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// Unit 2 Coding Quiz - File I/O

import java.io.\*;

class Animal // Animal class. Just to make life easier :)

{

String name;

String sound;

int amount;

// We could always make more variables here, for example, a colour or age variable.

Animal(String n, String s, int a)

{

name=n;

sound=s;

amount=a;

}

void Add()

{

amount++;

}

// The rest are unnecessary for my needs, but good for reusability!

void Sub()

{

amount--;

}

void Add(int change)

{

amount+=change;

}

void Sub(int change)

{

amount-=change;

}

}

public class Unit2IOQuiz {

public static void main(String[] args) {

// Change these if needed :)

String fileInName = "animal3.txt";

String fileOutName = "sounds3.txt";

// Add more animals! Keep their sounds and names in order :)

String[] names = {"cow","horse","sheep","duck","pig","cat"};

String[] sounds = {"moo","neigh","baa","quack","oink","meow"};

// And now for the code ;)

Animal[] animals = new Animal[names.length];

for(int i=0;i<animals.length;i++) // New Animal object for each type

animals[i]=new Animal(names[i],sounds[i],0);

try

{

FileReader fileIn = new FileReader(fileInName);

BufferedReader read = new BufferedReader(fileIn);

FileWriter fileOut = new FileWriter(fileOutName);

PrintWriter print = new PrintWriter(fileOut);

int length = fileLength(fileInName);

// Print sounds

for(int i=0;i<length;i++)

{

String name = read.readLine();

boolean found = false;

for(int j=0;j<animals.length;j++)

{

if(name.equalsIgnoreCase(animals[j].name))

{

animals[j].Add(); // add 1 to the amount of that animal

print.println(animals[j].sound);

found=true;

}

}

if(!found)

System.out.println("\nError.\nThe animal \"" + name + "\" was not found in our system.\nPlease add the animal and its sound to the program code.\n");

}

// Print amounts of each animal

print.println();

print.println("\nOld MacDonald has:");

for(int i=0;i<animals.length;i++)

print.println(animals[i].amount + " " + animals[i].name + isPlural(animals[i].amount, "s"));

System.out.println("Done!");

read.close();

print.close();

}

catch (FileNotFoundException e)

{

System.out.println("\nError.\nThe input file could not be found.\n");

}

catch (IOException e)

{

System.out.println("\nError.\nThere was a problem reading from the file.\n");

}

}

public static int fileLength(String fileName)

{

int lines = 0;

try

{

FileReader file = new FileReader(fileName);

BufferedReader read = new BufferedReader(file);

boolean reachedEnd = false;

while(!reachedEnd)

{

if(read.readLine()==null)

reachedEnd=true;

else

lines++;

}

read.close();

}

catch (Exception e)

{

System.out.println("\nError.\nWe could not successfully determine the length of the input file.\n");

}

return lines;

}

public static String isPlural(int quantity, String adder)

{

// returns an "s" if there is more than one of the animal.

if(quantity>1)

return adder;

else

return "";

}

}