**Game of life**

**Concurrency Problems and Solutions**

1. **When two or more cells(threads) try to eat the same food resource at the same time**

We will synchronize the eat method from the Food class so that the threads will wait if the method is already in use by another thread.

A picture containing chart

Description automatically generated

1. **When two or more sexuate cells(threads) try to reproduce with the same cell**

In this case the multiply method will be synchronized.

Chart, scatter chart

Description automatically generated

1. **When two or more cells die at the same time and create new food resources**

The increase food resource method will be synchronized so that the food resource counter will be updated accordingly.

Diagram

Description automatically generated

1. **When two or more cells want to go to the same place (one square in our matrix) at the same time.**

We will use synchronized blocks in order to make the cells occupy their place in a suitable way.

1. **When a number of cells die at the same time, producing resources and the other cells are already eating another food resources.**