periodo[]		public

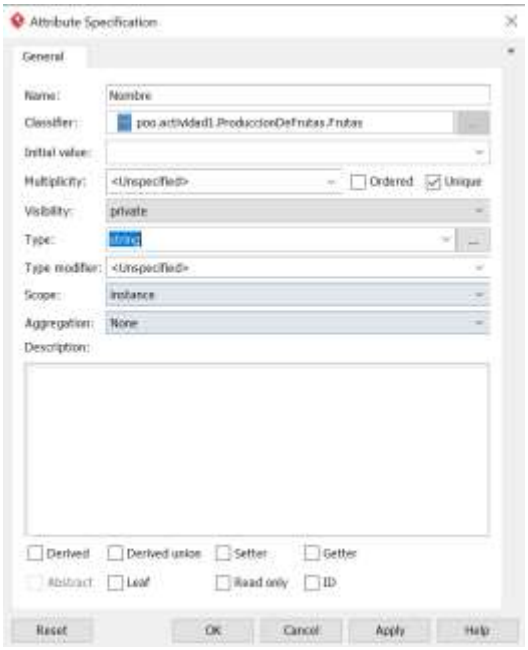
Diagrama uml:

Creación de clase “Fruta”:

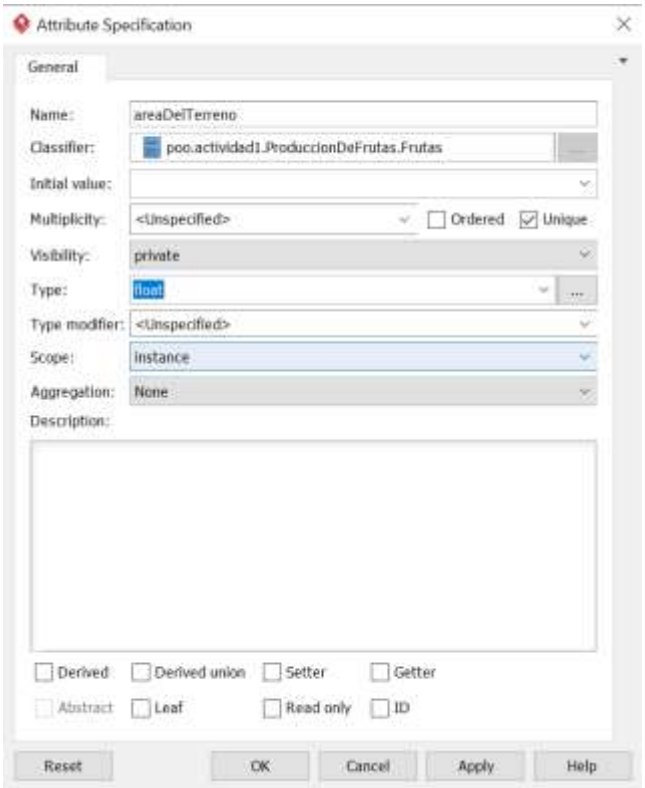


Declaración atributos:

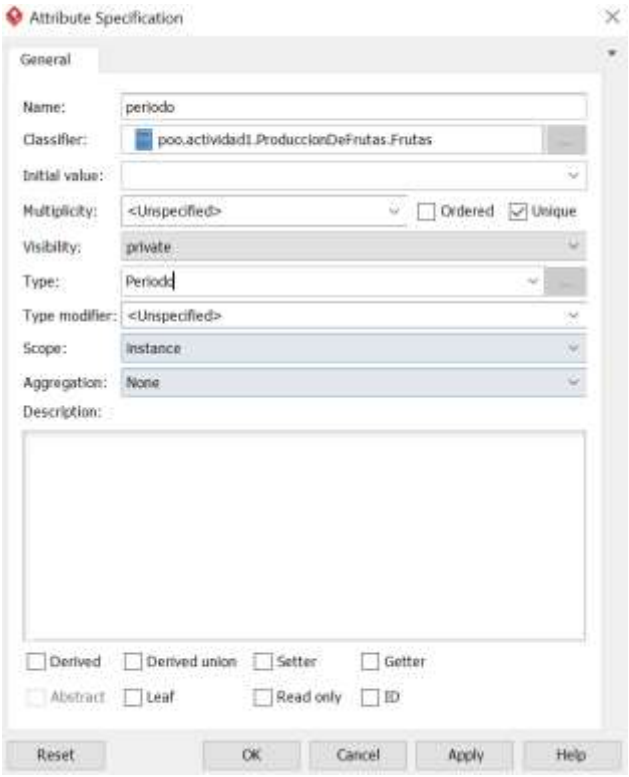
Declaración atributo “nombre” (String):



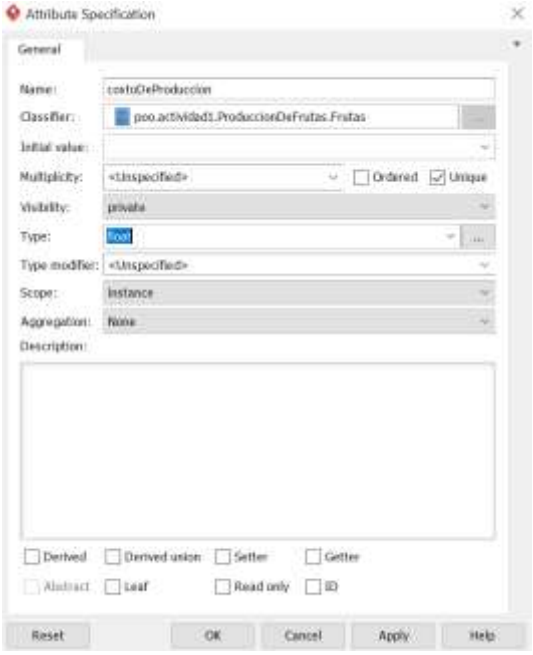
Declaración atributo “areaDelTerreno” (float):



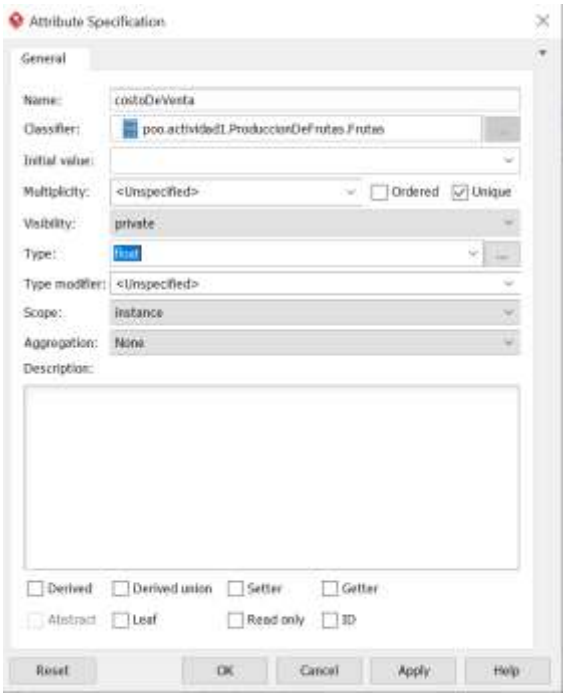
Declaración atributo “Periodo” (Periodo):



Declaración atributo “costoDeProduccion” (float):

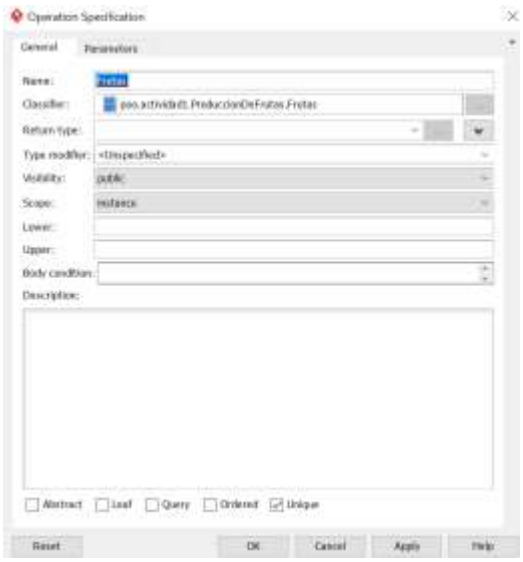


Declaración atributo “costoDeVenta” (float):

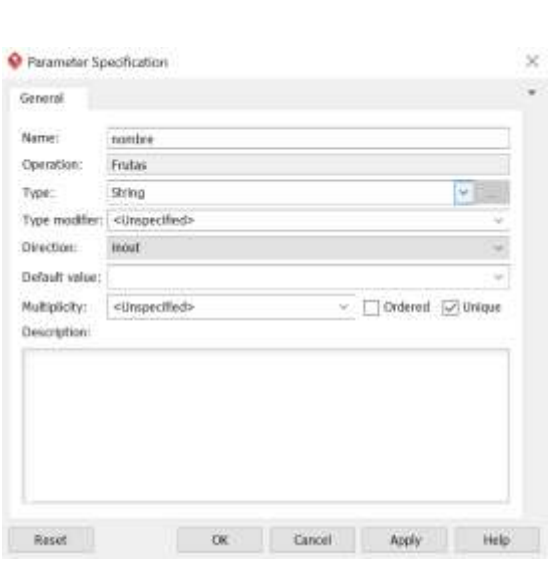


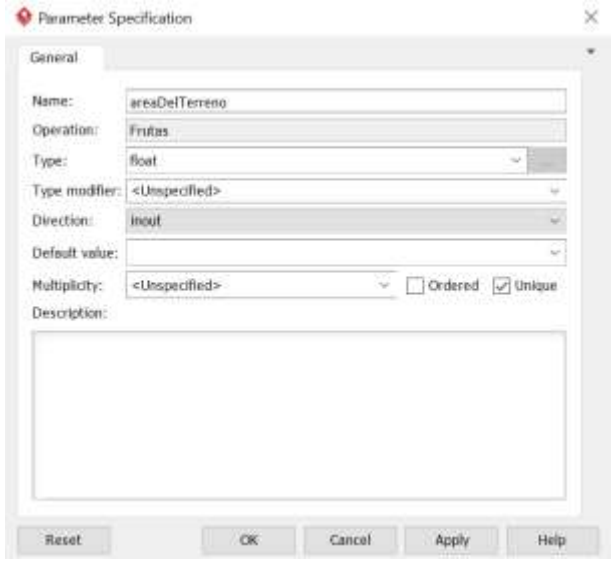
Declaración métodos:

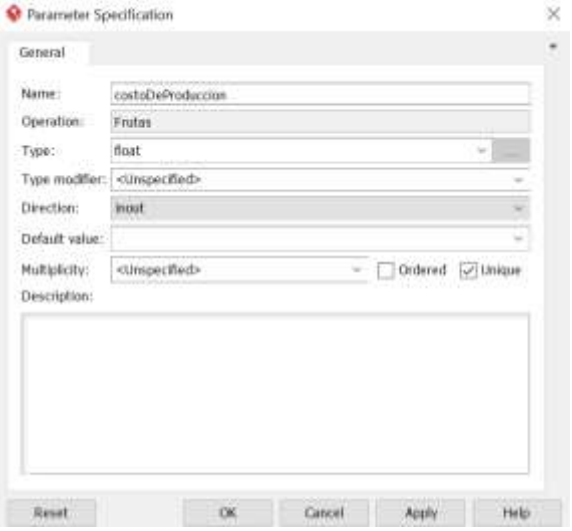
Declaración constructor:

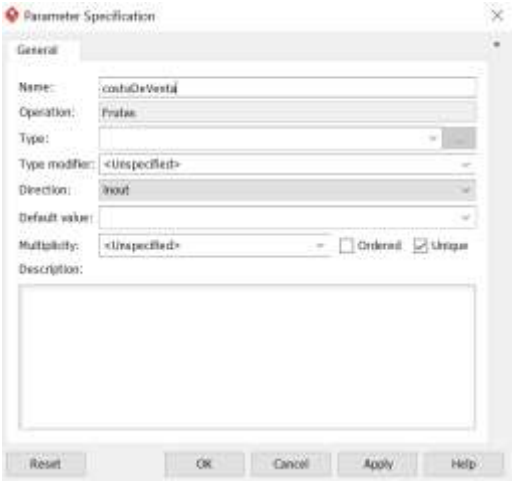


Declaración parámetros constructor:

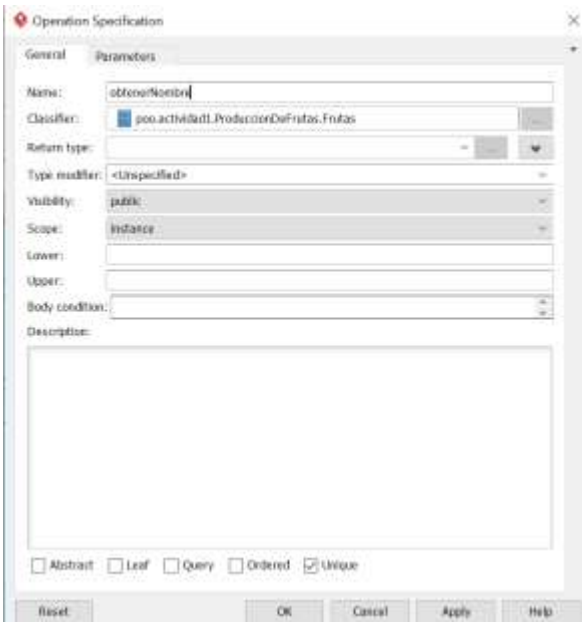




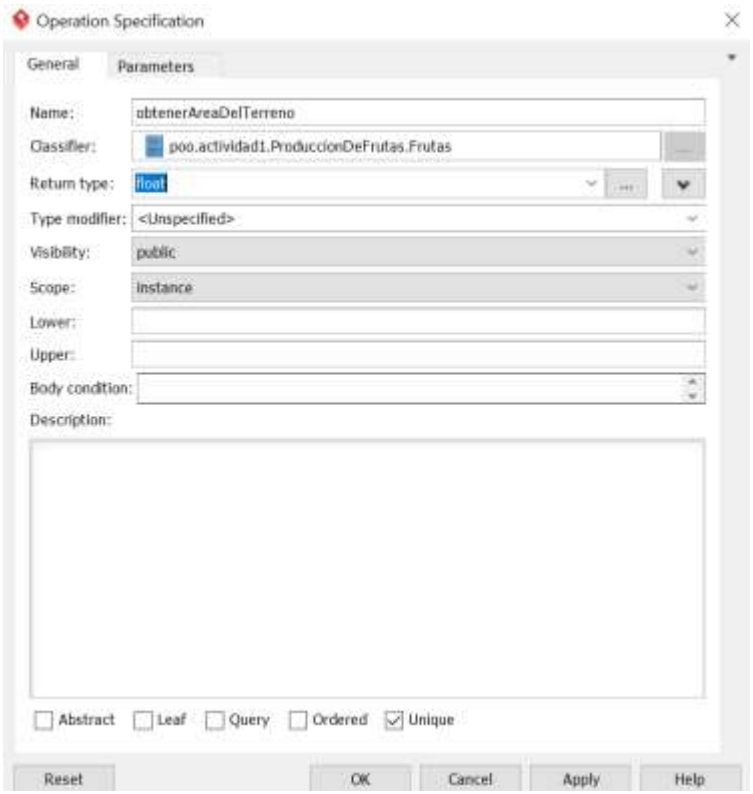




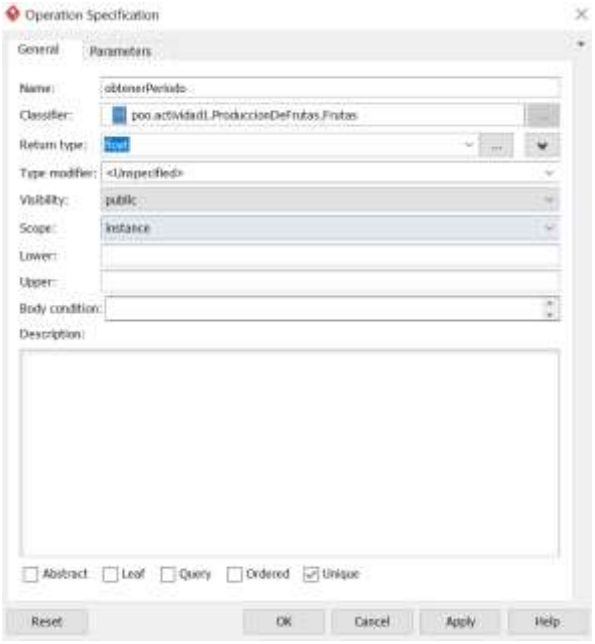
Declaración metodo “ObtenerNombre” (String):



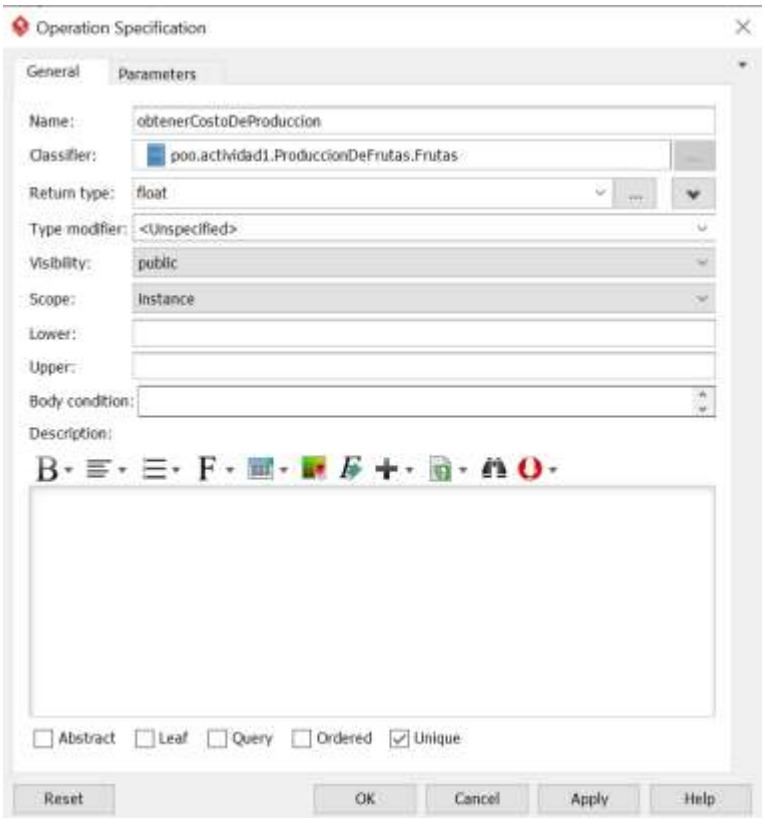
Declaración método “obtenerAreaDelTerreno” (float):



