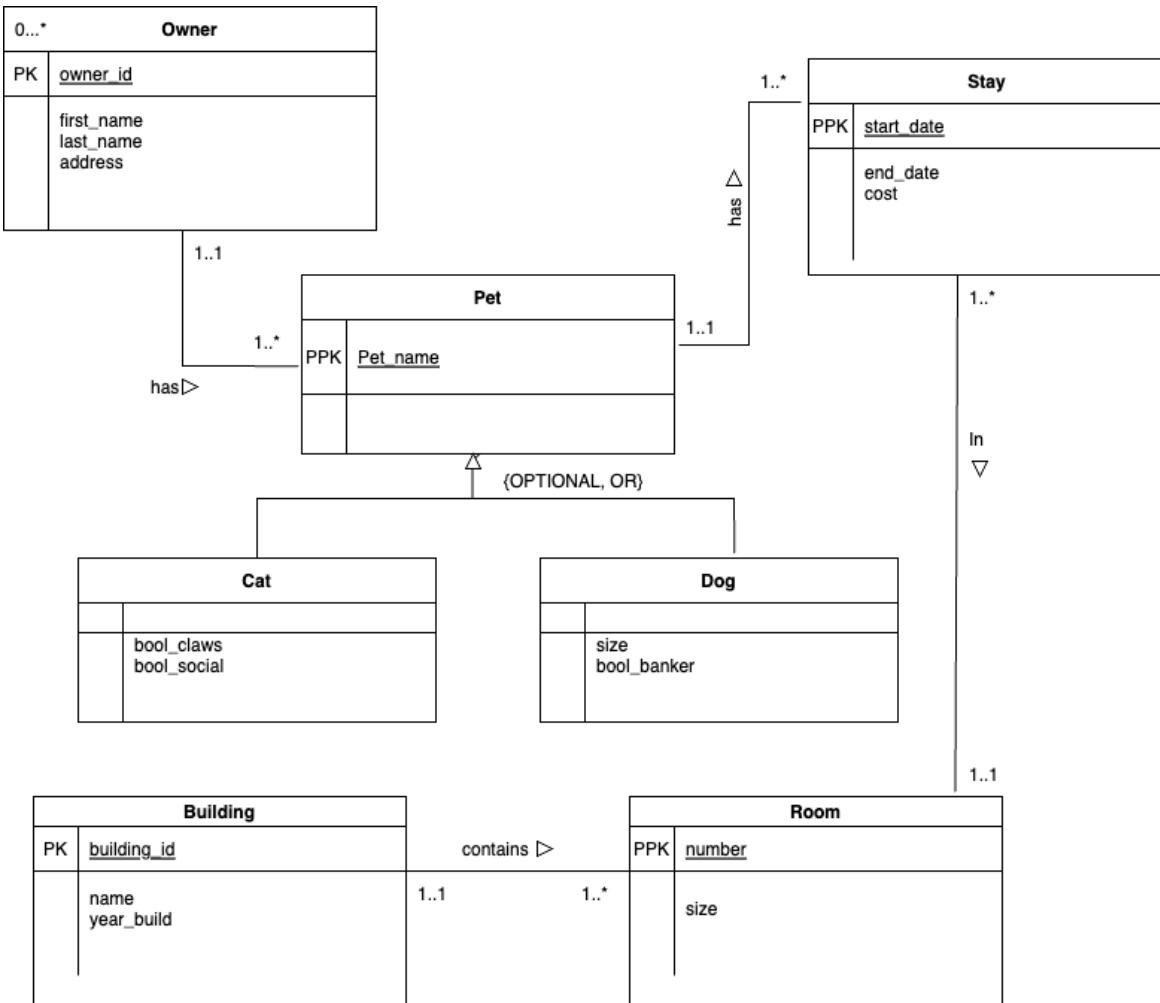
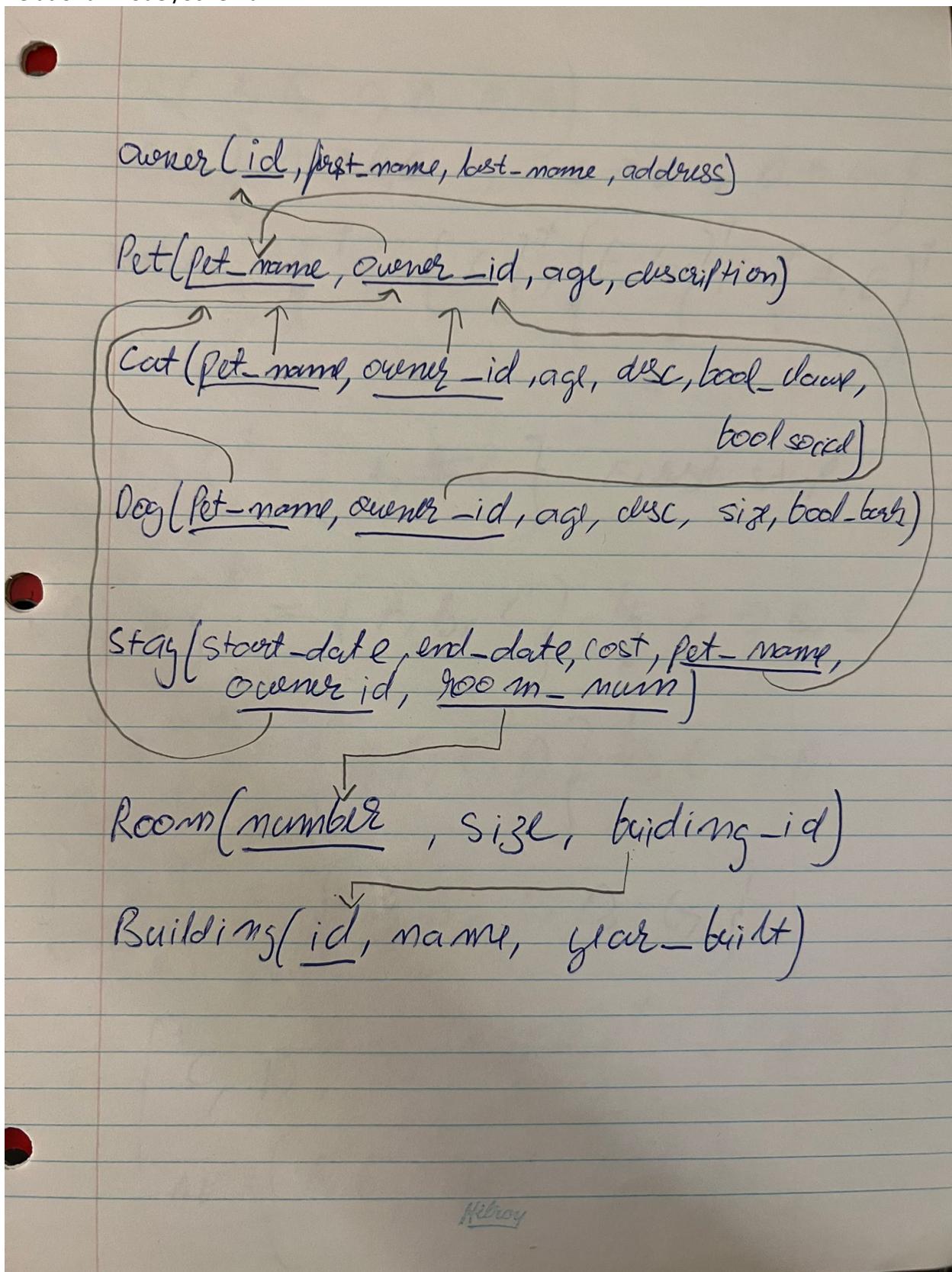


Enhanced Entity Relationship (EER) Diagram:



Relational Model/Schema:



Functional Dependencies:

Functional Dependencies:

Owner:

$id \rightarrow first_name, last_name, address$

Pet:

$Pet_name, owner_id \rightarrow agl, description$

Cat:

$Pet_name, owner_id \rightarrow agl, description,$
 $bool_claws, bool_social$)

Dog:

$Pet_name, owner_id \rightarrow agl, description,$
 $size, bool_barker$

Stay:

$start_date \rightarrow end_date, cost$

Room:

$number, building_id \rightarrow size.$

Building:

$id \rightarrow name, year_built.$

Normalization:

1NF – As there are no multivalued attributes all relations are in 1NF.

2NF – 1NF + As there are no partial dependencies in any relation, all relations are in 2NF.

3NF – 2NF + As there are no transitive dependencies in any relation, all relations are in 3NF.

In summary, all the relations satisfy the requirements of 3NF as they have a primary key and all non-key attributes are fully functionally dependent on the primary key. There are no partial dependencies or transitive dependencies present, ensuring data integrity and normalization.