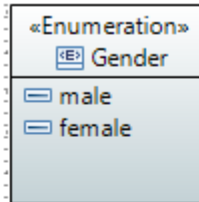


PAPYRUS



+ motherFamily

*

+ fatherFamily

*

+ childFamily

*

+ uncleFamily

*

+ auntFamily

*

+ grandfatherFamily

*

+ grandmotherFamily

*

Mother

+ mother

0..1

+ father

0..1

+ child

0..1

+ uncle

0..1

+ aunt

+ grandfather

0..2

+ person

0..2

Grandmother



«enumeration» Gender
female
male

USE

Family			Person
surname : String			name : String age : Integer gender : Gender
	auntFamily	Aun	aunt
	*		*
	childFamily	Child	child
	0..1		*
	cousinFamily	Cousin	Cousin
	*		*
	fatherFamily	Father	father
	0..1		0..1
	grandfatherFamily	Grandfather	Grandfather
	*		0..2
	grandmotherFamily	Grandmother	Grandmother
	*		0..2
	motherFamily	Mother	mother
	0..1		0..1
	uncleFamily	Uncle	uncle
	*		*

MAGIC DRAW

Family constraints:

AtLeastOneElement= $\text{self.mother} \rightarrow \text{size}() + \text{self.child} \rightarrow \text{size}() > 0$

ChildrenOlderThanParents= $\text{self.child} \rightarrow \text{forAll}(c | \text{self.father} \rightarrow \text{notEmpty} \text{ implies } \text{self.father.age} > c.\text{age} \text{ and } \text{self.mother} \rightarrow \text{notEmpty} \text{ implies } \text{self.mother.age} > c.\text{age})$

Traditional= $(\text{self.father} \rightarrow \text{notEmpty} \text{ implies } \text{self.father.gender} = \text{Gender::male}) \text{ and } (\text{self.mother} \rightarrow \text{notEmpty} \text{ implies } \text{self.mother.gender} = \text{Gender::female}) \text{ and } (\text{self.grandfather} \rightarrow \text{notEmpty} \text{ implies } \text{self.grandfather.gender} = \text{Gender::male}) \text{ and } (\text{self.grandmother} \rightarrow \text{notEmpty} \text{ implies } \text{self.grandmother.gender} = \text{Gender::female}) \text{ and } (\text{self.uncle} \rightarrow \text{notEmpty} \text{ implies } \text{self.uncle.gender} = \text{Gender::male}) \text{ and } (\text{self.aunt} \rightarrow \text{notEmpty} \text{ implies } \text{self.aunt.gender} = \text{Gender::female})$

UniqueNamesWithinAFamily= $\text{let members : Set(Person)} = \text{Set{}} \rightarrow \text{union}(\text{self.child} \rightarrow \text{including}(\text{self.father}) \rightarrow \text{including}(\text{self.mother}) \rightarrow \text{excluding(Undefined)}) \text{ in } \text{members} \rightarrow \text{collect}(\text{name}) \rightarrow \text{asSet}() \rightarrow \text{size}() = \text{members} \rightarrow \text{size}()$

Person Constraint:

FatherOrMother= $\text{self.fatherFamily} \rightarrow \text{size}() + \text{self.motherFamily} \rightarrow \text{size}() \leq 1$

«enumeration»
gender
enumeration literals
male
female