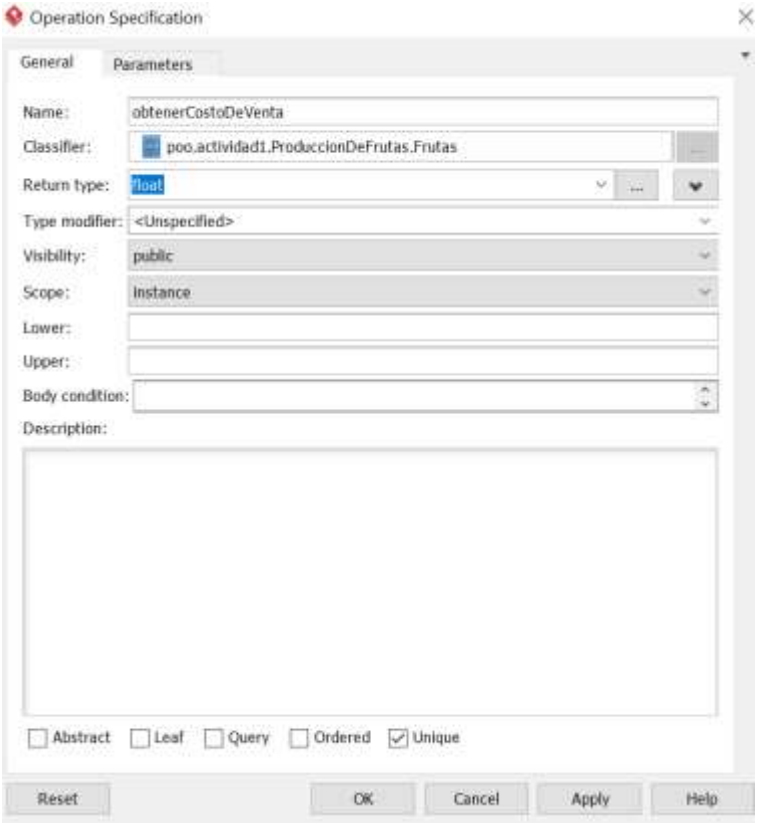
Declaración método “ObtenerPeriodo” (Periodo):



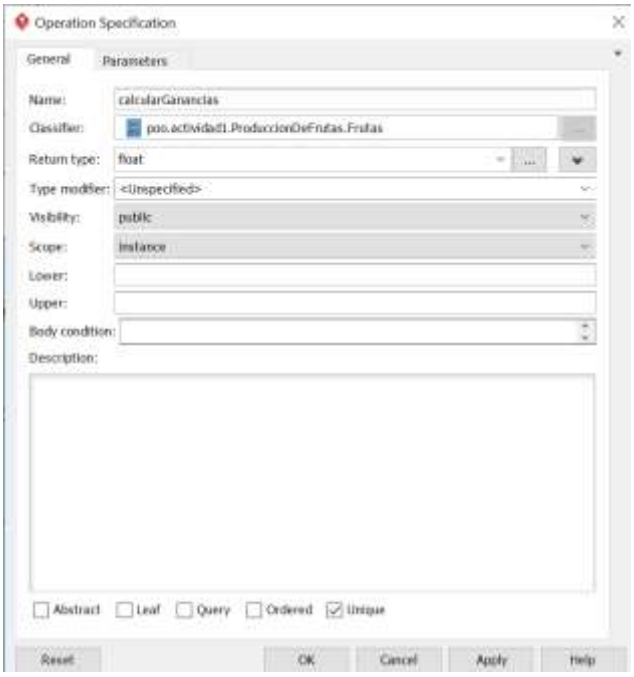
Declaración método “ObtenerCostoDeProduccion” (float):



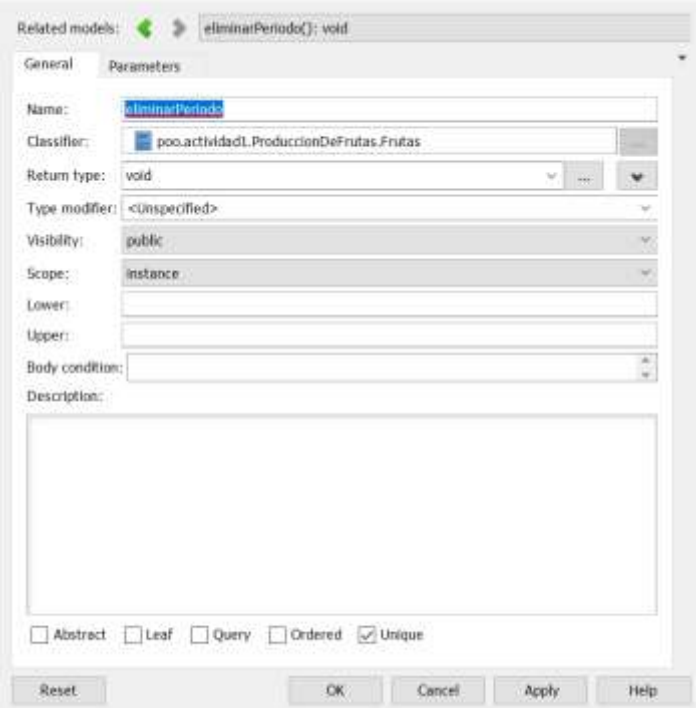
Declaración método “ObtenerCostoDeVenta” (float):



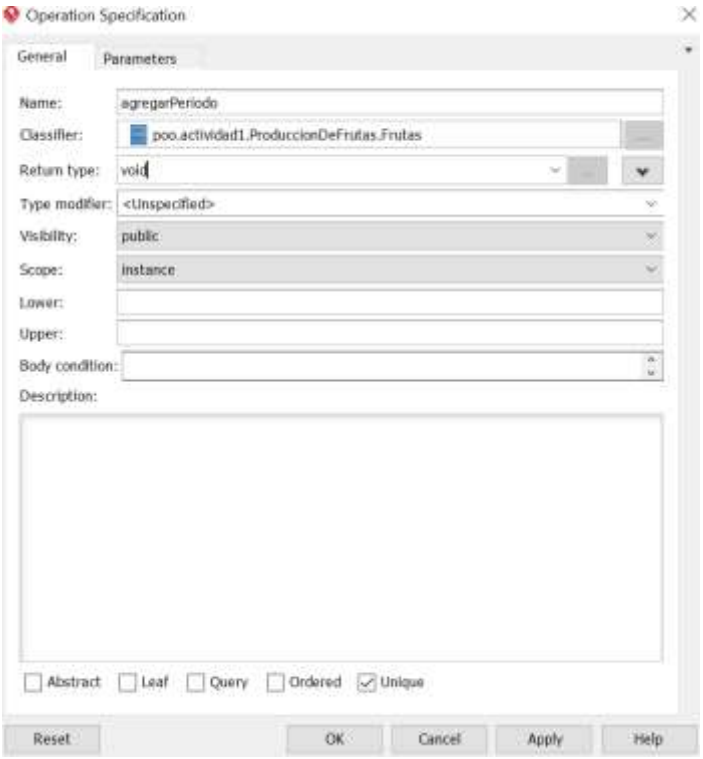
Declaración método “calcularGanancias” (float):



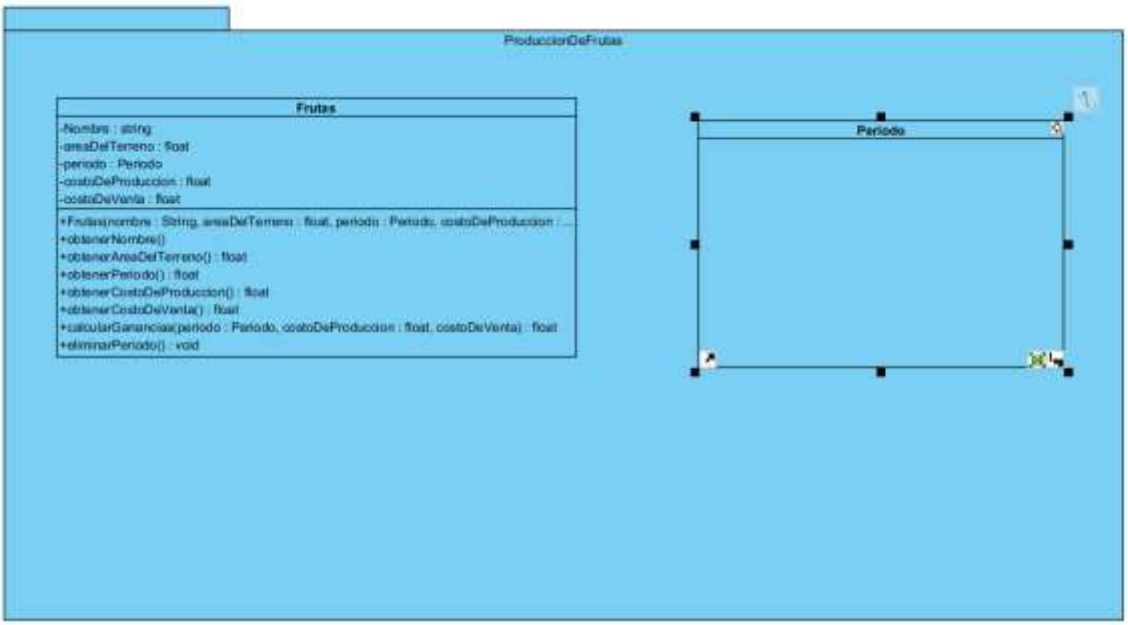
Declaración método “eliminarPeriodo” (void):



Declaración método “agregarPeriodo” (void):

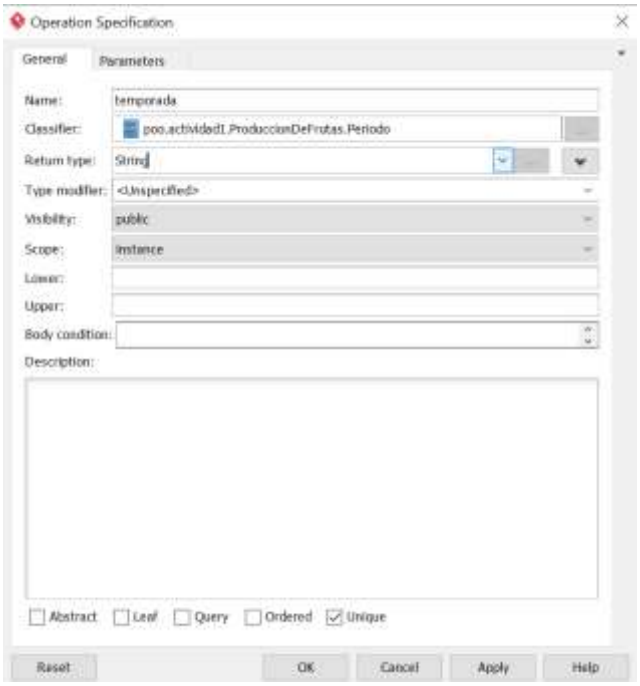


Creación de clase “Periodo”:

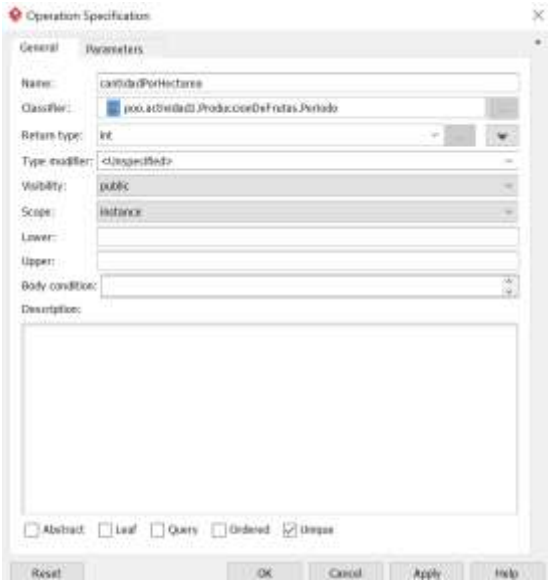


Declaración atributos:

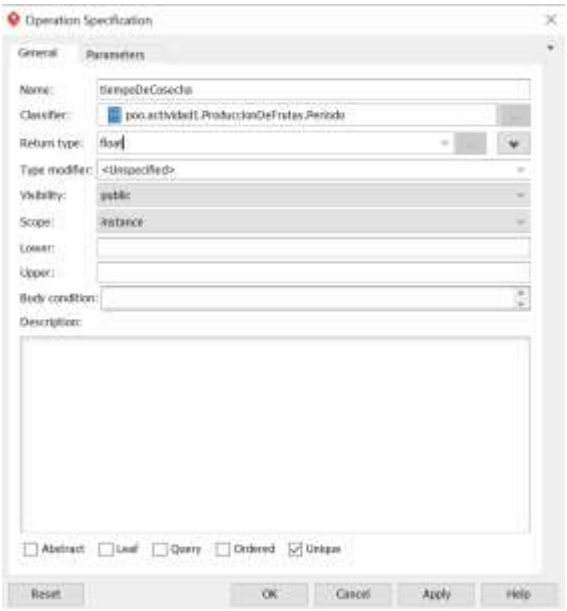
Declaración atributo “Temporada”:



Declaración atributo “cantidadPorHectarea”:

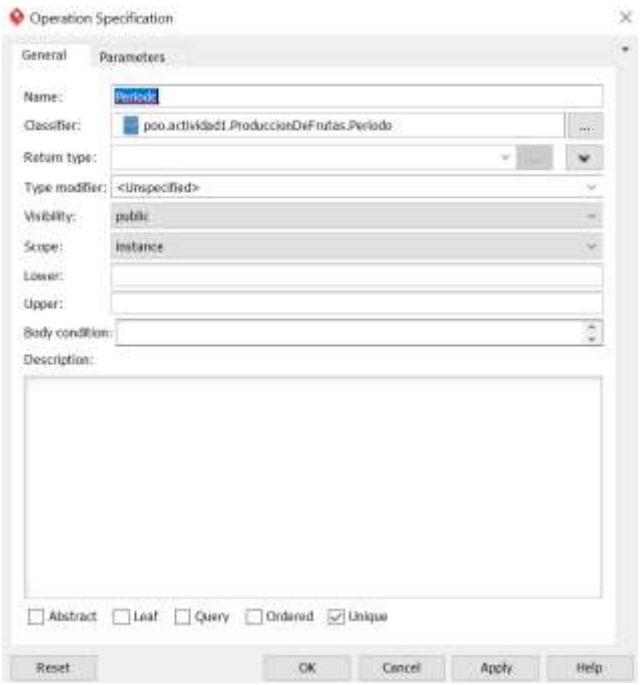


Declaración atributo “tiempoDeCosecha”:

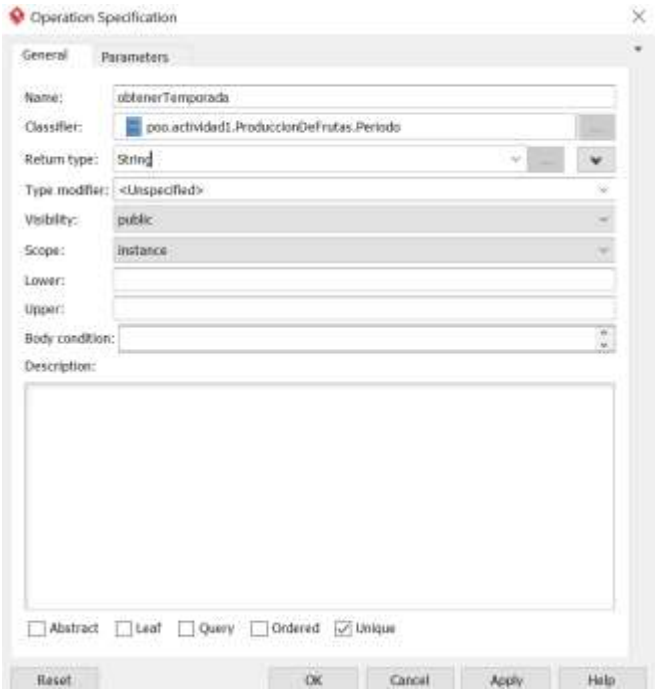


Declaración métodos:

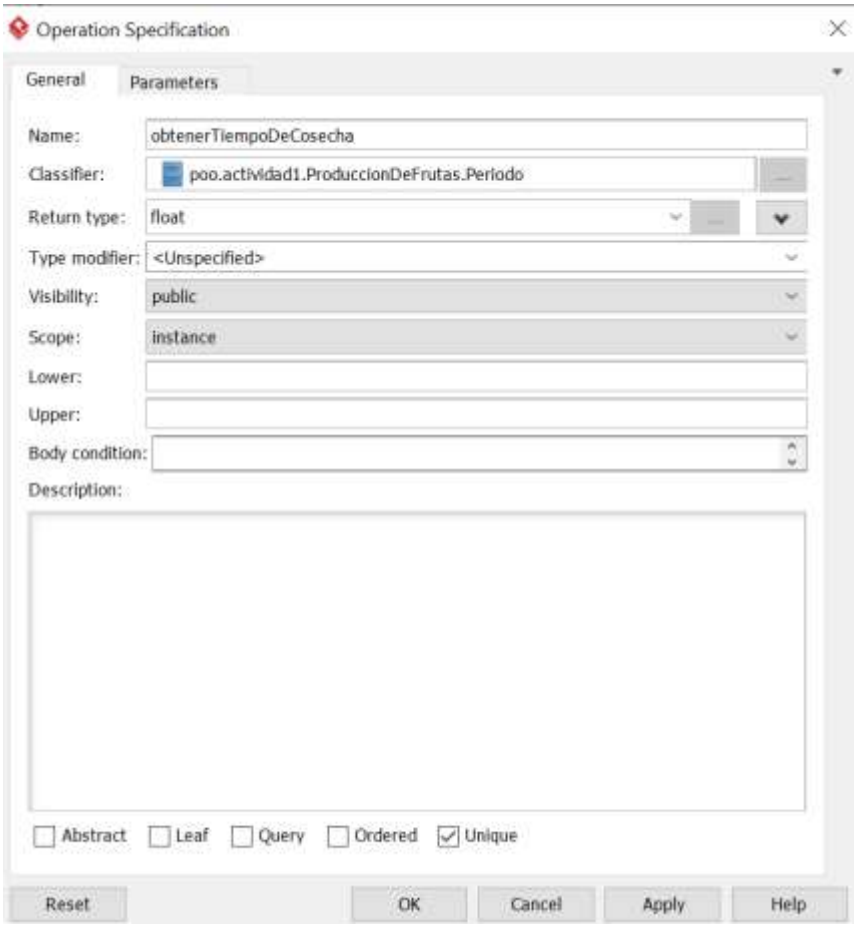
Declaración constructor:



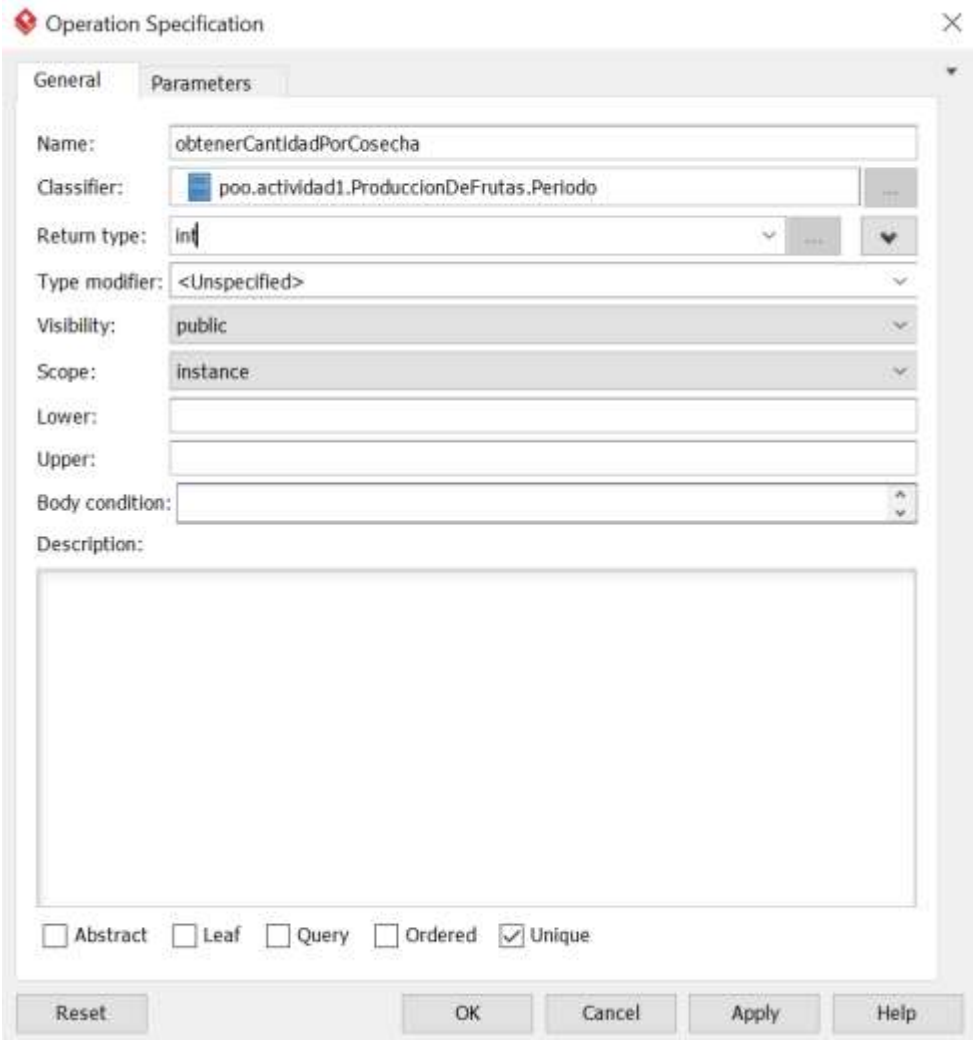
Declaración método obtenerTemporada:



