**package** lemurtester;

**import** javax.swing.JOptionPane;

**public** **class** LemurDatabase

{

**public** **static** **void** main(String[] args)

{

//Variable Declarations and Initializations

**int** numLemur, menu;

String output = "";

Lemur lemur;

**try**

{

numLemur = Integer.*parseInt*(JOptionPane.*showInputDialog*(**null**,"How many lemurs do you want to add to the list?", "Lemur Database", JOptionPane.***QUESTION\_MESSAGE***));

}//end try

**catch**(Exception e)

{

numLemur = 1;

}//end catch

**for**(**int** i = 1; i <= numLemur; i++)

{

menu = 0;

**while**(menu > 3 || menu < 1)

{

**try**

{

menu = Integer.*parseInt*(JOptionPane.*showInputDialog*(**null**,"Please enter the type of lemur " + i + " to add:\n1. Tree Lemur\n2. Desert Lemur\n3. Jungle Lemur", "Lemur Database", JOptionPane.***QUESTION\_MESSAGE***));

}//end try

**catch**(Exception e)

{

menu = 0;

}//end catch

}//end loop

System.***out***.print("Creating ");

**switch**(menu)

{

**case** 1: lemur = **new** TreeLemur();

System.***out***.print("Tree Lemur...\n");

**break**;

**case** 2: lemur = **new** DesertLemur();

System.***out***.print("Desert Lemur...\n");

**break**;

**default**: lemur = **new** JungleLemur();

System.***out***.print("Jungle Lemur...\n");

}//end switch

output += "\n\n" + lemur.toString();

}//end loop

System.***out***.println("Displaying list of all lemurs:" + "\n=============================================================================" + output);

}//end main

}//end class

**package** lemurtester;

**import** java.util.Random;

**public** **class** Mammals

{

**private** **int** itsAge;

**private** **int** itsWeight;

**private** **boolean** male;

**private** String breed;

**private** Random randomGenerator = **new** Random();

**public** Mammals()

{

itsAge = (**int**) (Math.*random*() \* 19 + 1);

itsWeight = (**int**) (Math.*random*() \* 5 + 1);

male = randomGenerator.nextBoolean();

}//default constructor

**public** **int** getAge()

{

**return** itsAge;

}//end getAge

**public** **int** getWeight()

{

**return** itsWeight;

}//end getWeight

**public** **void** setAge(**int** newAge)

{

itsAge = newAge;

}//end setAge

**public** **void** setWeight(**int** newWeight)

{

itsWeight = newWeight;

}//end setWeight

**public** String getBreed()

{

**return** breed;

}//end getBreed

**public** **void** setBreed(String newBreed)

{

breed = newBreed;

}//end setBreed

**public** **boolean** getMale()

{

**return** male;

}//end getMale

**public** **void** setMale(**boolean** gender)

{

male = gender;

}//end setMale

**public** String toString()

{

String output = "";

output += "\nAge:" + itsAge;

output += "\nWeight:" + itsWeight;

output += "\nGender:";

**if**(male == **true**)

{

output += " male";

}//end if

**else**

{

output += " female";

}//end else

**return** output;

}//end toString

}//end class

**package** lemurtester;

**public** **class** Lemur **extends** Mammals

{

//private instance variables

**private** String location, classification, coat, role;

**public** Lemur()

{

**super**();

setLocation("Madagascar");

setClassification("Prosimian");

setCoat("Fur");

**if**(getMale() == **true**)

{

setRole("Non-dominant (Male)");

}//end if

**else**

{

setRole("Dominant (Female)");

}//end else

}//end constructor

**public** String getLocation() {

**return** location;

}

**public** **void** setLocation(String location) {

**this**.location = location;

}

**public** String getClassification() {

**return** classification;

}

**public** **void** setClassification(String classification) {

**this**.classification = classification;

}

**public** String getCoat() {

**return** coat;

}

**public** **void** setCoat(String coat) {

**this**.coat = coat;

}

**public** String getRole() {

**return** role;

}

**public** **void** setRole(String role) {

**this**.role = role;

}

**public** String toString()

{

String output = "";

output = **super**.toString();

output += "\nLocation:" + location;

output += "\nClassification:" + classification;

output += "\nCoat:" + coat;

output += "\nRole: " + role;

