**Classes:**

Right now we have 2 classes:

* Table: this class is our GENE in our genetic algorithm
  + int Type: 0 if it is a rectangle table, 1 if it´s an oval table;
  + int coordinate X;
  + int coordinate Y;
  + int width;
  + int height;
  + int radius;
* Room: this class is our CHROMOSSOME in our genetic algorithm
  + int coordinate X;
  + int coordinate Y;
  + int width;
  + int height;
  + Tables[] listOfTables;

**First generation:**

We receive a Json file of a Room or we create a Room with predefined dimension and number of Rectangle and Oval tables. Our first population will be a Room with the specified dimensions and the tables random positioned inside the room.

**Evaluation:**

Calculate the distance between the origin of 2 tables, if this distance is less than the minimum recommended distance between 2 tables ( 90 cm) subtract a penalty in the distance. Take the rooms with the largest distances between the tables.

**Crossing over**

Change a random number of tables of the same type between 2 rooms;