Declaración método obtenerTiempoDeCosecha:

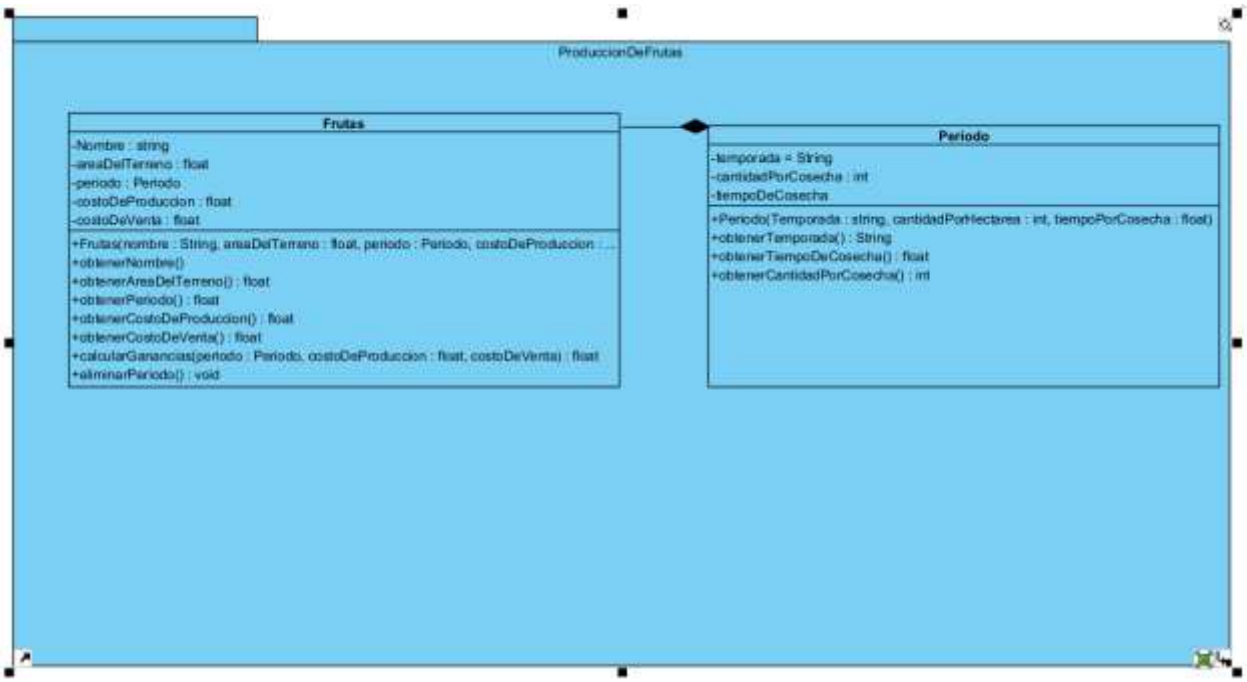


Declaración método obtenerCantidadPorCosecha:



Relación de clases:

Es una composición ya que el periodo es completamente dependiente.



Ejercicio 3:

Problemática:

El observatorio astronómico de San Pedro Mártir, de acuerdo a sus observaciones necesita un catálogo de los cuerpos celestes descubiertos para lo cual de cada cuerpo celeste se describe la ubicación en el espacio estelar en relación a las posiciones geográficas espaciales (expresado en grado de latitud (norte o sur) y grados de longitud (este o oeste)) periodo de ubicación (mes(es) donde se observó en dicha posición), distancia aproximada a la tierra (años luz o km/segundos), el nombre que se le asigno, la composición del cuerpo estelar (gases, solidos, líquidos). De cada cuerpo celeste se puede obtener el desplazamiento con respecto a otra observación del mismo cuerpo en un periodo distinto.

Análisis:

CuerpoCeleste

ATRIBUTO	TIPO DE DATO	CARDINALIDAD	OBLIGATORIEDAD
NOMBRE	String	1	Sí
COMPOSICION	String	1	Sí
DISTANCIAATIERRA	double	1	Sí
UNIDADDISTANCIA	String	1	Sí

Observacion

ATRIBUTO	TIPO DE DATO	CARDINALIDAD	OBLIGATORIEDAD
FECHAOBSERVACION	Date	1	Sí
PERIODOMESES	String	1	Sí

PosicionEspacial

ATRIBUTO	TIPO DE DATO	CARDINALIDAD	OBLIGATORIEDAD
LATITUDGRADOS	double	1	Sí
DIRECCIONLATITUD	String	1	Sí
LONGITUDGRADOS	double	1	Sí
DIRECCIONLONGITUD	String	1	Sí

- **Operaciones para clase "CuerpoCeleste":**

Operación	Tipo de dato	Argumentos	Alcance
Constructor		nombre, composicion, distanciaATierra, unidadDistancia	público
calcularDesplazamiento	double	obs1: Observacion, obs2: Observacion	público
agregarObservacion	void	observacion: Observacion	público
obtenerNombre	String		público

Operaciones para clase "Observación":

OPERACIÓN	TIPO DE DATO	ARGUMENTOS	ALCANCE

CONSTRUCTOR		fechaObservacion, periodoMeses, posicion: PosicionEspacial	público
OBTENERFECHA	Date		público
OBTENERPOSICION	PosicionEspacial		público

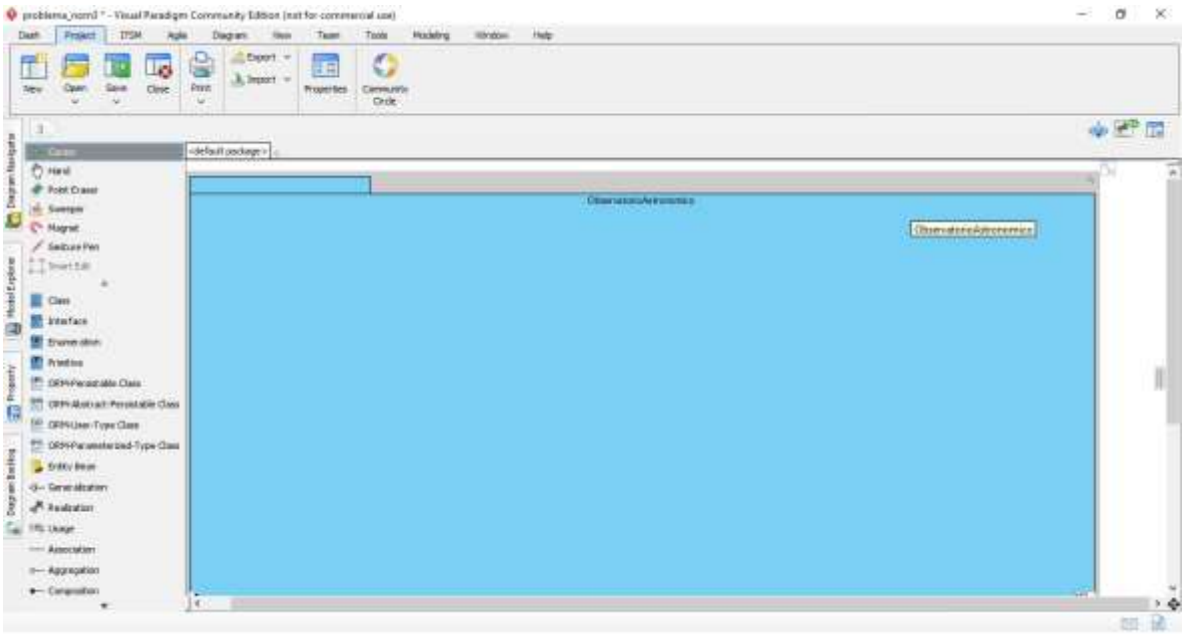
Nota Elihu: El constructor no lleva tipo de dato en la columna "Tipo de dato" porque es especial, “ siempre retorna una instancia de la clase que está construyendo”.

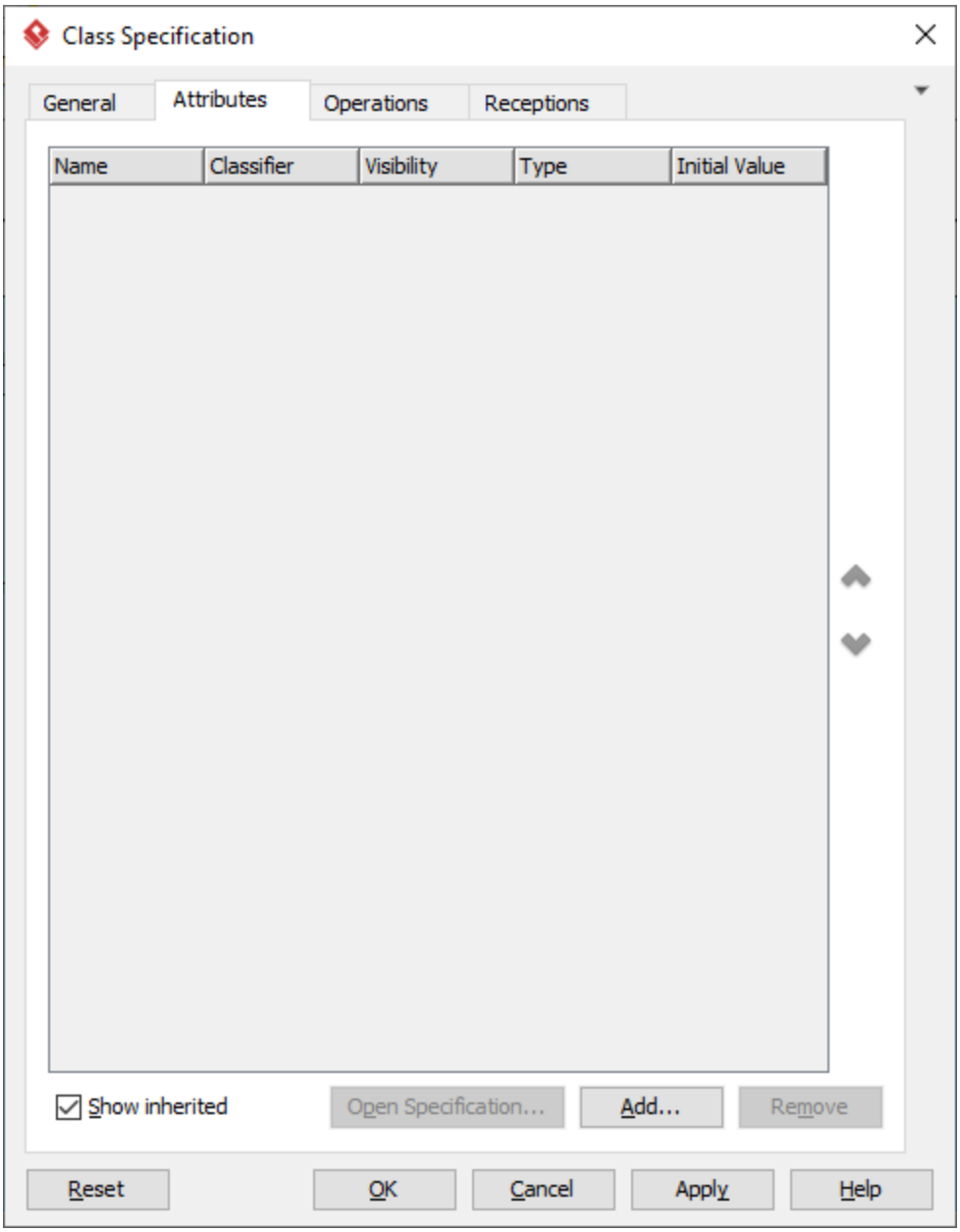
Operaciones para clase "PosicionEspacial":

OPERACIÓN	TIPO DE DATO	ARGUMENTOS	ALCANCE
CONSTRUCTOR		latitudGrados, direccionLatitud, longitudGrados, direccionLongitud	público
CALCULARDISTANCIA	double	otraPosicion: PosicionEspacial	público

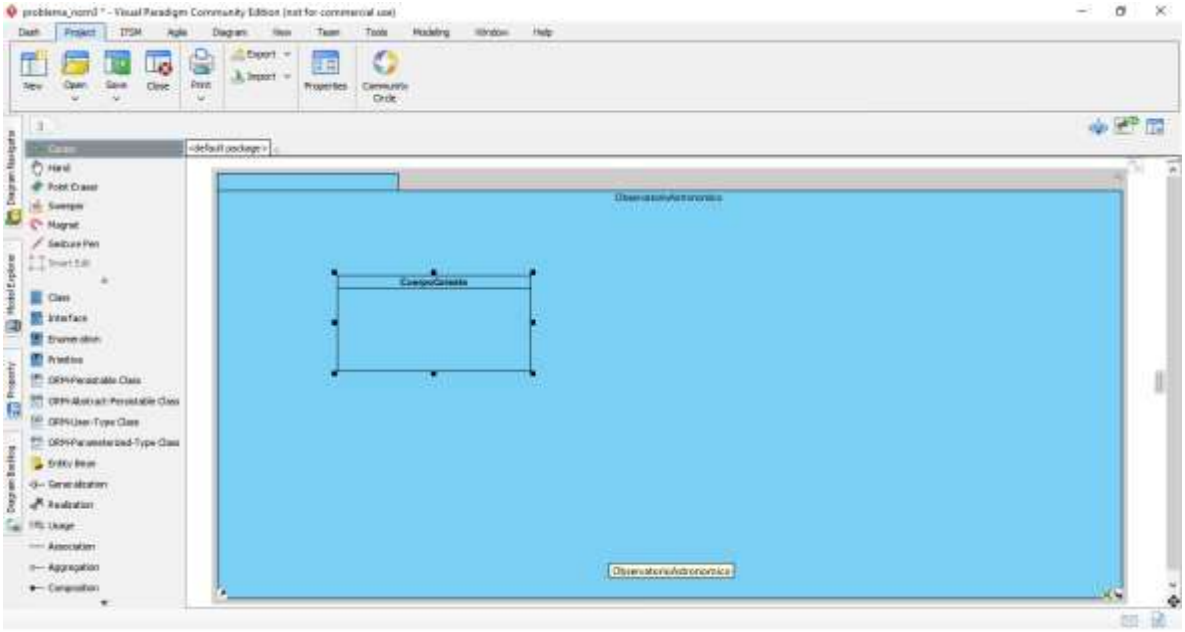
Diagrama Uml:

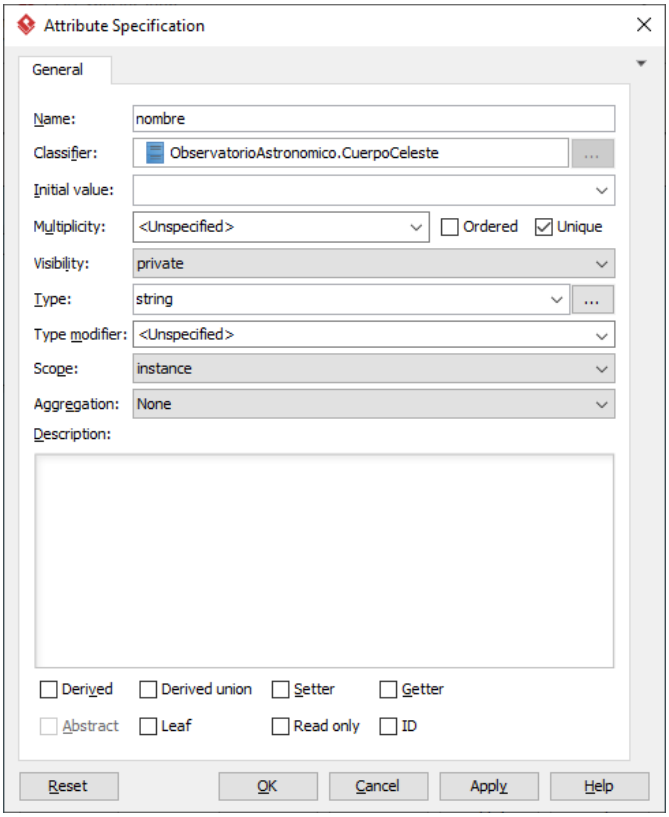
Creación de la clase:

