

Assignment 1A Assumptions

1. Between OWNER and SHIP

Operators that do not operate a ship should not be registered in the company database, since OPERATOR is a particular company outside of World Cruisers, and World Cruisers should only focus on OPERATORS that pilot ships for them. Hence, an operator will at minimum pilot one ship and maximum many ships.

2. Between SHIP and CRUISE

A ship is assumed to be able to go on many cruises (one cruise at a time), as World Cruisers would logically reuse the ships if they can be reused. Buying new ships to go on each new cruise would be costly, and thus, reusing ships is more cost effective for World Cruisers. Hence, ship is minimum 1 and maximum many for ship to cruise. However, each cruise only uses one ship, hence it is 1 minimum and 1 maximum for cruise to ship.

Also, each cruise is identified by cruise id, and does not require ship code to identify each cruise as cruise id is sufficiently unique to identify each cruise.

3. Passenger and Guardian

A passenger who is a minor (below age of 18) must have 1 guardian identified by the system, where the guardian is registered as another passenger above the age of 18. Meanwhile, passengers above the age of 18 do not have a guardian registered by the system. Hence, passengers can have a minimum of 0 guardians, and a maximum of 1 passenger as a registered guardian.

A passenger who acts as a guardian may guard 1 or more minors. For example, a family where a father brings 3 children on a cruise, and the father must act as the guardian of all 3 children. Likewise, passengers who go on the trip without any children will not have any minor passengers to guard. Hence, a passenger may guard a maximum of 0 minor passengers, and a maximum of many minor passengers.

4. Between PASSENGER and MANIFEST, CABIN and MANIFEST, as well as CRUISE and MANIFEST

One of the rules states that we must have the primary keys of the singular entity in the multiple entity as foreign keys.

Therefore, the entities in our ERD that have a relationship towards Manifest would be many. The entity of MANIFEST would then have the keys from the singular entities as its foreign key. Since no surrogate key can be added to a conceptual model, we would make do with the foreign keys.