TASK

Design a **model and** write a Java **program** to **simulate an ecosystem**.

- The ecosystem consists of a **river** containing three types of animals, **bears and otter and fish**.
- Each animal is either **male or female**.
- All the animals in the river **might move** in a random direction.
- If two animals are about to **collide** then:
    - If it is a bear and another species, then the **bear eats** the **other animal**.
    - If it is an otter and a fish, then the **otter eats** the **fish**.
    - If the animals are of the same species but **different gender**, then they give birth to **new animals** of that type.
        - Fish give birth to 7 new fish.
        - Otter give birth to 3 new otter.
        - Bears give birth to 2 new bear.
    - If two fish of the same gender are about to collide, then they will not move. They stay where they are.
    - If two otter of the same gender are about to collide, then they will not move. They stay where they are.
    - If two **bears** of the same gender collide, then they **fight**. The stronger one wins and the weaker bear vanishes.
        - Each bear has a random strength. If two bears are equally strong, then the bear which is about to move wins. (He has the advantage of the attacker.)
- All **animals age.**
    - A fish lives until the end of its 5th year (the age is between 0 and 5), unless it is killed earlier.
    - An otter lives until the end of its 7th year (the age is between 0 and 7), unless it is killed earlier.
    - A bear lives until the end of its 9th year (the age is between 0 and 9), unless it is killed earlier.
- There is limited space for each species.
    - One **species** can **never occupy more than 60%** of an ecosystem.