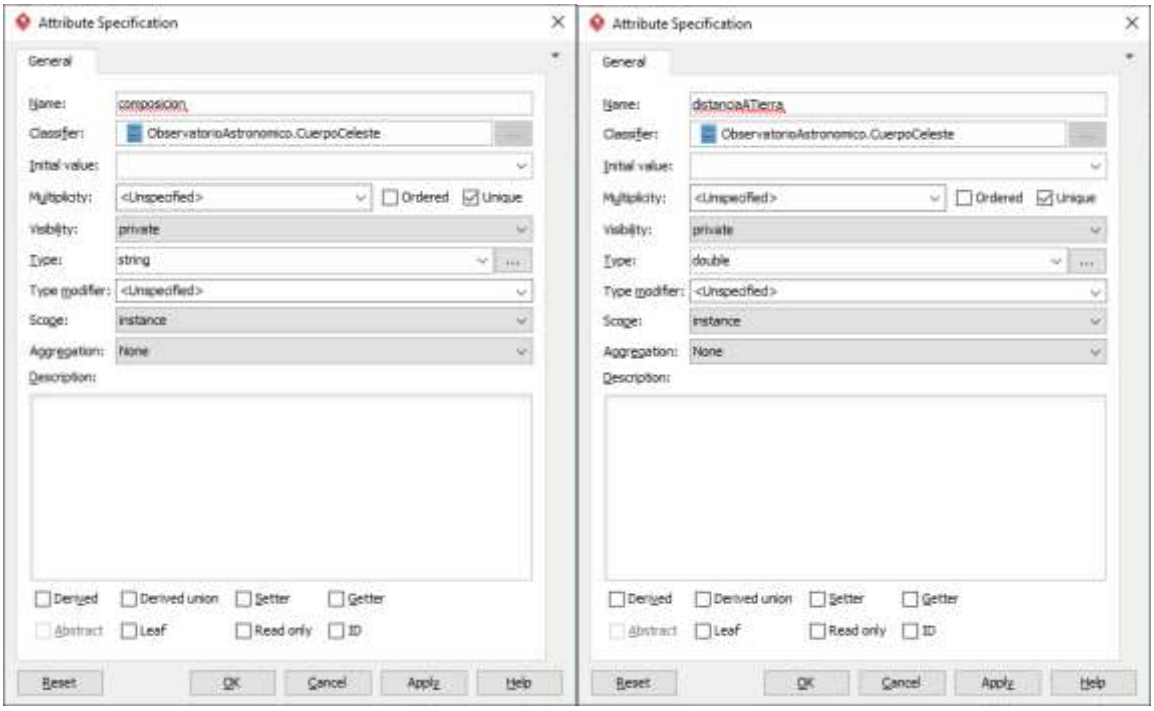


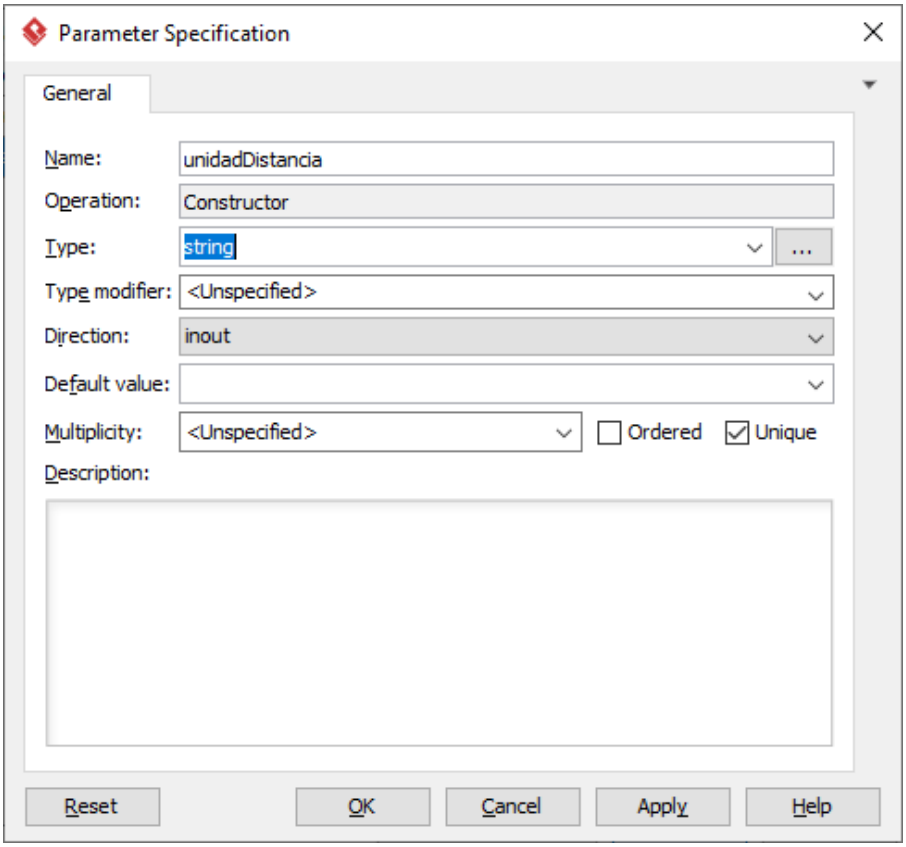

Class Specification
General
Attributes
Operations
Receptions
Name
Classifier
Visibility
Type
Initial Value
Show inherited
Open Specification...
Add...
Remove
Reset
OK
Cancel
Apply
Help

Clase composición, atributos:

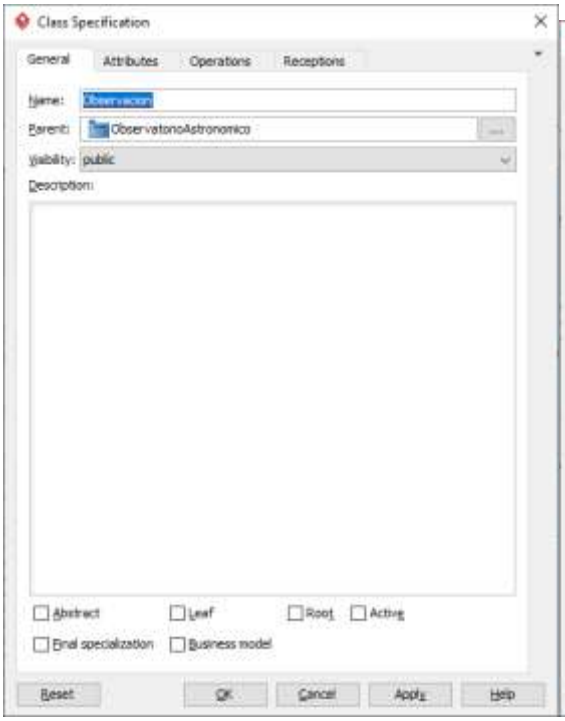


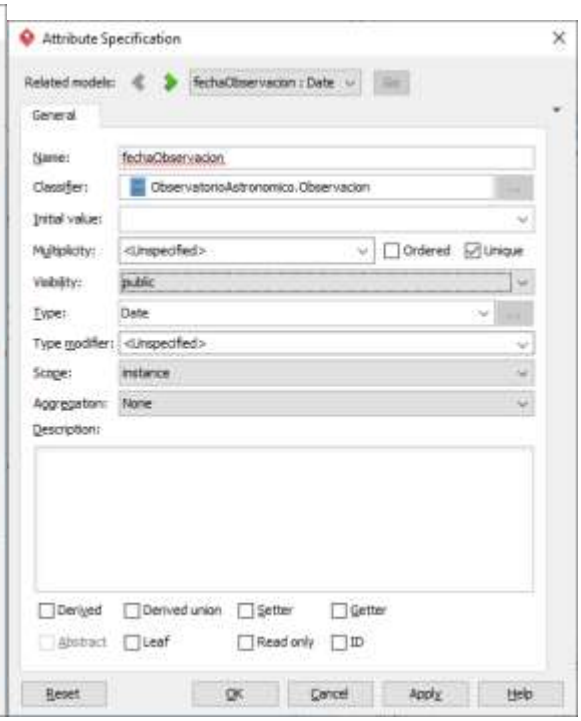


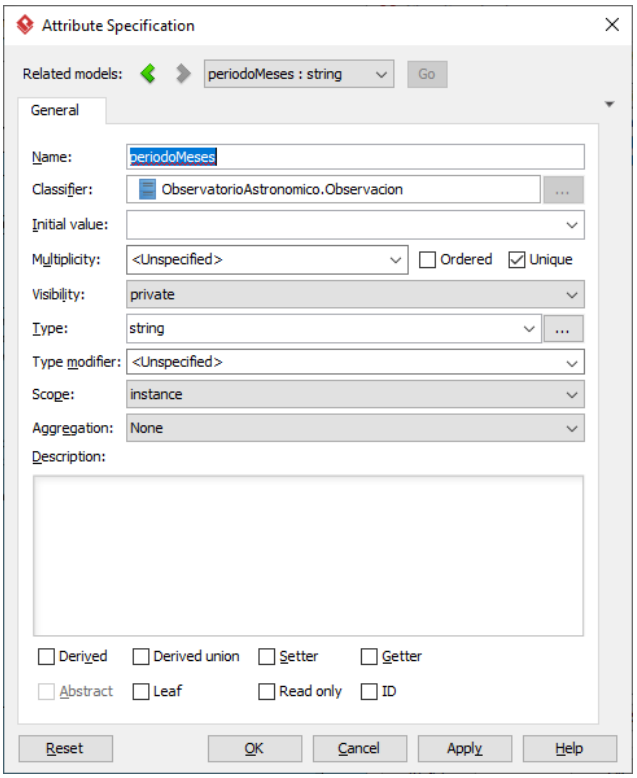

Attribute Specification
General
Name: composicion
Classifier: ObservatorioAstronomico.CuerpoCeleste
Initial value:
Multiplicity: <Unspecified>
Ordered
Unique
Visibility: private
Type: string
Type modifier: <Unspecified>
Scope: instance
Aggregation: None
Description:
Derived
Derived union
Setter
Getter
Abstract
Leaf
Read only
ID
Reset
OK
Cancel
Apply
Help
Attribute Specification
General
Name: distanciaATierra
Classifier: ObservatorioAstronomico.CuerpoCeleste
Initial value:
Multiplicity: <Unspecified>
Ordered
Unique
Visibility: private
Type: double
Type modifier: <Unspecified>
Scope: instance
Aggregation: None
Description:
Derived
Derived union
Setter
Getter
Abstract
Leaf
Read only
ID
Reset
OK
Cancel
Apply
Help


Parameter Specification
General
Name: unidadDistancia
Operation: Constructor
Type: string
Type modifier: <Unspecified>
Direction: inout
Default value:
Multiplicity: <Unspecified>
Ordered
Unique
Description:
Reset
OK
Cancel
Apply
Help

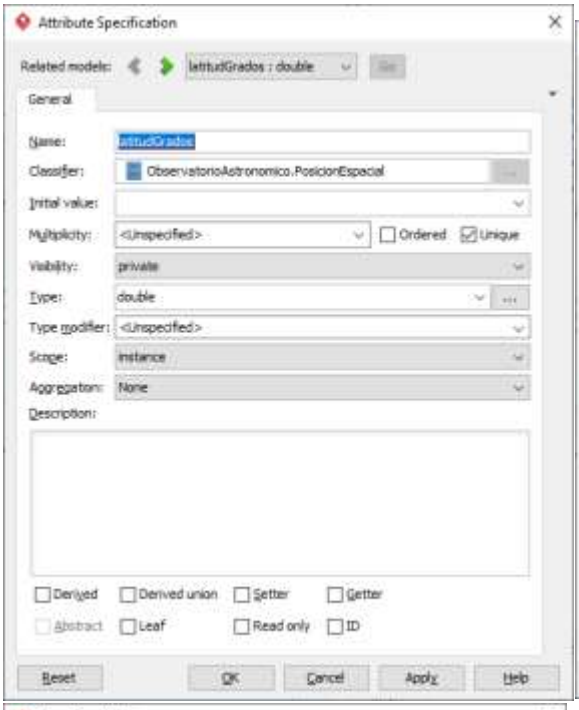
Creación clase observación, atributos:

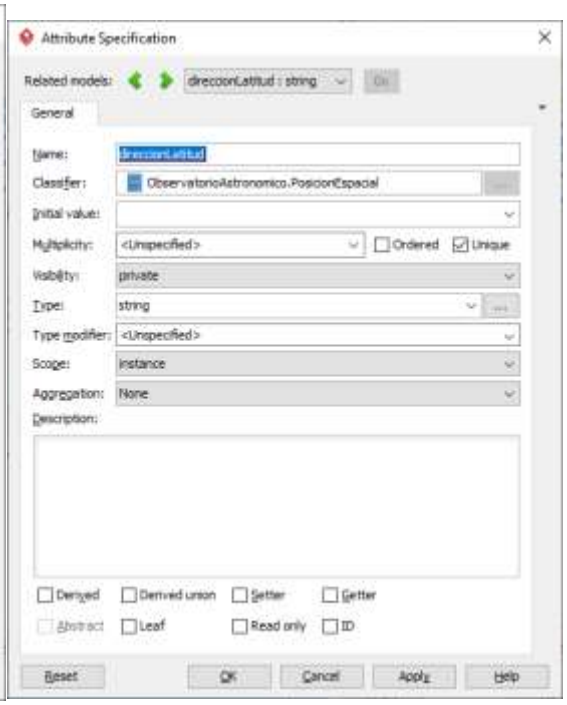


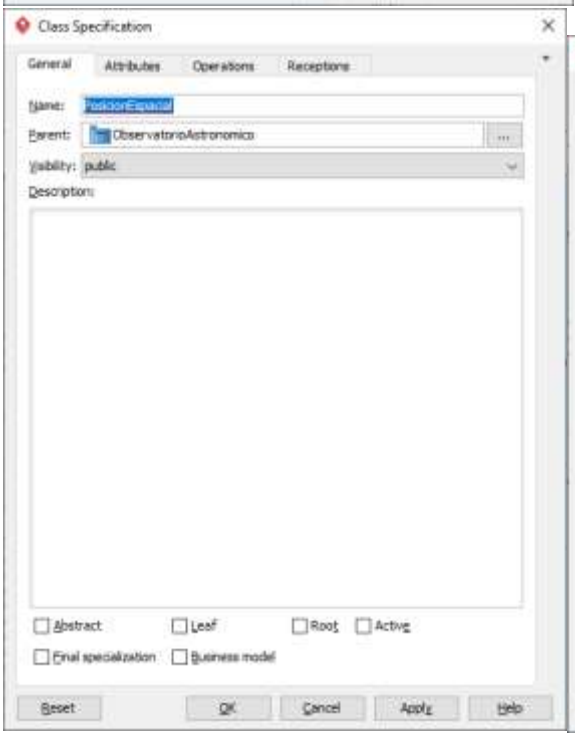


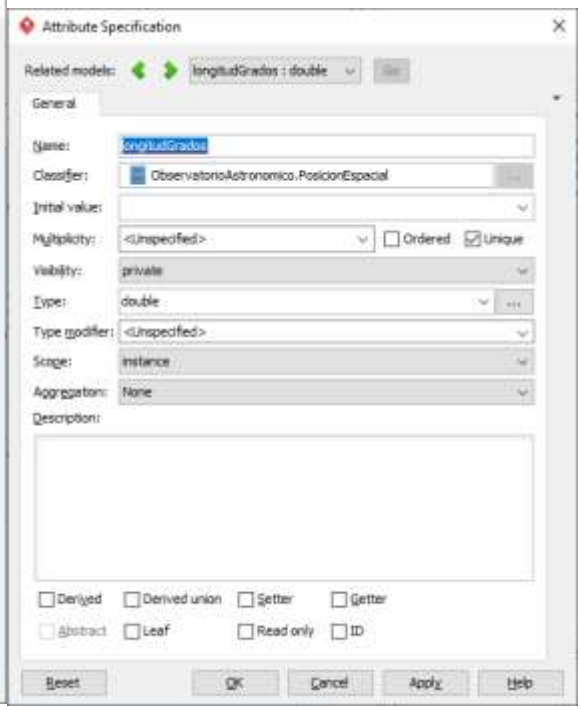


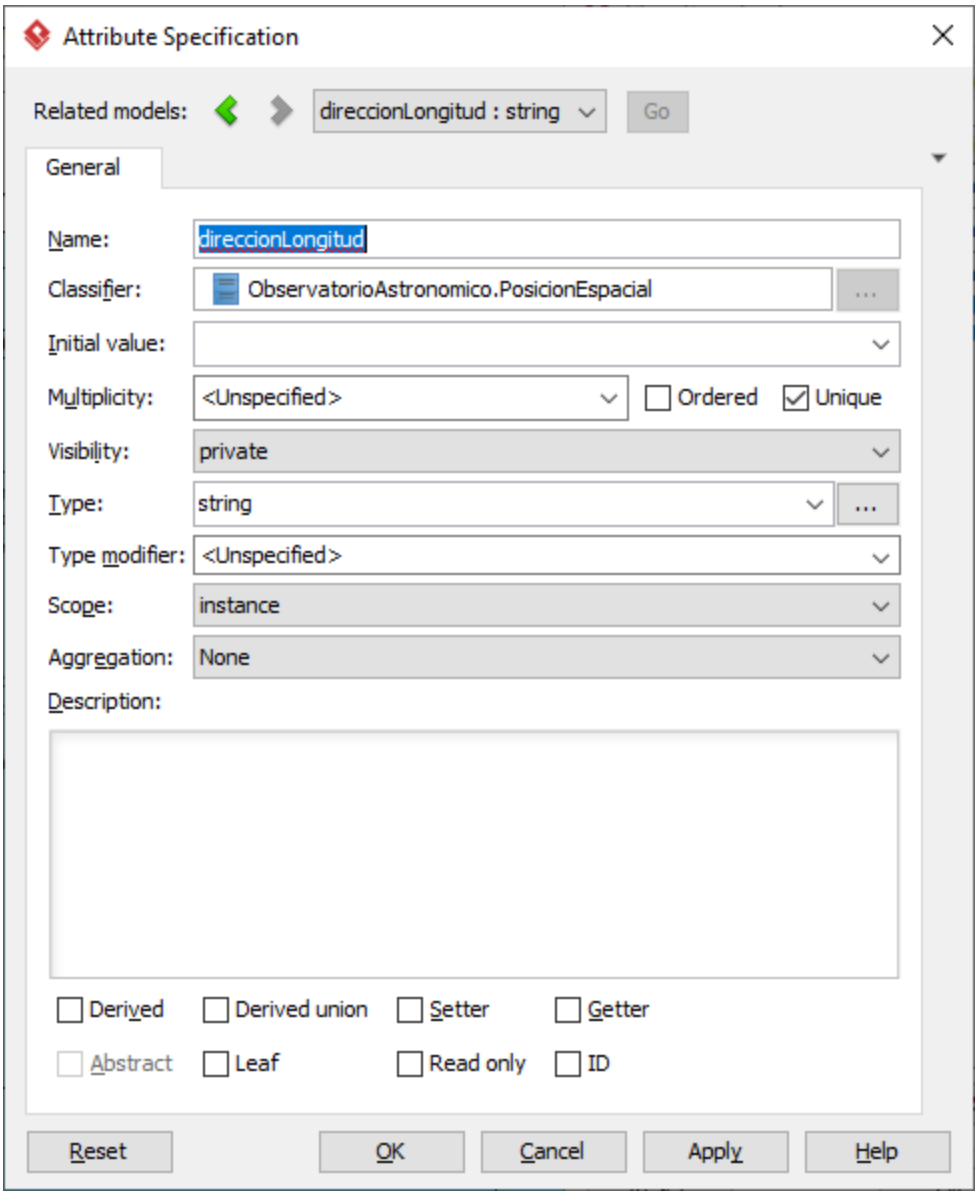
Creación de la clase Posicion espacial:





