CS360 Object Modeling Handout 1

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This scenario describes the Zookeeper's problem space and business rules for modeling the zoo.   *L. J. Waguespack, Ph.D.*

The Bentley Zoo Narrative

"The Bentley Zoo is composed of a collection of exotic and domestic animals housed in modern enclosures for the protection of the animals and the visiting public.

The enclosures (also known as cages to the zoo staff) are grouped in three areas of the zoo grounds and designated for favorite animal foods: Apple, Banana, and Carrot. There are main enclosures designated by area and number (e.g. A1, B2, C3). Within these buildings are separate animal cages and also numbered (e.g. A1.1, A1.2, B2.3, etc.). Some enclosures have special characteristics such as barred or unbarred confinement or open enclosures protected by moats. Cages may be small, medium or large in size.

Animals are categorized by species (e.g. Lion, Panther, Monkey, etc.). When a new animal arrives at the zoo it is given a name (if it doesn't already have one) which is unique within their species (.e.g. Molly the panther, Sam the monkey, etc.). Each animal's gender is recorded to manage their social groups. Each animal is assigned to a specific enclosure.

Animals are fed from food stores maintained in the zoo's warehouse. These foods are purchased in various denominations (pounds, bales, or bushels). Some foods for exotic zoo residents are actually purchased by the container without any quantity metric.

Because of the varying ages and health conditions of each animal their diets are regulated individually. An animal's diet consists of one or more rations of a particular food delivered in specific quantities per day on 1 to 7 days each week. One of the keeper's primary tasks is to prepare the delivery of animal rations to their respective cages on their designated feeding schedule."

Object Modeling the Bentley Zoo

Given the narrative above, your task is to develop a useful class diagram in the UML modeling syntax.

The majority of the information you have been given is underlined descriptive much as you would expect if you were attempting to determine how to capture and store information about the zoo in a spreadsheet. (In fact you may wish to refer to the database model of this problem for relevant information.)

A common shortcoming of object modeling is being preoccupied with this "data view" of the problem space. The data view is very important and must be well understood to create a useful object model, but we must not forget to look at the underlined behavior in this problem domain as well. This may require that we are creative in lending "animation" to otherwise inanimate objects like "food," "cage" or "ration." Although they may be inanimate in the "real world" we want them to be "smart" objects in our object model.

The specific behavior you're being asked to model in this domain is the process of meal preparation for the animals in the zoo. Which classes in our model know how to perform which part of the task of getting all the animals fed?