

For the scenario below identify the entities, their attributes and appropriate keys

Finsbury Happy Zoo

Finsbury Happy Zoo's concept is to show animals together in their habitats. They have a number of enclosures of different habitat types (such as forest or tundra), different sizes (square metres), each having a main feature (such as a stream or a cave). Animals of different species share the same enclosure. Each enclosure has a unique number and there can be several enclosures with the same habitat but with a different main feature or of a different size. Each animal has a unique ID, and their name, date_of_birth, diet and description are stored. When an animal is put in an enclosure, the start date is recorded, and if they are transferred to another enclosure the end date is recorded. Zoo keepers may need to make a note about a particular animal, for example "not eating well today" and this is recorded along with the date. To make sure the animals don't eat each other a species compatibility table is maintained which has the following information; speciesA, speciesB, compatibility_rating (5 for happy neighbours to 1 for bitter enemies). Species are identified by their name, and a description of the species and their habitat type are recorded. Species are matched against enclosures by Zoo staff, and if suitable the maximum number of animals of a particular species for a particular enclosure is recorded to prevent overcrowding.

Enclosure (Entity)

- Enclosure Number – ENC123 (key)
- Habitat Type – Forest
- Size – 500 square meters
- Main Feature – Stream

Animal (Entity)

- Animal ID – AN456 (key)
- Name – Simba
- Date of Birth – 12th May 2019
- Diet – Carnivore
- Description – Lion, Male, Healthy

Species (Entity)

- Species Name – Panthera leo (key)
- Description – Large carnivorous cat, native to savannas
- Habitat Type – Savanna

Compatibility (Entity)

- Species A – Panthera leo (foreign key to Species)
- Species B – Panthera tigris (foreign key to Species)
- Compatibility Rating – 2 (1 for enemies, 5 for highly compatible)

Species Enclosure Suitability (Entity)

- Species Name – Panthera leo (foreign key to Species)
- Enclosure Number – ENC123 (foreign key to Enclosure)
- Max Number of Animals – 5

Enclosure Assignment (Event/Action Entity)

- Animal ID – AN456 (foreign key to Animal)
- Enclosure Number – ENC123 (foreign key to Enclosure)
- Start Date – 10th August 2023
- End Date – (null if still in the same enclosure)

Animal Notes (Event/Action Entity)

- Animal ID – AN456 (foreign key to Animal)
- Note Date – 15th August 2023
- Note – "Not eating well today"

Example Queries:

1. Which enclosures are suitable for species with the habitat type "Savanna"?
2. How many lions (*Panthera leo*) are currently in enclosure ENC123?
3. What is the compatibility rating between lions (*Panthera leo*) and tigers (*Panthera tigris*)?
4. Which animals were transferred out of an enclosure between June and August 2023?
5. What notes were recorded for animal AN456 in the last 30 days?