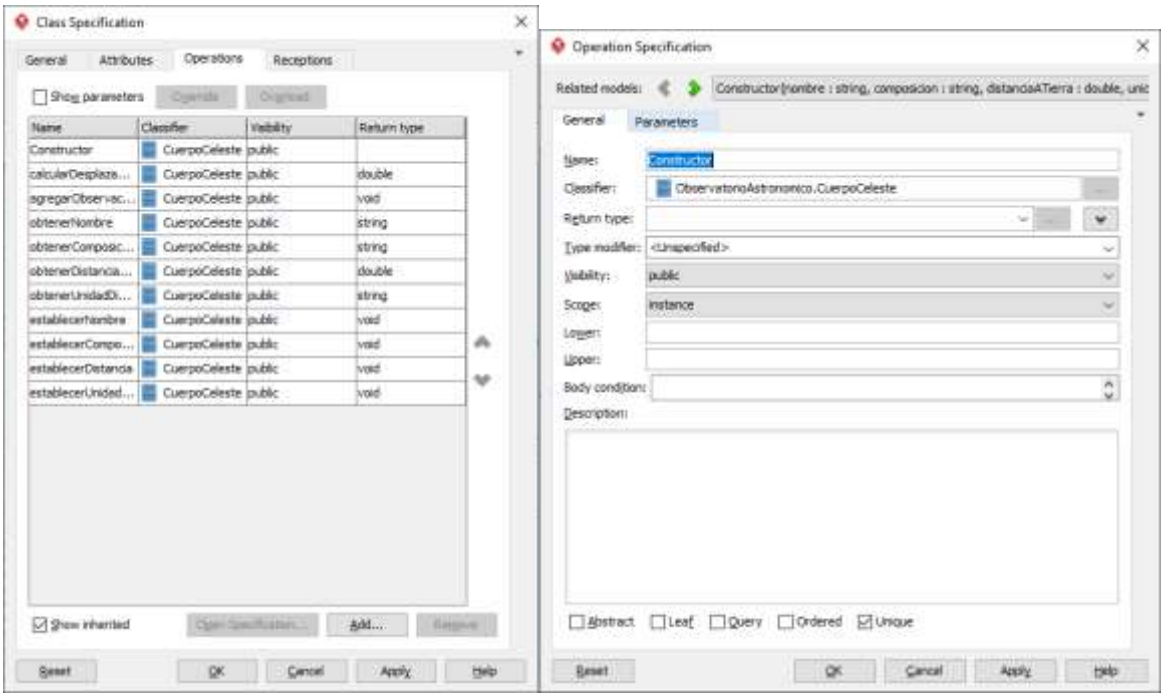


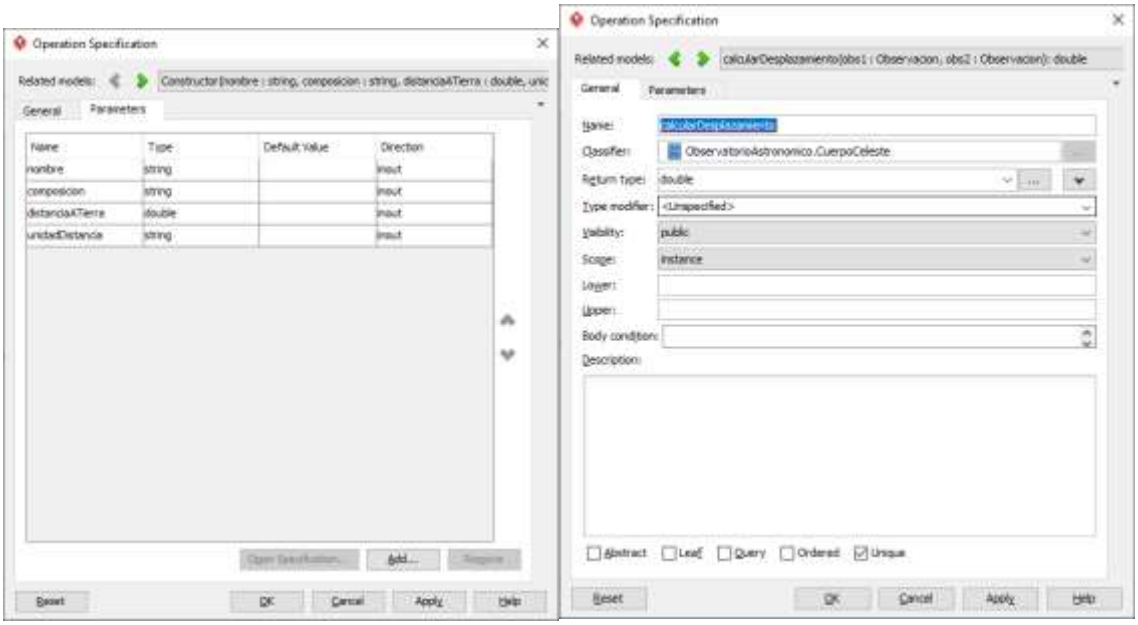


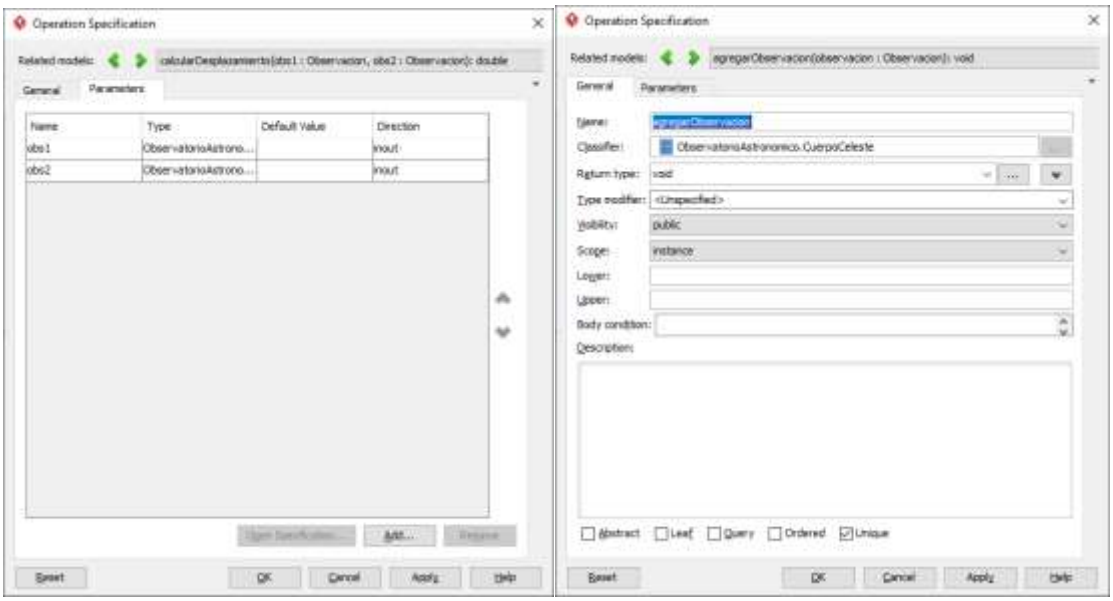

Attribute Specification
Related models:
direccionLongitud : string
Go
General
Name:
direccionLongitud
Classifier:
ObservatorioAstronomico.PosicionEspacial
Initial value:
Multiplicity:
<Unspecified>
Ordered
Unique
Visibility:
private
Type:
string
Type modifier:
<Unspecified>
Scope:
instance
Aggregation:
None
Description:
Derived
Derived union
Setter
Getter
Abstract
Leaf
Read only
ID
Reset
OK
Cancel
Apply
Help

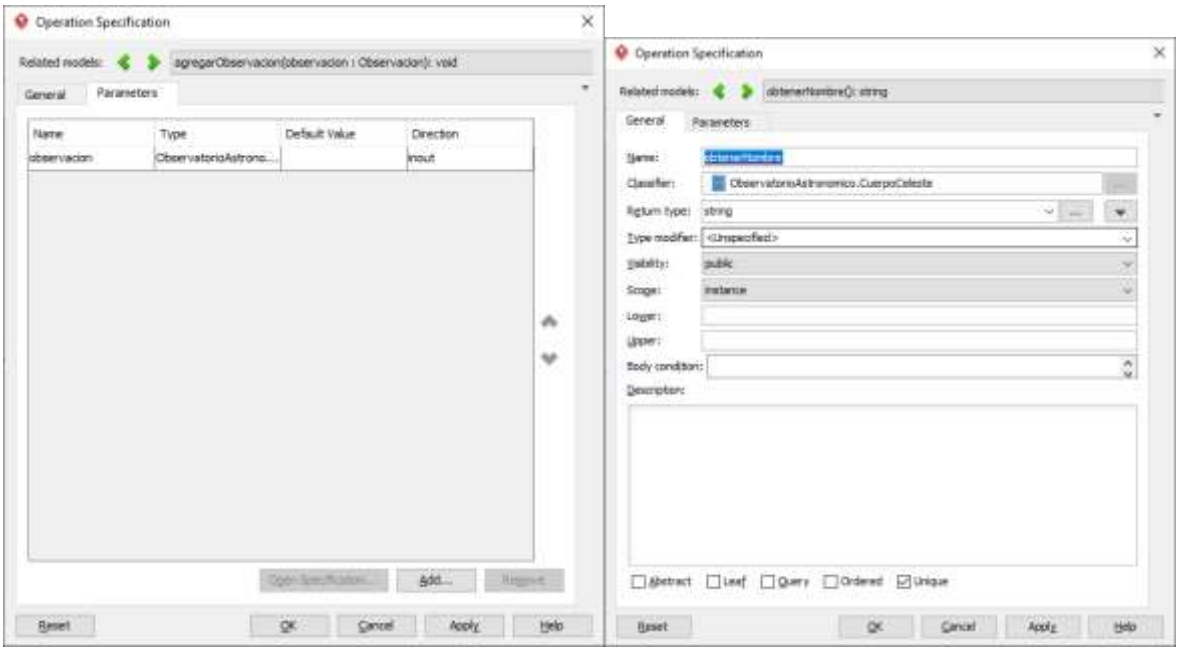
OPERACIONES DE LAS CLASES :

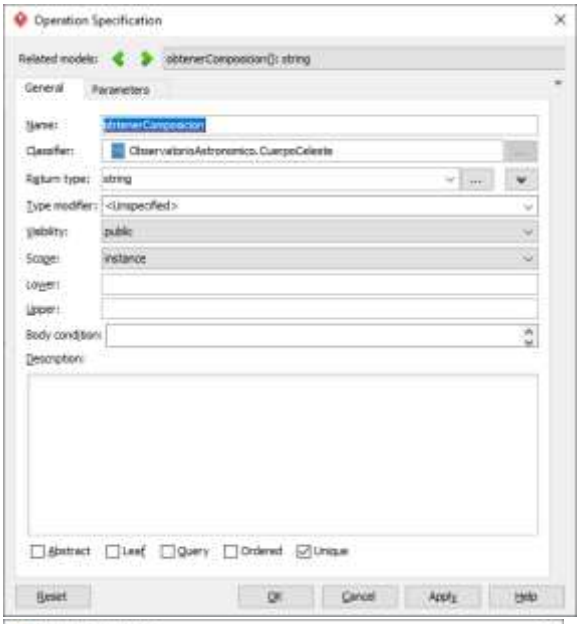
CLASE 1:

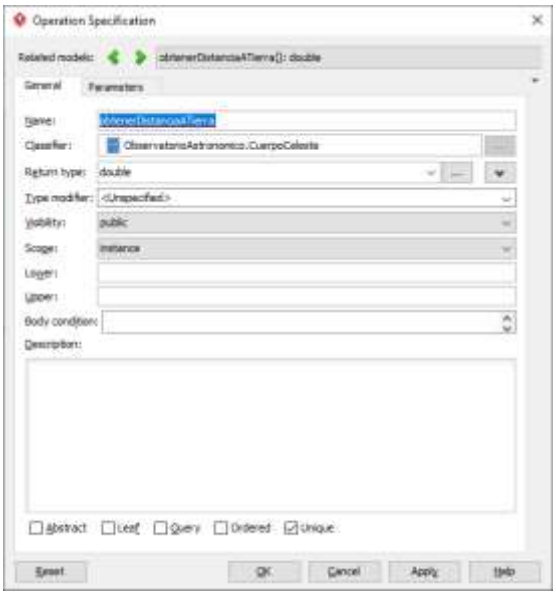


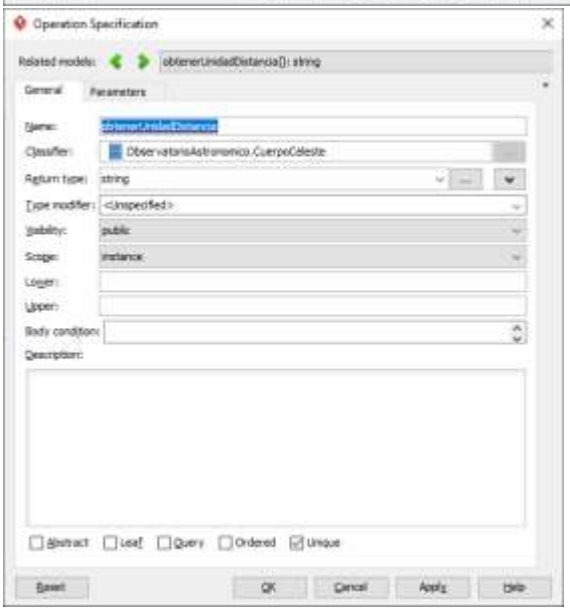


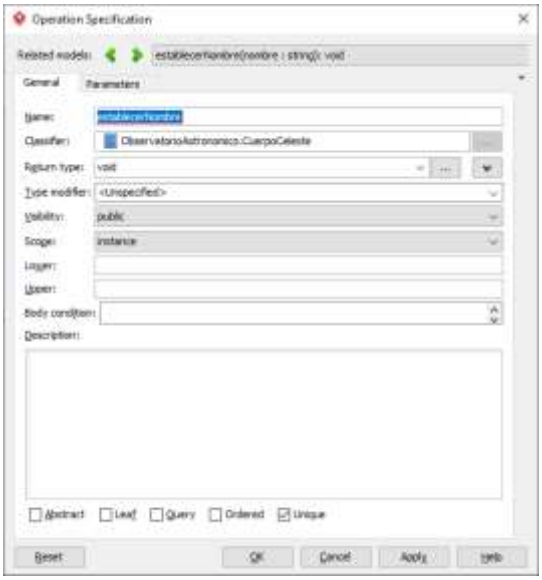

Operation Specification
Related models:
calcularDesplazamiento(obs1 : Observacion, obs2 : Observacion): double
General
Parameters
Name
Type
Default Value
Direction
obs1
ObservatorioAstrono...
inout
obs2
ObservatorioAstrono...
inout
Add...
Reset
OK
Cancel
Apply
Help
Operation Specification
Related models:
agregarObservacion(observacion : Observacion): void
General
Parameters
Name:
agregarObservacion
Classifier:
ObservatorioAstronomico::CuerpoCeleste
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

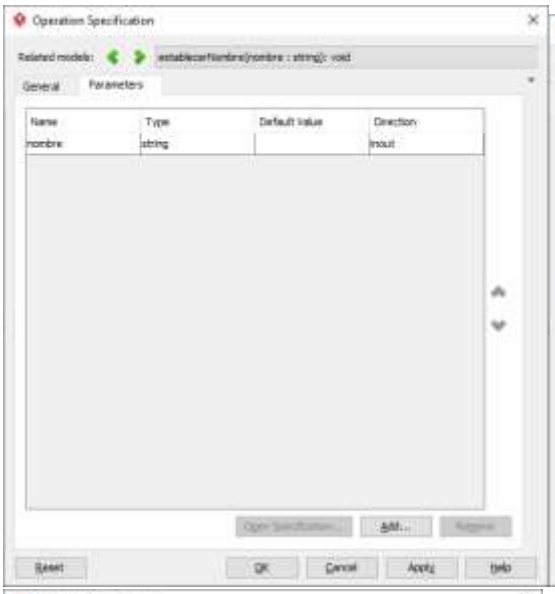

Operation Specification
Related models:
agregarObservacion(observacion : Observacion): void
General
Parameters
Name
Type
Default Value
Direction
observacion
ObservatorioAstrono...
inout
Add...
Reset
OK
Cancel
Apply
Help
Operation Specification
Related models:
obtenerNombre(): string
General
Parameters
Name:
obtenerNombre
Classifier:
ObservatorioAstronomico::CuerpoCeleste
Return type:
string
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

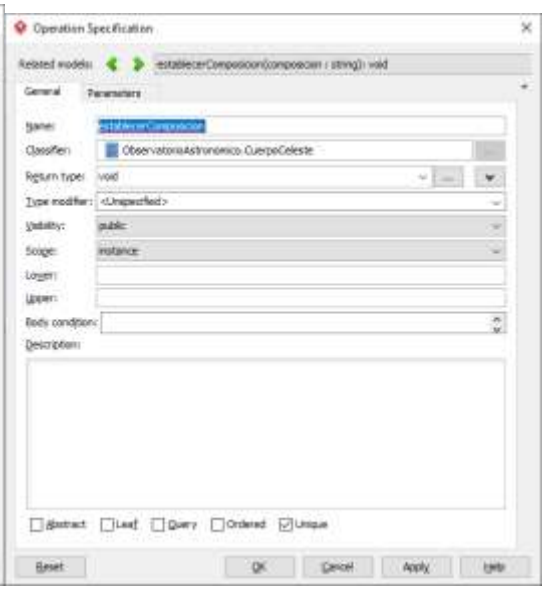

Operation Specification
Related models: obtenerComposicion(): string
General
Parameters
Name: obtenerComposicion
Classifier: ObservatorioAstronomico.CuerpoCeleste
Return type: string
Type modifier: <Unspecified>
Visibility: public
Scope: instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

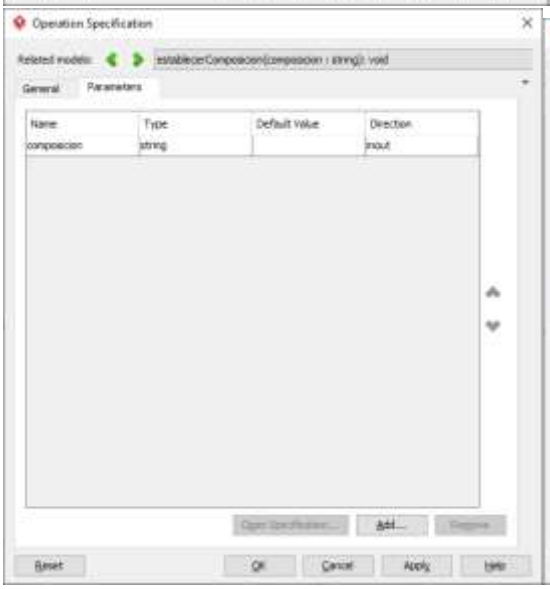

Operation Specification
Related models: obtenerDistanciaATierra(): double
General
Parameters
Name: obtenerDistanciaATierra
Classifier: ObservatorioAstronomico.CuerpoCeleste
Return type: double
Type modifier: <Unspecified>
Visibility: public
Scope: instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

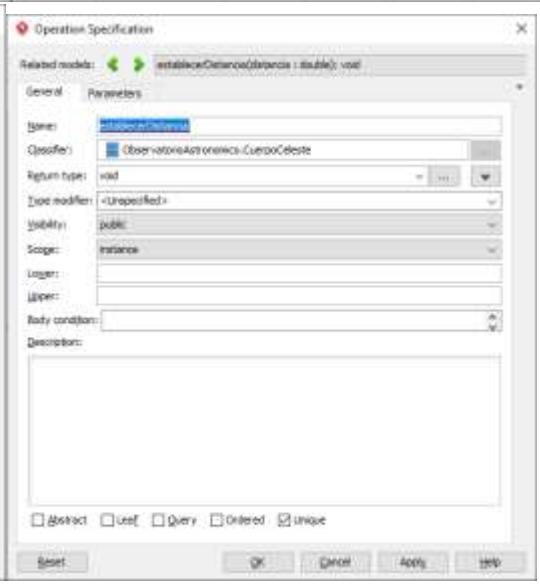

Operation Specification
Related models: obtenerUnidadDistancia(): string
General
Parameters
Name: obtenerUnidadDistancia
Classifier: ObservatorioAstronomico.CuerpoCeleste
Return type: string
Type modifier: <Unspecified>
Visibility: public
Scope: instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

