

Please, Press Ctrl-A, F9 to update all fields or move cursor over the field and press F9 to activate TOC

Root Package

This diagram is the third iteration of the ZooKeeper narrative intended to model the use of classes and behaviors to appropriately distribute responsibilities within the modeling domain.

(C) Les Waguespack, Ph.D. 2005

Class Diagrams

diagram <default>

Classes

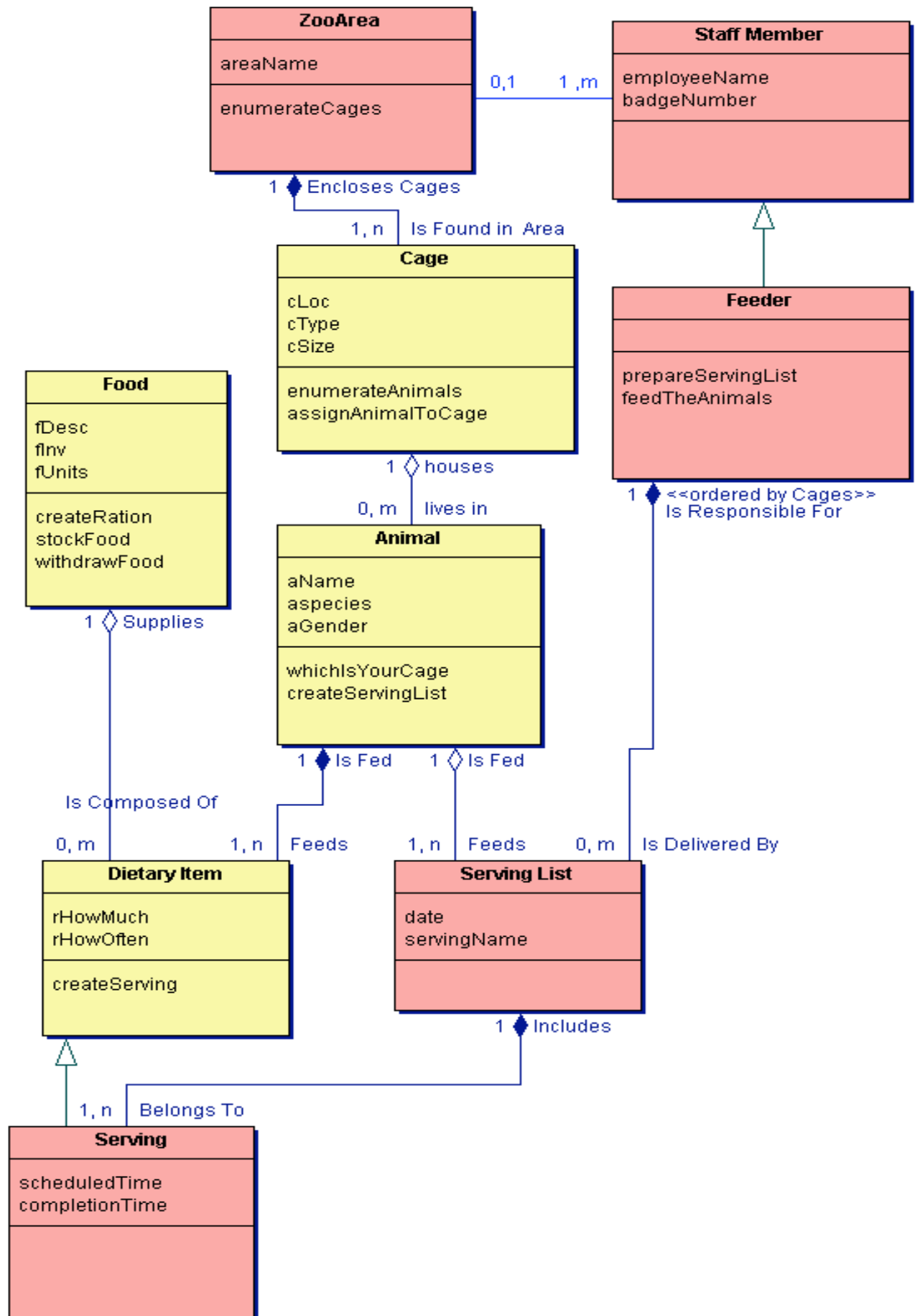
class Animal
class Cage
class Dietary_Item
class Feeder
class Food
class Serving
class Serving_List
class Staff_Member
class ZooArea

Class Diagrams



Class Diagram <default>

package: <default>



This diagram is the third iteration of the ZooKeeper narrative intended to model the use of classes and behaviors to appropriately distribute responsibilities within the modeling domain.

