Relational Schema

User = (username, first_name, last_name, birthdate, address)

Employee = (username[fk1], taxID, hired, salary, experience)

fk1: username ->User.Username

Owner = (username[fk2], debt)

fk2: username ->User. Username

Restaurant = (name, spent, rating, location[fk3])

fk3: location -> Location.label

Service = (ID, name, revenue, location[fk4])

Fk4: location -> Location.label

Pilot = (username[fk5], licence_type, experience)

fk5: username ->Employee.username

Worker = (username[fk6], service[fk15], is_Manager)

fk6: username ->Employee.username

fk15: service -> Service.ID

Location = (label, x_coord, y_coord, space)

Ingredient = (barcode, iname, weight)

Fund = (Restaurant[fk7], invested, dt_made, username[fk16])

fk7: Restaurant -> Restaurant.name

fk16: username -> Owner.username

Drone = (serviceId[fk8], tag, fuel, cost, capacity, sales, weight hoverLocation[fk9], ControllerPilot[fk10])

fk8: serviceId -> Service.ID

fk9: hoverLocation -> Location.label, hoverLocation is non-null

fk10: ControllerPilot -> Pilot.username

Contain = (<u>Drone_serviceId</u>, <u>Drone_tag</u> [fk11], <u>ingredient</u>[fk12], quantity)

fk[11]: Drone_serviceId,Drone_tag -> Drone.serviceId, Drone.tag

fk[12]: ingredient -> Ingredient.barcode

Swarm = (FollowerDrone_serviceId, FollowerDrone_tag [fk13], LeadDrone_serviceId, LeadDrone_tag [fk14])

fk[13]: FollowerDrone_serviceId, FollowerDrone_tag -> Drone.serviceId, Drone.tag

fk[14]: LeadDrone _serviceId, LeadDrone _tag -> Drone.serviceId, Drone.tag

Unhandled Constraints List

- Ensure that a user must be an employee or an owner or both.
- Ensure that each service has at least one worker that works for that service.
- Ensure pilots have a valid license to fly a drone.
- Ensure drones identify with a specific service.
- Ensure drones can be flown by only one pilot at a time.
- Ensure that drones always fly in swarms.
- Ensure drones can only get repaired or refuel at their original location.
- Ensure that each drone must be owned by any service.
- Ensure that each drone must hover at any location at a time.
- Ensure that only a worker can manage a service.
- Ensure tax identifiers use the “xxx-xx-xxxx” format.
- Ensure migrating drones have the amount of fuel necessary for the distance they’re traveling.