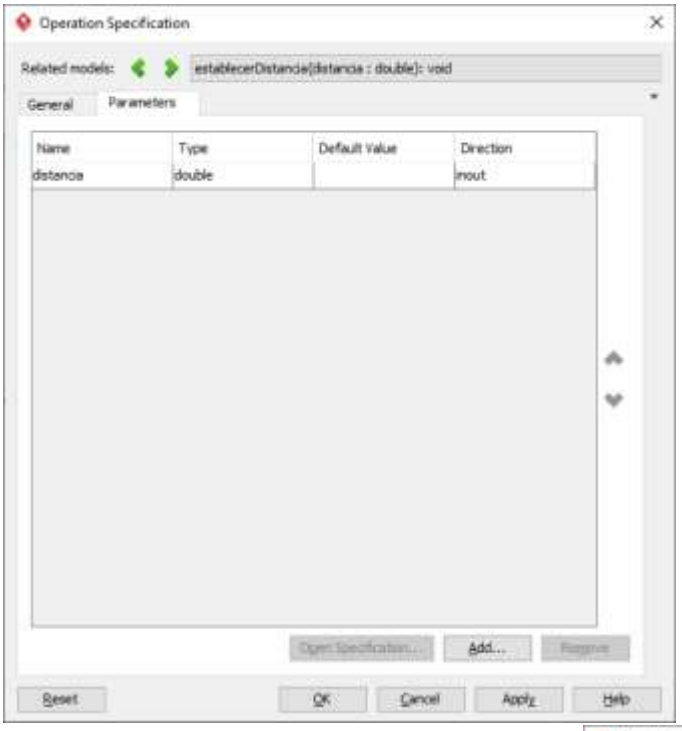

Operation Specification
Related models: establecerNombre(nombre : string): void
General
Parameters
Name: establecerNombre
Classifier: ObservatorioAstronomico.CuerpoCeleste
Return type: void
Type modifier: <Unspecified>
Visibility: public
Scope: instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

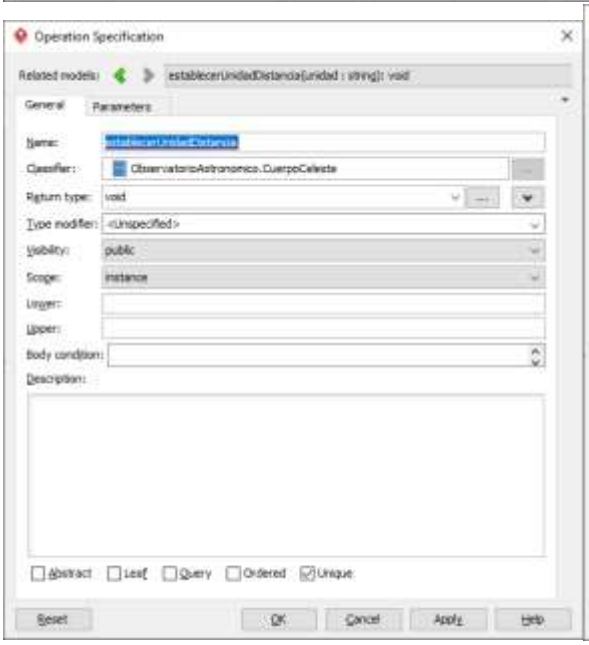

Operation Specification
Related models:
establecerNombre(nombre : string): void
General
Parameters
Name
Type
Default Value
Direction
nombre
string
in/out
Reset
OK
Cancel
Apply
Help

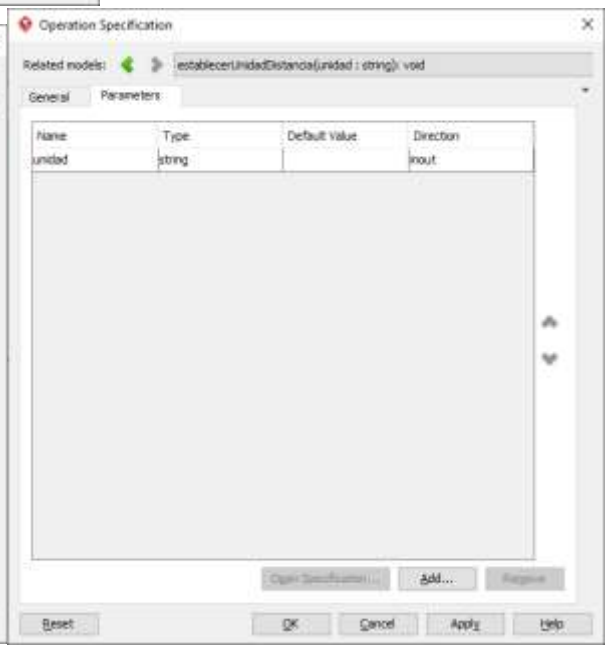

Operation Specification
Related models:
establecerComposicion(composicion : string): void
General
Parameters
Name:
Classifier:
ObservatorioAstronomico::CuerpoCeleste
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help


Operation Specification
Related models:
establecerComposicion(composicion : string): void
General
Parameters
Name
Type
Default Value
Direction
composicion
string
in/out
Reset
OK
Cancel
Apply
Help

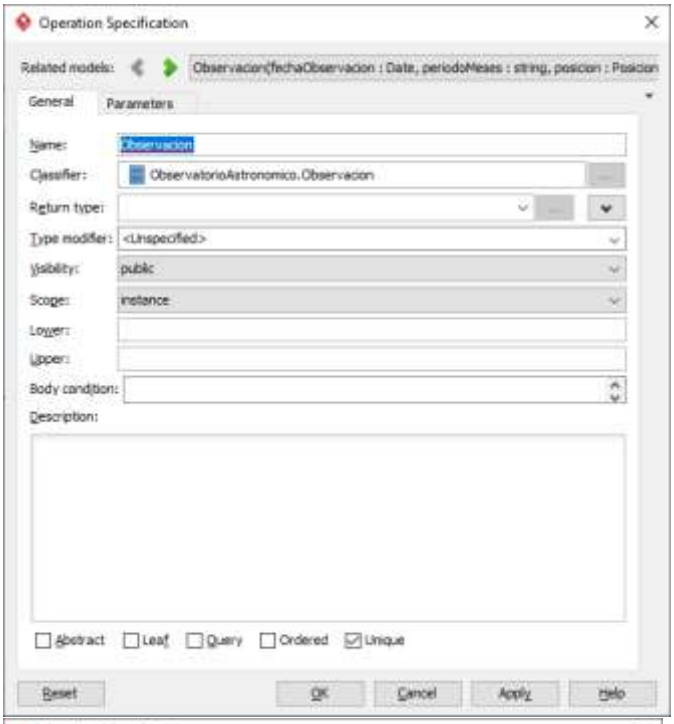

Operation Specification
Related models:
establecerDistancia(distancia : double): void
General
Parameters
Name:
Classifier:
ObservatorioAstronomico::CuerpoCeleste
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

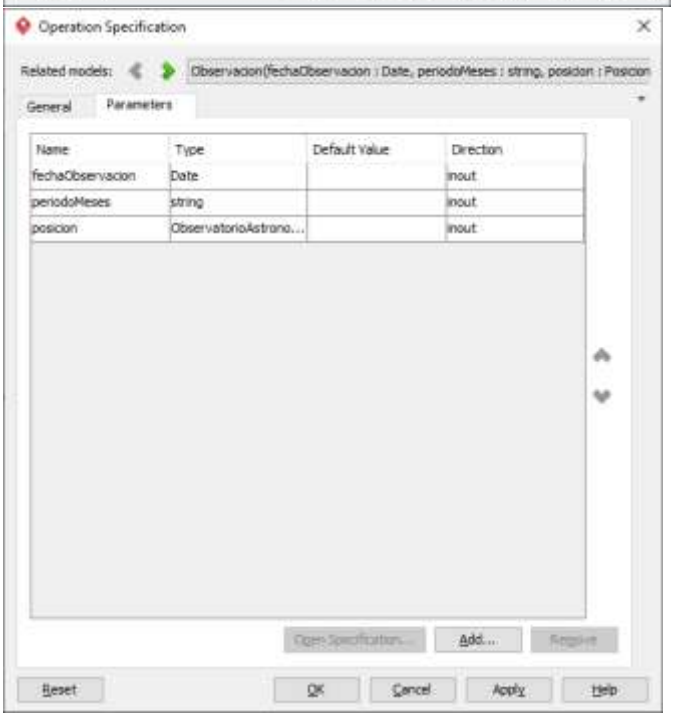

Operation Specification
Related models:
establecerDistancia(distancia : double): void
General
Parameters
Name
Type
Default Value
Direction
distancia
double
inout
Open Specification...
Add...
Remove
Reset
OK
Cancel
Apply
Help

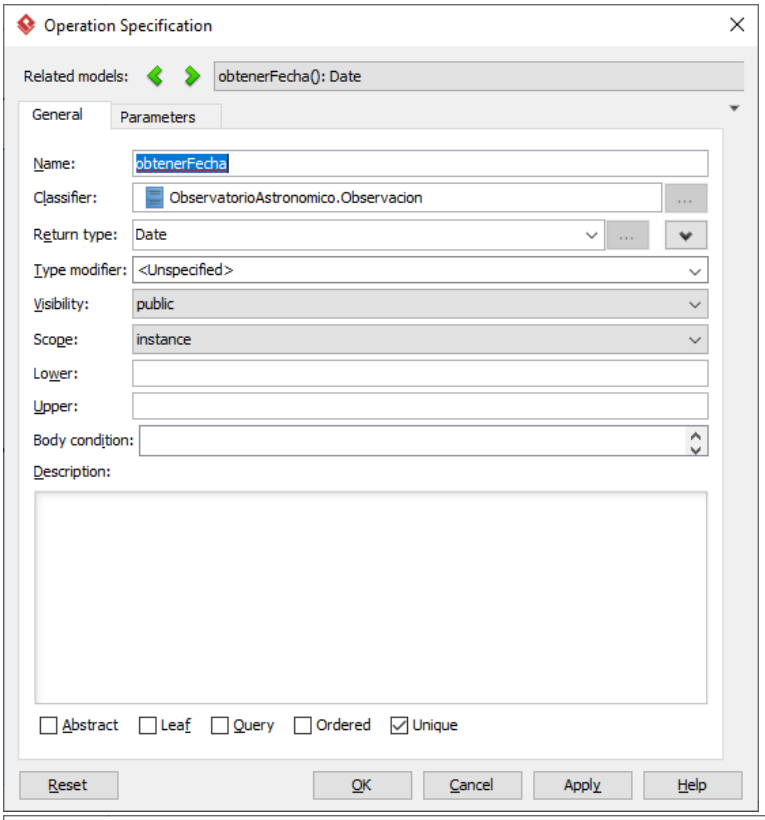

Operation Specification
Related models:
establecerUnidadDistancia(unidad : string): void
General
Parameters
Name:
Classifier:
ObservatorioAstronomico::CuerpoCeleste
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

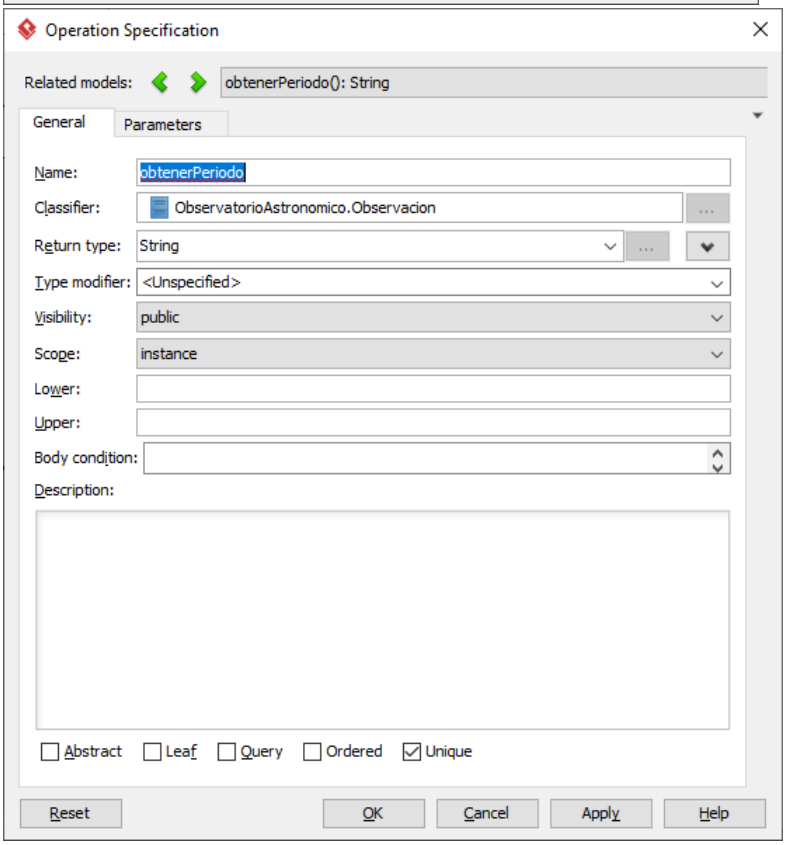

Operation Specification
Related models:
establecerUnidadDistancia(unidad : string): void
General
Parameters
Name
Type
Default Value
Direction
unidad
string
inout
Open Specification...
Add...
Remove
Reset
OK
Cancel
Apply
Help

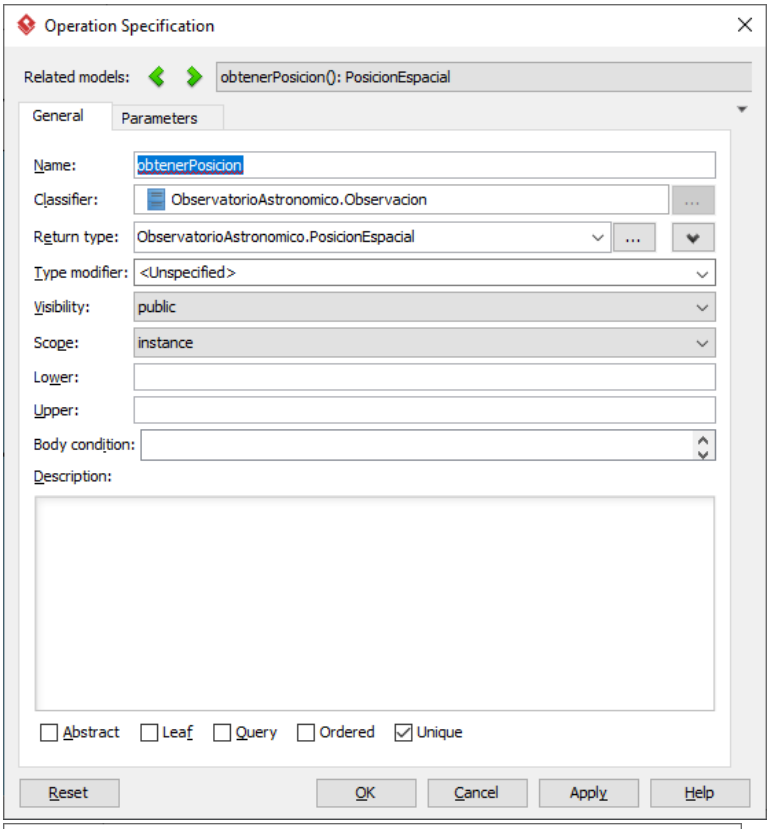
OPERACIONES CLASE OBSERVACION:

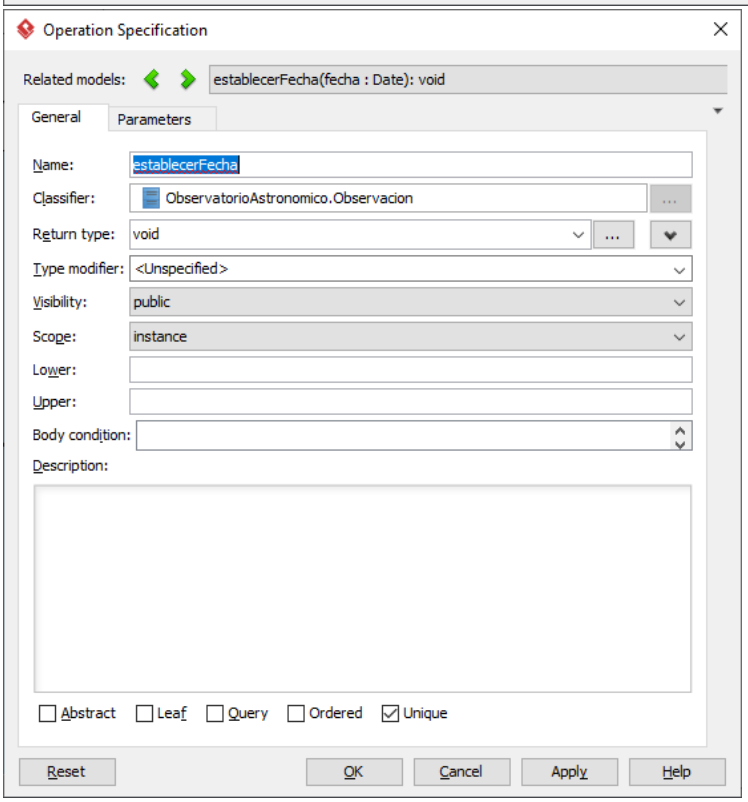


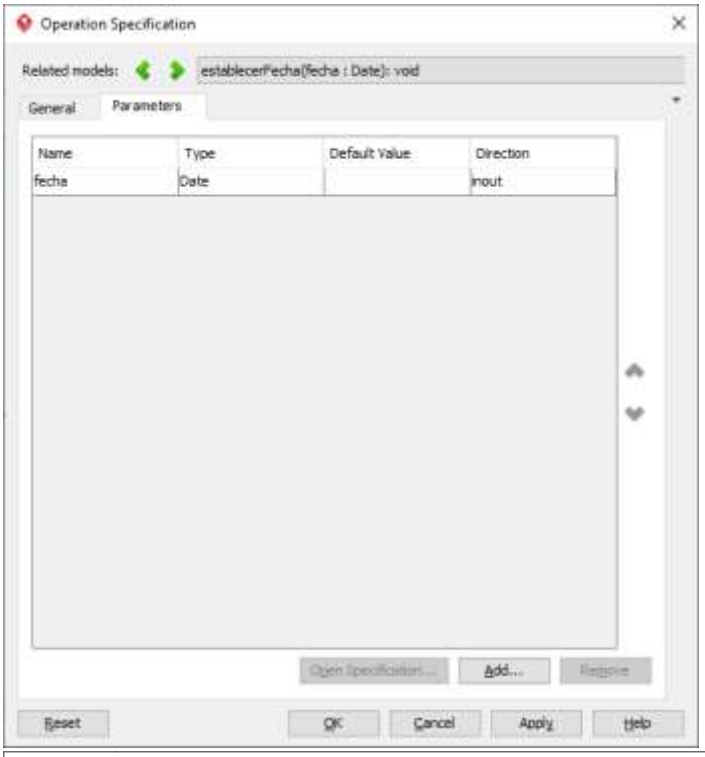


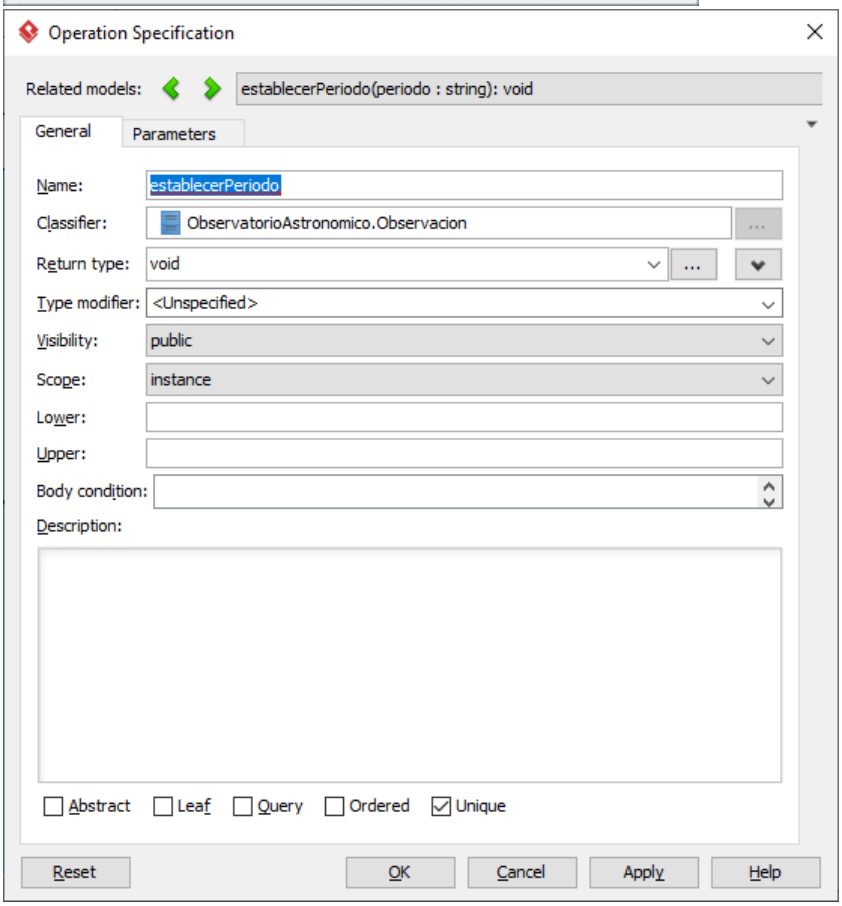

Operation Specification
Related models:
obtenerFecha(): Date
General
Parameters
Name:
obtenerFecha
Classifier:
ObservatorioAstronomico.Observacion
Return type:
Date
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