**return** output;

}//end toString

}//end class

**package** lemurtester;

**public** **class** TreeLemur **extends** Lemur

{

//Instance Variables

**private** String packSize, nutrition, mane;

**public** TreeLemur()

{

**super**();

setPackSize("Large groups");

setNutrition("Fruit");

setMane("Red");

}//end constructor

**public** String getPackSize() {

**return** packSize;

}

**public** **void** setPackSize(String packSize) {

**this**.packSize = packSize;

}

**public** String getNutrition() {

**return** nutrition;

}

**public** **void** setNutrition(String nutrition) {

**this**.nutrition = nutrition;

}

**public** String getMane() {

**return** mane;

}

**public** **void** setMane(String mane) {

**this**.mane = mane;

}

**public** String toString()

{

String output = "Tree Lemur:";

output += **super**.toString();

output += "\nPackSize: " + packSize;

output += "\nNutrition: " + nutrition;

output += "\nMane: " + mane;

**return** output;

}//end toString

}//end class

**package** lemurtester;

**public** **class** DesertLemur **extends** Lemur

{

//Instance Variables

**private** String nutrition, coatColour, infantMortality;

**private** **double** infantMortalityRate;

**public** DesertLemur()

{

**super**();

setNutrition("Water from Cacti");

coatColour = "White";

setInfantMortality("Puncture Wounds from Cacti");

setInfantMortalityRate(2/3);

}//end class

**public** String getNutrition() {

**return** nutrition;

}

**public** **void** setNutrition(String nutrition) {

**this**.nutrition = nutrition;

}

**public** String getCoatColour() {

**return** coatColour;

}

**public** **void** setCoatColour(String coat) {

coatColour = coat;

}

**public** String getInfantMortality() {

**return** infantMortality;

}

**public** **void** setInfantMortality(String infantMortality) {

**this**.infantMortality = infantMortality;

}

**public** **double** getInfantMortalityRate() {

**return** infantMortalityRate;

}

**public** **void** setInfantMortalityRate(**double** infantMortalityRate) {

**this**.infantMortalityRate = infantMortalityRate;

}

**public** String toString()

{

String output = "Desert Lemur:";

output += **super**.toString();

output += "\nNutrition: " + nutrition;

output += "\nColour: " + coatColour;

output += "\nInfant Mortality: " + infantMortality;

output += "\nInfant Mortality Rate: " + infantMortalityRate;

**return** output;

}//end toString

}//end class

**package** lemurtester;

**public** **class** JungleLemur **extends** Lemur

{

//Instance Variables

**private** String coatColour, mane, packSize, nutrition;

**public** JungleLemur()

{

**super**();

coatColour = "Black or blue";

mane = "None";

packSize = "Small groups";

nutrition = "Mice, snails, and insects";

}//end class

**public** String getNutrition() {

**return** nutrition;

}

**public** **void** setNutrition(String nutrition) {

**this**.nutrition = nutrition;

}

**public** String getCoatColour() {

**return** coatColour;

}

**public** **void** setCoatColour(String coat) {

**this**.coatColour = coat;

}

**public** String getMane() {

**return** mane;

}

**public** **void** setMane(String mane) {

**this**.mane = mane;

}

**public** String getPackSize() {

**return** packSize;

}

**public** **void** setPackSize(String packSize) {

**this**.packSize = packSize;

}

**public** String toString()

{

String output = "Jungle Lemur:";

output += **super**.toString();

output += "\nColour: " + coatColour;

output += "\nMane: " + mane;

output += "\nPack Size: " + packSize;

output += "\nNutrition: " + nutrition;

**return** output;

}//end toString

}//end class











