Test assignment

The following animals live on the village yard:

1. Dog: "Rex"

Breed: "Shepherd"

Favorite food: "Royal Canin" Best friend forever: "Tom"

2. Dog "Max"

Breed: "Shepherd"

Favorite food: "Purina ONE" Best friend forever: "Jay"

3. Dog "Tom"

Breed: "Husky"

Favorite food: "Royal Canin" Best friend forever: "Rex"

4. Dog "Jay"

Breed: "Husky"

Favorite food: "Purina ONE" Best friend forever: "Max"

5. Cat "Zoe"

Favorite food: "9Lives"
Best friend forever: "Ada"

6. Cat "Ada"

Favorite food: "Purina Friskies" Best friend forever: "Zoe"

7. Chicken "Meg"

Favorite food: "Purina Layena"

Lays eggs: yes Wingspan: 0.4m

Best friend forever: "Lis"

8. Chicken "Lis"

Favorite food: "Manna Pro"

Lays eggs: yes Wingspan: 0.35m

Best friend forever: "Meg"

9. Chicken "Emi"

Favorite food: "Purina Layena"

Lays eggs: no Wingspan: 0.25m

Best friend forever: "Lua"

10. Chicken "Lua"

Favorite food: "Manna Pro"

Lays eggs: no Wingspan: 0.3m

Best friend forever: "Emi"

11. Rooster "Bob"

Favorite food: "Manna Pro"

Wingspan: 0.5m

12. Parrot "Mac"

Favorite food: "Lafeber Original"

Wingspan: 0.33m Can speak: yes

Best friend forever: "Alf"

13. Parrot "Alf"

Favorite food: "Kaytee Fiesta"

Wingspan: 0.25m Can speak: no

Best friend forever: "Mac"

The task is to write a "10 days animals live simulation" console application.

An animal has a set of attributes and can establish or terminate friendship with few other animals from the village yard.

On start-up the app prints out all animals with their attributes.

The day starts with a message: "Day-N" (N from 1 to 10).

Every day each animal can unfriend one animal before lunchtime. If animal "A" unfriends animal "B", "B" unfriends "A" automatically. App prints out all "unfriend" events.

For example: "Alf and Bob are not friends anymore".

During lunchtime, the app prints out each animal's favorite food grouped by the brand.

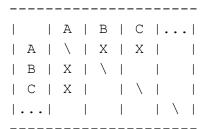
For example: "Rex and Tom are eating Royal Canin".

After lunch, each animal tries to establish a friendship with a random animal. Animal "A", asks animal "B" to become friends. If "B" accepts friendship, "A" and "B" become friends. App prints out the result, for example:

"Alf is asking Bob to be friends. Alf and Bob are friends now. (Or Bob doesn't want to be friends)"

At the end of the day the app prints out a friendship table for all animals.

For example, "A" has a friendship with "B" and "C", "B" and "C" are not friends:



Friendship rules:

- 1. "New friend" is a random animal from the village yard.
- 2. "Best friend forever" never unfriended.
- 3. If an animal has 3 or more friends, the probability to lose friend 90%, the probability to get a new friend 10%
- 4. If an animal has 2 or fewer friends, the probability to lose friend 10%, the probability to get a new friend 90%
- 5. Rules 2-4 applied for initiating friend requests and for answering as well.

Technical requirements:

Java 11 or newer, No third-party libraries except JUnit, Maven project config (pom.xml file) Unit tests are not required, but welcome.

Write a short design document describing the most important aspects (PDF or TXT format).

Notes:

If you think some part of the test assignment is unclear or there is a mistake, don't worry. Decide for yourself what would be a logical or fun thing to do, and shortly explain it in the design document.

Object-oriented design and high-quality coding will be deciding factors.