(C) Les Waguespack, Ph.D. 2005

Class Nodes

Animal
Cage
Dietary_Item
Feeder
Food
Serving
Serving_List
Staff_Member
ZooArea

Class Detail

Class Animal

```
public class Animal
```

This is an animal housed in the zoo.

Field Summary

private int	aGender The gender of this animal.
private int	aName The given name of the animal.
private int	aspecies The biological species of this animal.
private Dietary_Item	lnkRation
private Serving_List	lnkServingList This is a collection of one or more serving lists for a particular animal.

Method Summary

public Serving_List	createServingList (Animal theanimal, int howmuch, int howoften) This service creates a list of food servings based upon the specific dietary items designated for this animal.
public Cage	whichIsYourCage () This service returns a link to the cage in which this animal is domiciled.

Field Detail

aGender

```
private int aGender
```

The gender of this animal.

aName

```
private int aName
```

The given name of the animal.

aspecies

```
private int aspecies
```

The biological species of this animal.

InkRation

private [Dietary_Item](#) InkRation

InkServingList

private [Serving_List](#) InkServingList

This is a collection of one or more serving lists for a particular animal.

Method Detail

createServingList

```
public Serving\_List createServingList(Animal theanimal, int howmuch, int howoften)
```

This service creates a list of food servings based upon the specific dietary items designated for this animal.

whichIsYourCage

```
public Cage whichIsYourCage()
```

This service returns a link to the cage in which this animal is domiciled.

Class *Cage*

```
public class Cage
```

This is an enclosure that houses an animal.

Field Summary

private int	cLoc The location of the cage.
private int	cSize Cage size: small, medium, large.
private int	cType Type of cage: moat, bars, unbarred.
private Animal	inkAnimal A cage may be empty.

Method Summary

public void	assignAnimalToCage (Animal theAnimal) This service allows a zookeeper to assign a particular animal to a particular cage.
public Animal	enumerateAnimals () This service successively returns a link to each of the animals housed in it.

Field Detail

cLoc

```
private int cLoc
```

The location of the cage.

cSize

```
private int cSize
```

Cage size: small, medium, large.

cType

```
private int cType
```

Type of cage: moat, bars, unbarred.

InkAnimal

```
private Animal InkAnimal
```

A cage may be empty. Every animal must be in a cage.

Method Detail**assignAnimalToCage**

```
public void assignAnimalToCage(Animal theAnimal)
```

This service allows a zookeeper to assign a particular animal to a particular cage.

enumerateAnimals

```
public Animal enumerateAnimals()
```

This service successively returns a link to each of the animals housed in it.

Class *Dietary_Item*

```
public class Dietary_Item
```

This is a particular ration definition of food for a specific animal.

Field Summary

private int	rHowMuch How many units of the designated food are allotted to one ration for the designated animal.
private int	rHowOften The number of times during the feeding period that this animal is given this ration (e.g.

Method Summary

public void	createServing() This service withdraws food from the food warehouse and prepares a single serving of same for its particular animal.
-------------	--

Field Detail**rHowMuch**

```
private int rHowMuch
```

How many units of the designated food are allotted to one ration for the designated animal.

rHowOften

```
private int rHowOften
```

The number of times during the feeding period that this animal is given this ration (e.g. twice a week, everyday, etc.)

Method Detail

createServing

```
public void createServing()
```

This service withdraws food from the food warehouse and prepares a single serving of same for its particular animal.

Class Feeder

```
Staff_Member
|
+--Feeder
```

```
public class Feeder
```

Extends:

[Staff_Member](#)

This is a specially trained staff member who is responsible for the care and feeding of the animals.

Field Summary

private Serving_List	InkServingList A serving list is the sole responsibility of a single feeder staff member.
--------------------------------------	---

Method Summary

public void	feedTheAnimals() This service actually brings the servings to each cage to feed the animals.
public void	prepareServingList(ZooArea theArea) This service prepares a list of food servings derived from the dietary needs of each animal.

Field Detail

InkServingList

```
private Serving\_List InkServingList
```

A serving list is the sole responsibility of a single feeder staff member. A feeder may be in the process of delivering a serving list or have completed same, thus having no current feeding list to work with.