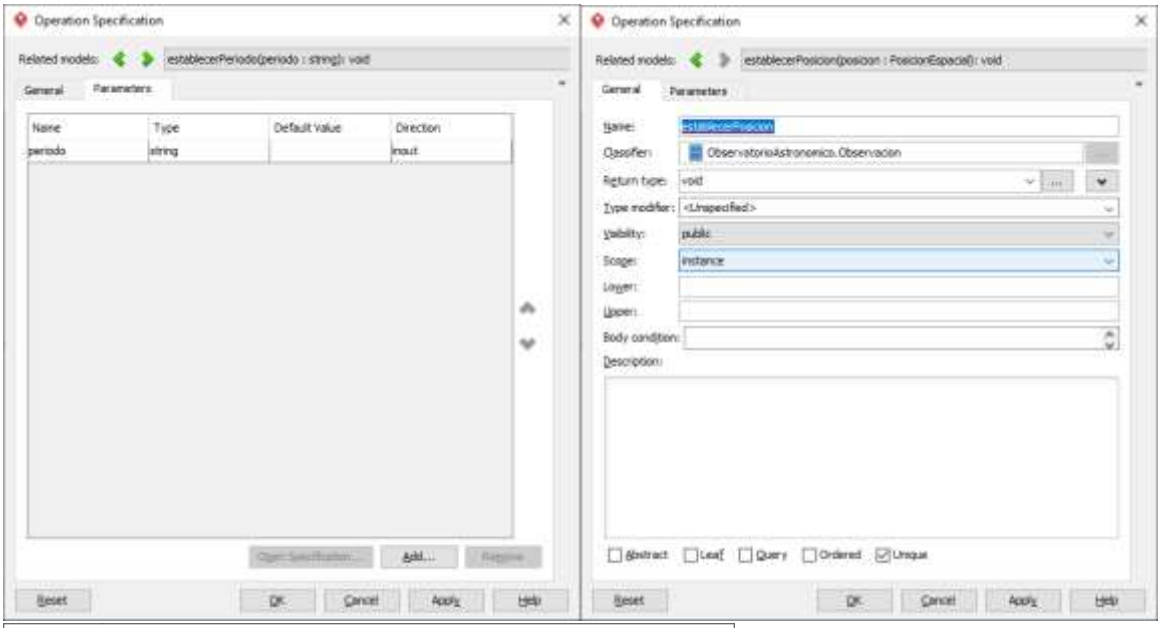

Operation Specification
Related models:
obtenerPeriodo(): String
General
Parameters
Name:
obtenerPeriodo
Classifier:
ObservatorioAstronomico.Observacion
Return type:
String
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

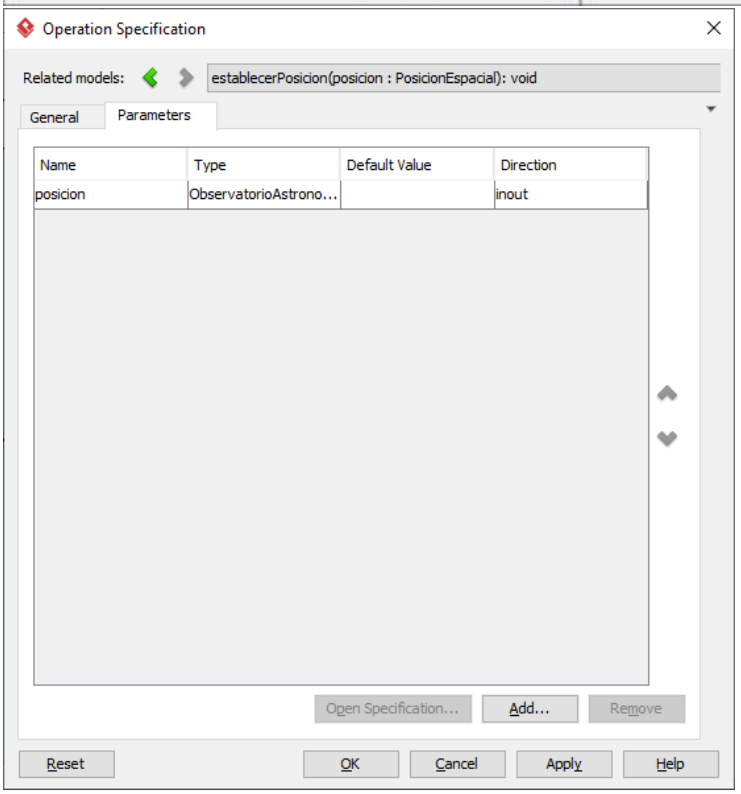

Operation Specification
Related models:
obtenerPosicion(): PosicionEspacial
General
Parameters
Name:
obtenerPosicion
Classifier:
ObservatorioAstronomico.Observacion
Return type:
ObservatorioAstronomico.PosicionEspacial
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help


Operation Specification
Related models:
establecerFecha(fecha : Date): void
General
Parameters
Name:
establecerFecha
Classifier:
ObservatorioAstronomico.Observacion
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

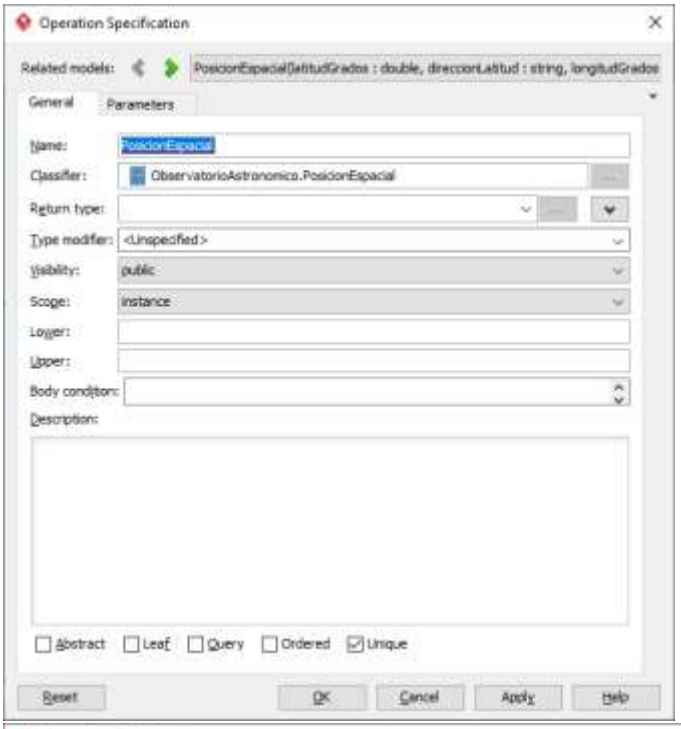

Operation Specification
Related models:
establecerFecha(fecha : Date): void
General
Parameters
Name
Type
Default Value
Direction
fecha
Date
inout
Add...
Reset
OK
Cancel
Apply
Help

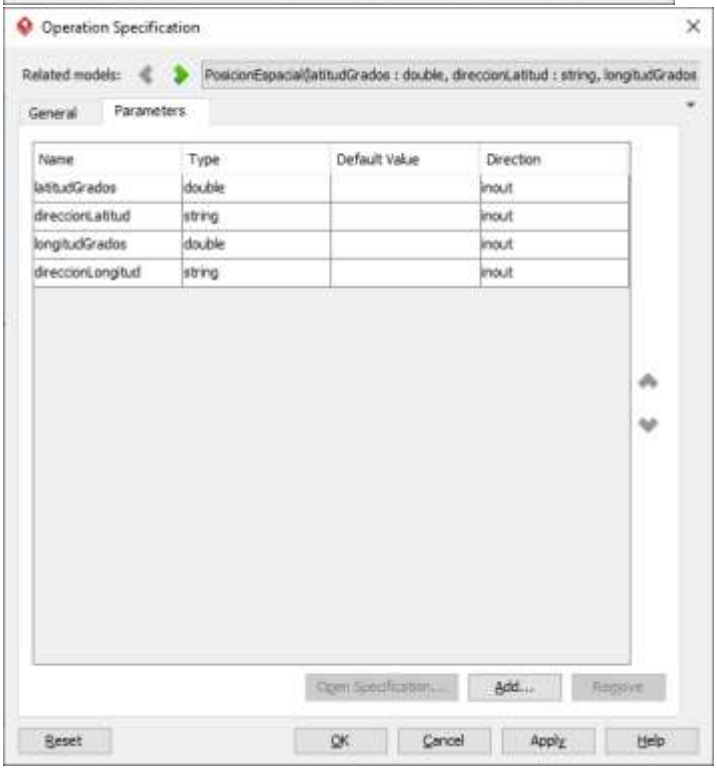

Operation Specification
Related models:
establecerPeriodo(periodo : string): void
General
Parameters
Name:
establecerPeriodo
Classifier:
ObservatorioAstronomico.Observacion
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

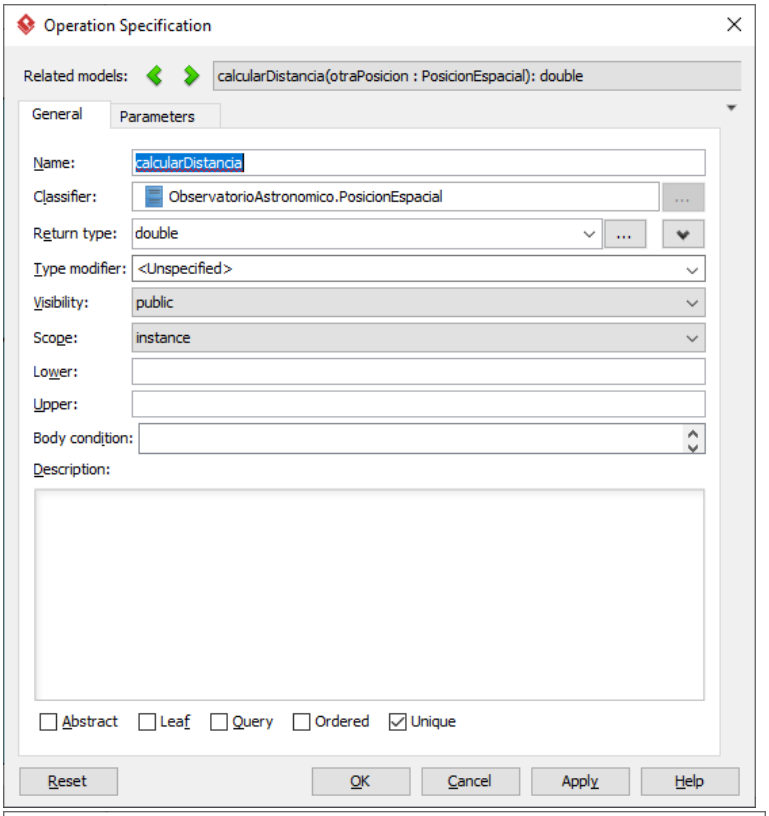

Operation Specification
Related models:
establecerPeriodo(periodo : string): void
General
Parameters
Name
Type
Default Value
Direction
periodo
string
inout
Add...
Reset
OK
Cancel
Apply
Help
Operation Specification
Related models:
establecerPosicion(posicion : PosicionEspacial): void
General
Parameters
Name:
Classifier:
ObservatorioAstronomico::Observacion
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Layer:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

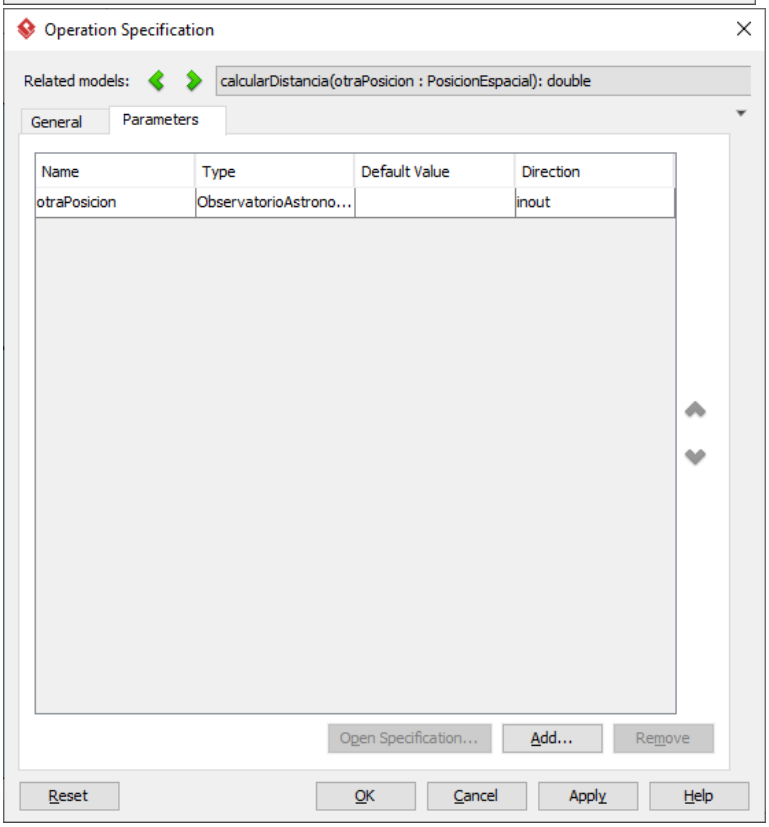

Operation Specification
Related models:
establecerPosicion(posicion : PosicionEspacial): void
General
Parameters
Name
Type
Default Value
Direction
posicion
ObservatorioAstrono...
inout
Open Specification...
Add...
Remove
Reset
OK
Cancel
Apply
Help

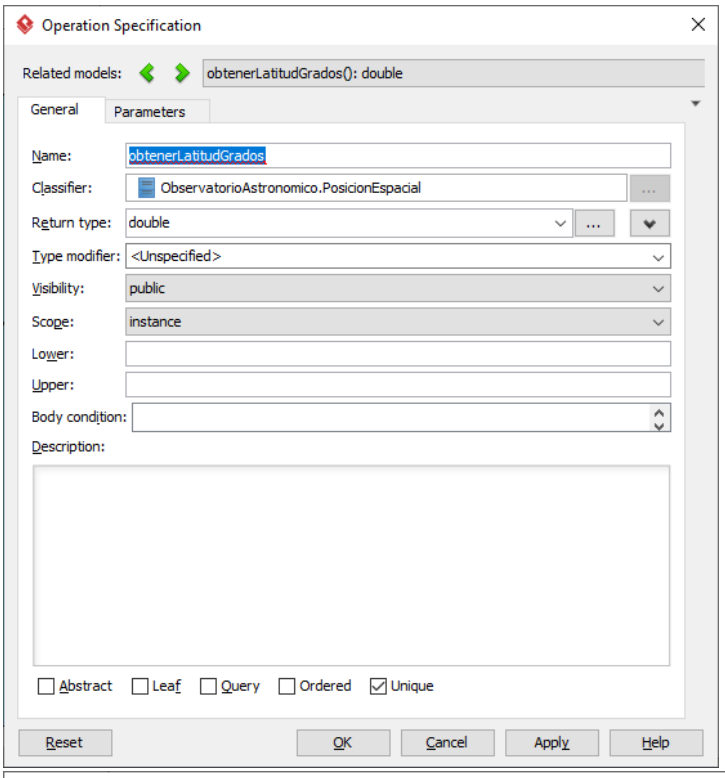
OPERACIONES CLASE POSICION ESPACIAL:

