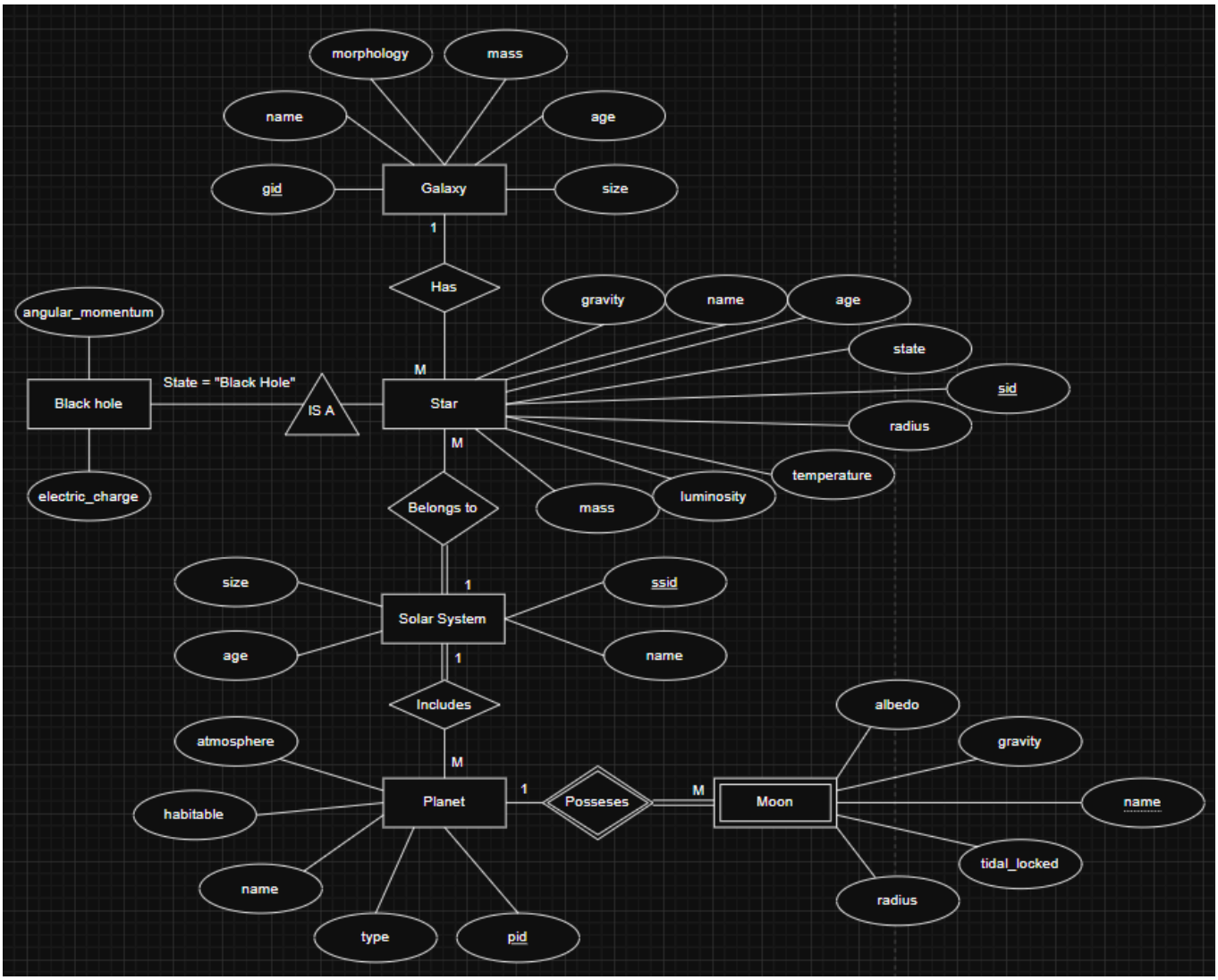
CW

Business Rules:

- **GALAXY** may have *many* **STARS**, though **STAR**, may have *at most* one **GALAXY**.
- **SOLAR SYSTEM** must belong to *at least* one **STAR**, and *at least* one **PLANET**.
- **STAR** may and a **PLANET** may, belong to *at most* one **SOLAR SYSTEM**.
- **MOON** must possess *at most* one **PLANET**, though a **PLANET** may possess *many* **MOON**s.
- **BLACK HOLE** is a **STAR** with *state* 'Black Hole'.
- **ALL** ENTITY SETS MUST EXIST IN A **GALAXY**, except for **STAR** and **BLACK HOLE** which may exist.

ERD:



Queries:

- **Query 1**: Multiple Star Systems
  - This query finds Solar Systems with 2 or more stars.
- **Query 2**: Exoplanets by Galaxy
  - This query finds the amount of Exoplanets (Planets outside Solar Systems) and groups them by the Galaxy they are in.
- **Query 3**: Rogue Stars by State
  - This query finds Rogue Stars (Stars outside of Galaxies) and groups them by their State.
- **Query 4**: Supermassive Black Holes
  - This query finds Supermassive Black Holes (Black Holes with a mass bigger or equal to 1e6)
- **BlackHole_ISA**
  - This trigger enforces the Black Hole ISA relationship with star, making it so it automatically creates and deletes Black Hole entities when a Star's state changes from or to 'Black Hole'
- **Cascade_solarSystem**
  - This trigger auto-deletes Solar Systems when they become empty. The Solar System would be deleted if the last Planet or Star is deleted — though if any non-last Star or Planet is deleted, nothing would happen.
- **Cleanup_invalid_solar_systems**
  - This trigger deletes Solar Systems that don't have at least one star and one planet.