The serving lists are ordered according to the adjacency of the cages in the area. This is accomplished by the order that the ZooArea returns each of the cages in its EnumerateCages service.

Method Detail

feedTheAnimals

```
public void feedTheAnimals()
```

This service actually brings the servings to each cage to feed the animals.

prepareServingList

```
public void prepareServingList(ZooArea theArea)
```

This service prepares a list of food servings derived from the dietary needs of each animal.

Class *Food*

```
public class Food
```

This is a category of food which is stored in the zoo warehouse for the feeding of the animals.

Field Summary

private int	fDesc A description of the food type (i.e.
private int	fInv The number of units of this food found in the food storage.
private int	fUnits The type of units with which this food is measured.
private Dietary_Item	lnkRation A collection of dietaryitem objects created from a specific food type.

Method Summary

public void	createRation (Animal theanimal, int howmuch, int howoften) This service creates a dietary item for a specific animal designating the amount and frequency of this ration for that animal.
public void	stockFood () This service updates the current inventory of this food when supplies are placed in the warehouse.
public boolean	withdrawFood () This service notes the withdrawal of food of this type from the warehouse.

Field Detail**fDesc**

```
private int fDesc
```

A description of the food type (i.e. Meat, Fish, Grain, etc.)

fInv

```
private int flnv
```

The number of units of this food found in the food storage.

fUnits

```
private int fUnits
```

The type of units with which this food is measured.

lnkRation

```
private Dietary\_Item lnkRation
```

A collection of dietaryitem objects created from a specific food type.

Method Detail**createRation**

```
public void createRation(Animal theanimal, int howmuch, int howoften)
```

This service creates a dietary item for a specific animal designating the amount and frequency of this ration for that animal.

stockFood

```
public void stockFood()
```

This service updates the current inventory of this food when supplies are placed in the warehouse.

withdrawFood

```
public boolean withdrawFood()
```

This service notes the withdrawal of food of this type form the warehouse. If insufficient food is on hand the service fails.

Class *Serving*

```
Dietary_Item
|
+--Serving
```

```
public class Serving
```

Extends:

Dietary_Item

A specialization of DietaryItem indicating a physical instance of food to be given to an animal.

Field Summary

private int	completionTime Time the serving was actually delivered.
private <i>EasterStandardTime</i>	scheduledTime Time the serving is sheduled to be delivered.

Field Detail**completionTime**

```
private int completionTime
```

Time the serving was actually delivered.

scheduledTime

```
private EasterStandardTime scheduledTime
```

Time the serving is sheduled to be delivered.

Class *Serving_List*

```
public class Serving_List
```

This is a zoo staff member whose responsibility is to manage the feeding of the animals in the zoo.

Field Summary

private <i>CalendarDay</i>	date The calendar date that this serving list is intended to be fed to the animal.
private <i>Serving</i>	lnkRation A collection of servings to be delivered to a particular animal.

Field Summary

private String	servingName A string indicating the name of the serving list.
-----------------------	---

Field Detail**date**private **CalendarDay** date

The calendar date that this serving list is intended to be fed to the animal.

InkRationprivate **Serving** InkRation

A collection of servings to be delivered to a particular animal.

servingNameprivate **String** servingName

A string indicating the name of the serving list.

Class *Staff_Member*

public class Staff_Member

This is the general representation of a zoo staff member.

Field Summary

private int	badgeNumber
private int	employeeName

Field Detail**badgeNumber**private **int** badgeNumber**employeeName**private **int** employeeName**Class *ZooArea***

public class ZooArea

This is a collection of cages designated as an area for assigning zoo staff.

Field Summary

private String	areaName This is the name of the zoo area which encloses a series of cages.
private Cage	InkCage This records the assignment of cages to an area.

Field Summary

private Staff_Member	InkFeeder All areas have one or more staff assigned.
--------------------------------------	--

Method Summary

public Cage	enumerateCages () This service successively returns a link to each of the cages belonging to this area.
-----------------------------	--

Field Detail**areaName**

private [String](#) areaName

This is the name of the zoo area which encloses a series of cages.

InkCage

private [Cage](#) InkCage

This records the assignment of cages to an area. Every area has one or more cages. Every cage belongs to an area.

InkFeeder

private [Staff_Member](#) InkFeeder

All areas have one or more staff assigned. A staff member may or may not be assigned to a particular area.

Method Detail**enumerateCages**

public [Cage](#) enumerateCages ()

This service successively returns a link to each of the cages belonging to this area.