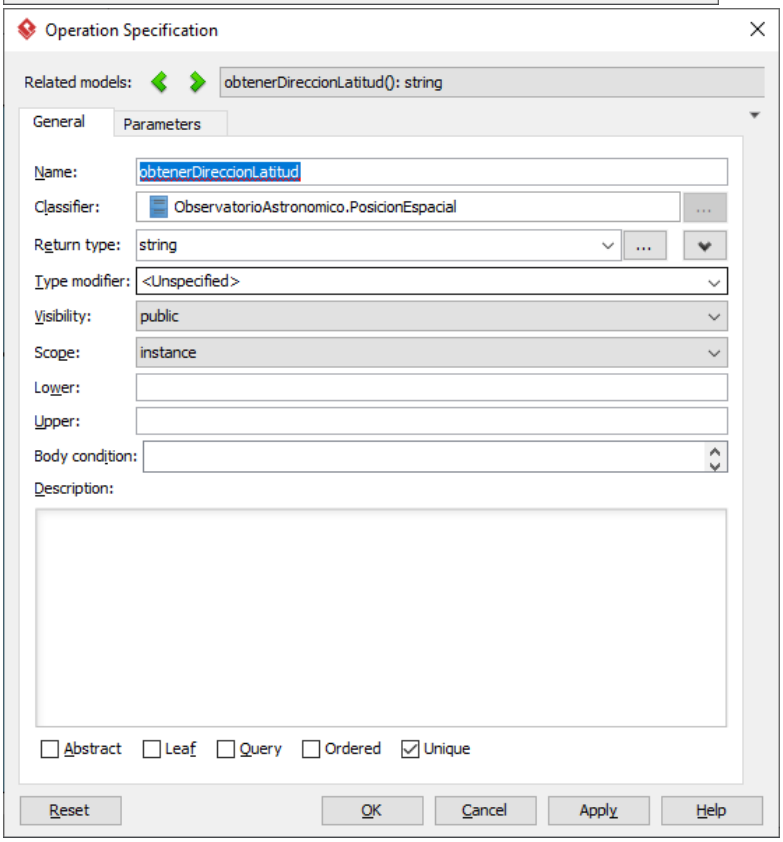


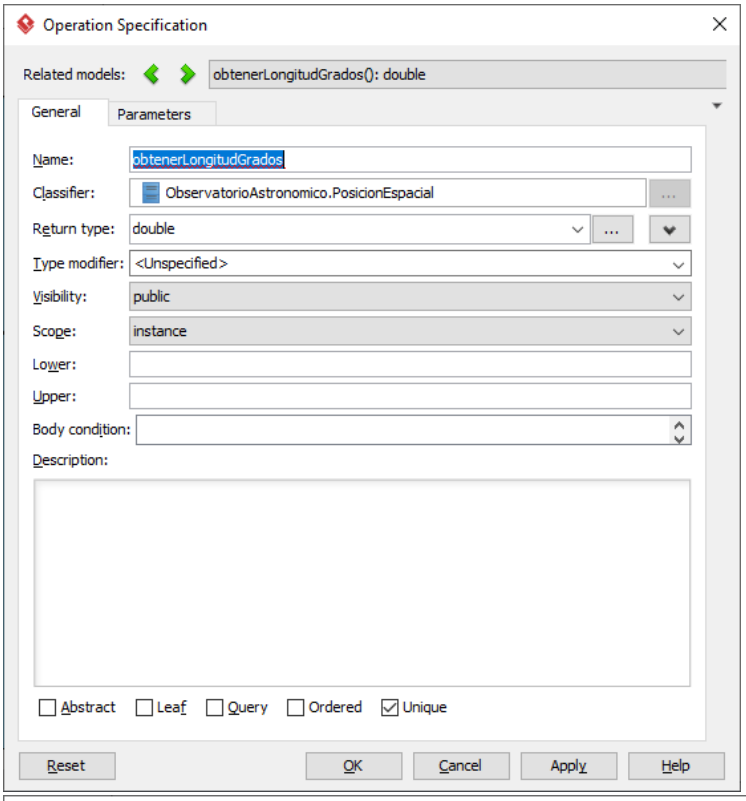


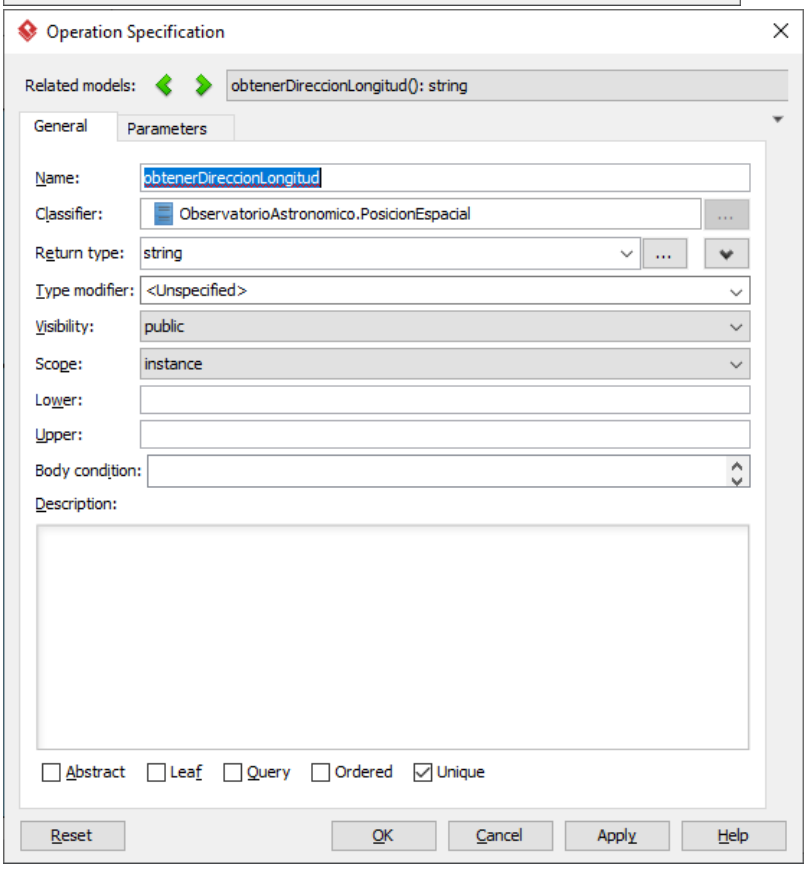

Operation Specification
Related models:
calcularDistancia(otraPosicion : PosicionEspacial): double
General
Parameters
Name:
calcularDistancia
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
double
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

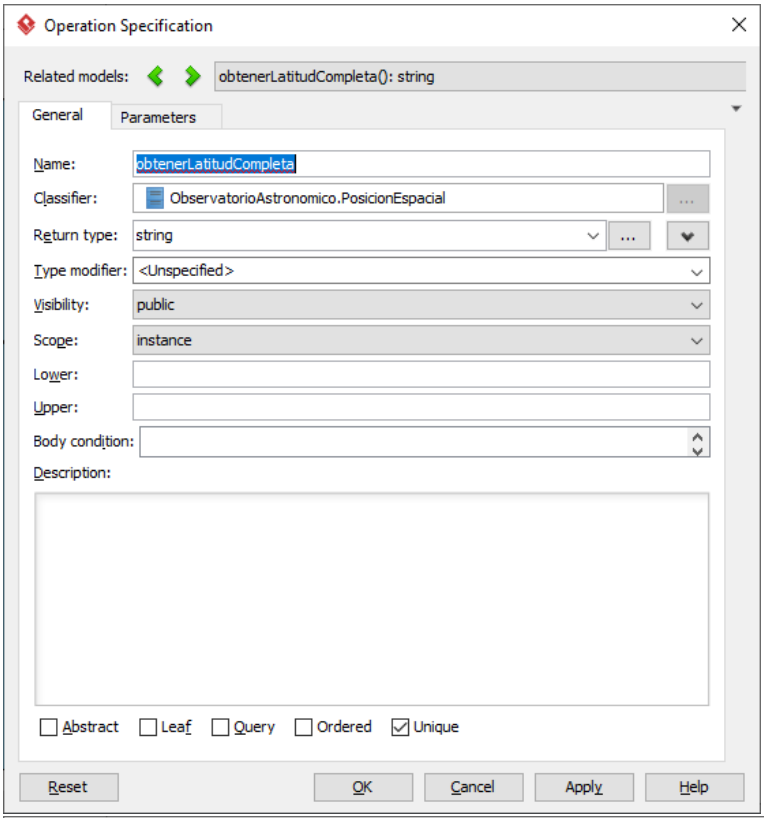

Operation Specification
Related models:
calcularDistancia(otraPosicion : PosicionEspacial): double
General
Parameters
Name
Type
Default Value
Direction
otraPosicion
ObservatorioAstrono...
inout
Open Specification...
Add...
Remove
Reset
OK
Cancel
Apply
Help

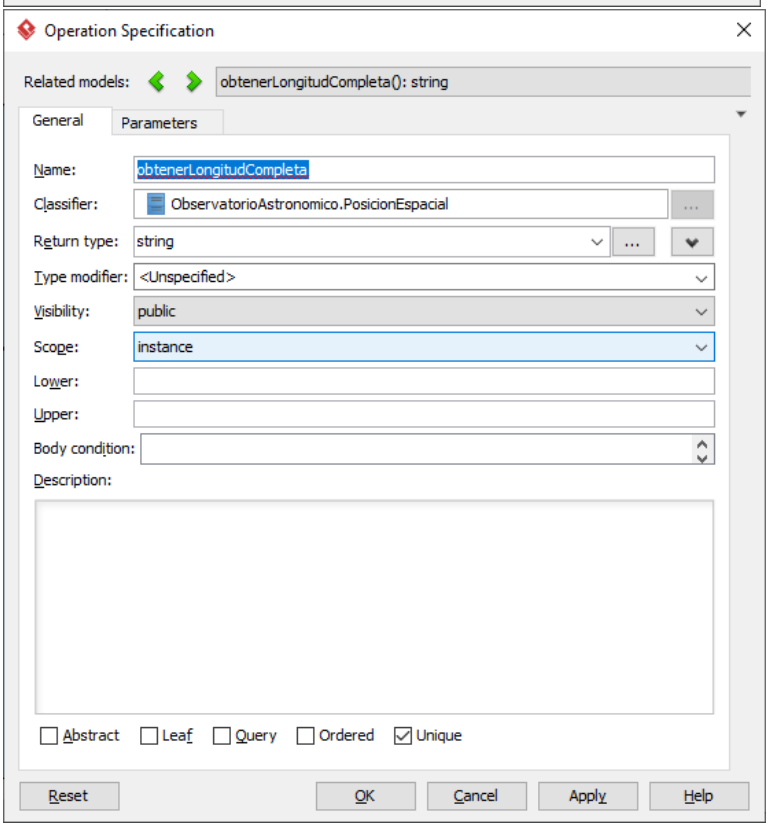

Operation Specification
Related models:
obtenerLatitudGrados(): double
General
Parameters
Name:
obtenerLatitudGrados
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
double
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

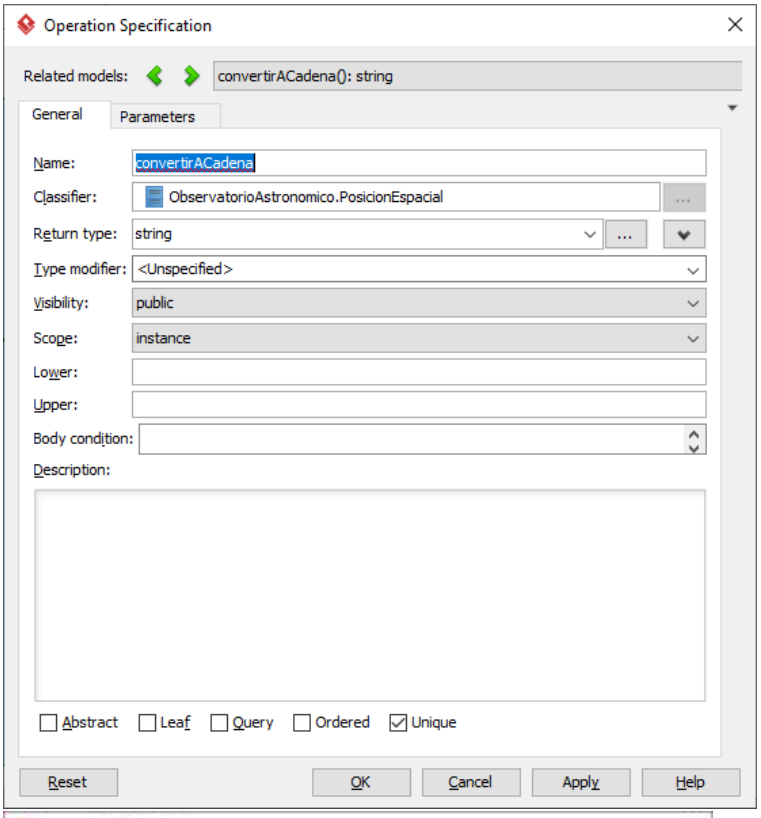

Operation Specification
Related models:
obtenerDireccionLatitud(): string
General
Parameters
Name:
obtenerDireccionLatitud
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
string
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

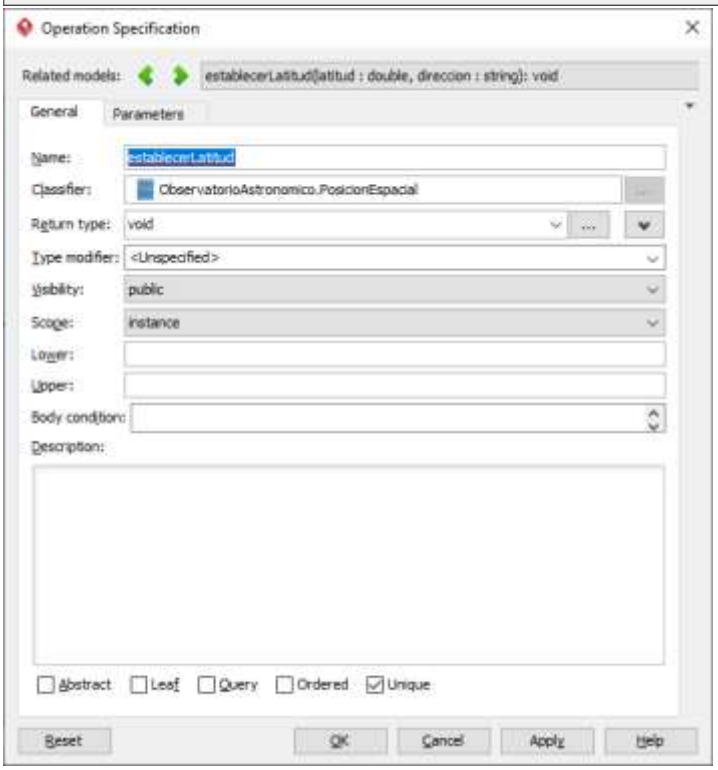

Operation Specification
Related models:
obtenerLongitudGrados(): double
General
Parameters
Name:
obtenerLongitudGrados
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
double
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

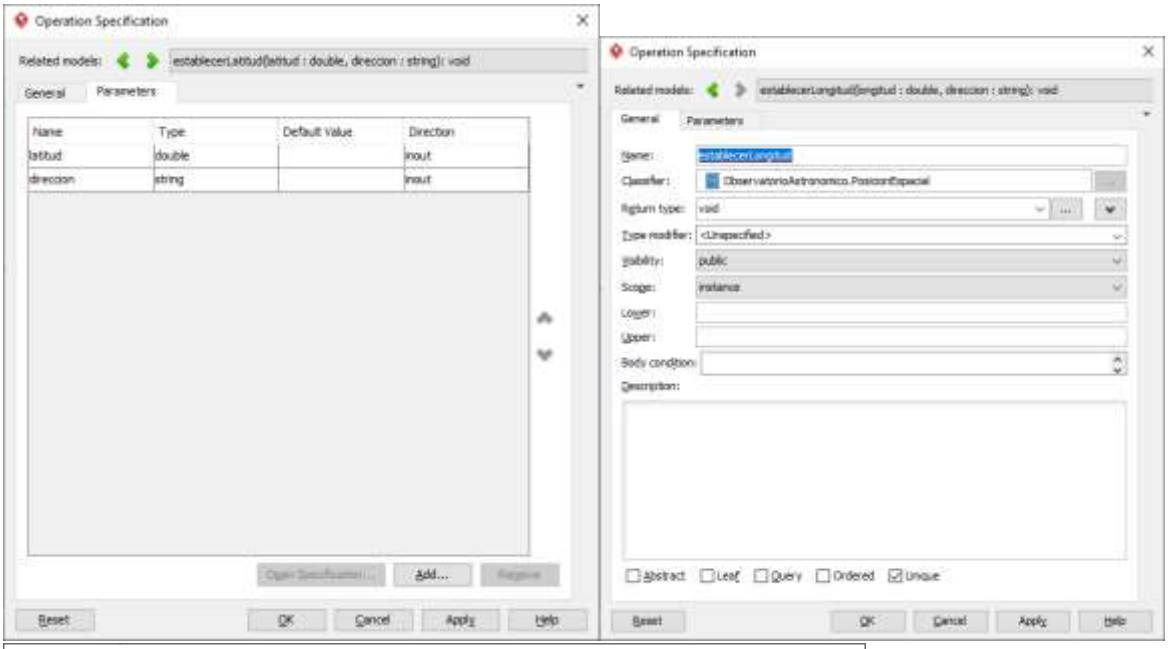

Operation Specification
Related models:
obtenerDireccionLongitud(): string
General
Parameters
Name:
obtenerDireccionLongitud
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
string
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help

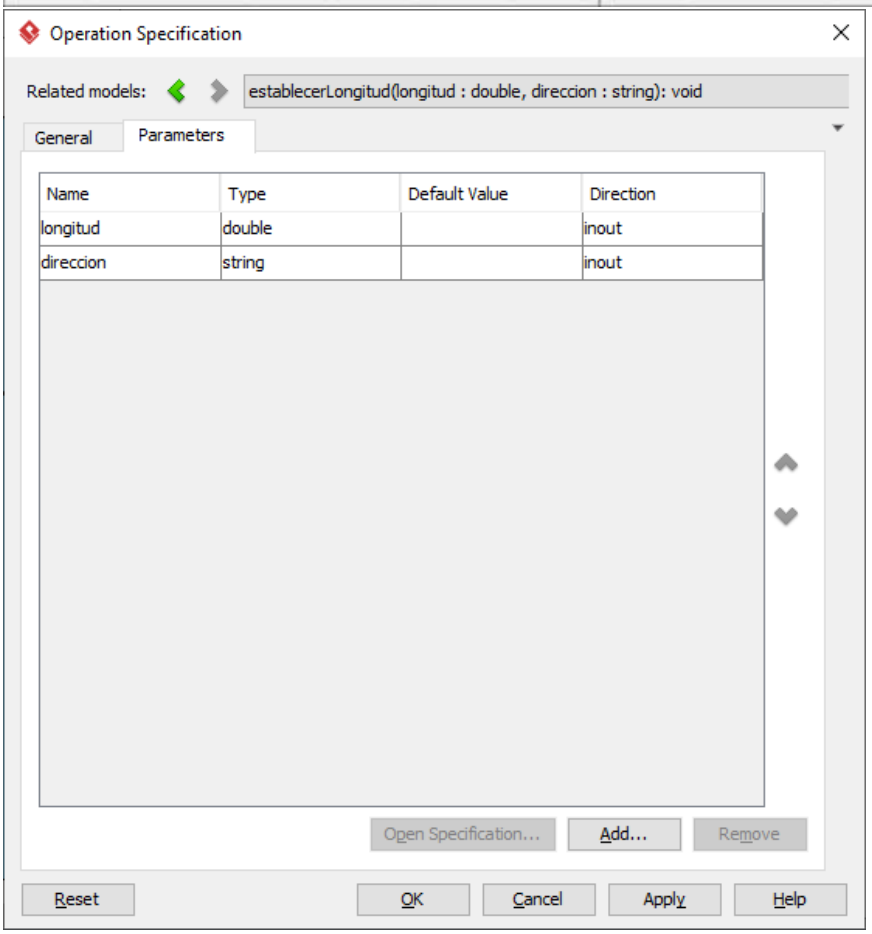

Operation Specification
Related models:
obtenerLatitudCompleta(): string
General
Parameters
Name:
obtenerLatitudCompleta
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
string
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help


Operation Specification
Related models:
obtenerLongitudCompleta(): string
General
Parameters
Name:
obtenerLongitudCompleta
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
string
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help


Operation Specification
Related models:
convertirACadena(): string
General
Parameters
Name:
convertirACadena
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
string
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help


Operation Specification
Related models:
establecerLatitud(latitud : double, direccion : string): void
General
Parameters
Name:
establecerLatitud
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help


Operation Specification
Related models:
establecerLatitud(latitud : double, direccion : string): void
General
Parameters
Name
Type
Default Value
Direction
latitud
double
inout
direccion
string
inout
Add...
Reset
OK
Cancel
Apply
Help
Operation Specification
Related models:
establecerLongitud(longitud : double, direccion : string): void
General
Parameters
Name:
Classifier:
ObservatorioAstronomico.PosicionEspacial
Return type:
void
Type modifier:
<Unspecified>
Visibility:
public
Scope:
instance
Lower:
Upper:
Body condition:
Description:
Abstract
Leaf
Query
Ordered
Unique
Reset
OK
Cancel
Apply
Help


Operation Specification
Related models:
establecerLongitud(longitud : double, direccion : string): void
General
Parameters
Name
Type
Default Value
Direction
longitud
double
inout
direccion
string
inout
Open Specification...
Add...
Remove
Reset
OK
Cancel
Apply
Help

RELACIÓN 1: CuerpoCeleste → Observacion

Clase Origen	Tipo Relación	Clase Destino	Cardinalidad
CuerpoCeleste	Composición	Observacion	1..*

RELACIÓN 2: Observacion → PosicionEspacial

Clase Origen	Tipo Relación	Clase Destino	Cardinalidad
Observacion	Composición	PosicionEspacial	1