# Project Proposal

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Database Design Idea #3: Cruise Ship Company

A cruise ship company that provides holiday cruise packages to its customers requires a database to maintain its customer reservation system. The company offers several holiday packages to its customers, based on the destination or world region (e.g. South-East Asian Adventure, Mediterranean Madness), and the time of year. Importantly, a package is specific to the current season and year e.g. Carribean Cruisin' Summer 2014, Carribean Cruisin' Autum 2014, Asian Adventure Spring 2015. Therefore, a package, uniquely identified by an ID, will only ever have one ship associated with it. Conversely, a ship, over its career, will be part of many packages. Necessarily, each package is peculiar to one route, and a route will be (logically) contained in only one package. A route has many ships that service it over time, but a ship will only ever travel one route (for convenience and efficiency – travelling only back and forth from one startpoint destination to an endpoint destination). Further, a ship's route or schedule will involve many ports over its journey. One port can be included in many routes – for example, some routes will have the initial departure from the same city, and then take different courses. A package also defines the type of membership type or class that the customer will be subscribed to throughout their onboard adventure. Membership types include platinum, gold, silver, and bronze and determine the various services/assets onboard that the customer will have access to. One package has many membership types available, and these very membership types are applicable to all packages. Membership type also determines the room type allocated for a customer, such that the more lucrative the package, the more luxury afforded in terms of comfort (e.g. Gold Membership entitles the customer to a Deluxe Double Room with Balcony, etc.). A membership type is applicable to many rooms onboard the cruise liner, but a room only has one declaration of membership type (e.g. room 304 on European Express cruise is reserved for those with Platinum membership). Of course, ships have many rooms, but a room is specific to one ship. Finally, a customer can choose one package, but that same package can be chosen by many customers. A single customer can make one reservations (e.g. A family would have one booking ID; the same ID for every family member), and a reservation pertains to a single customer, where a reservation can be operationally defined as an instance of a package (which is specific to route and time of year, as above) and thus, a package will have many bookings (to be filled up). Finally, a reservation involves many rooms (e.g. in the case of families or large group bookings), but one room is involved in a single booking/reservation.

Entity List:
- Package
- Ship
- Route
- Port
- Booking
- Passenger
- Membership
- Room

| Package | M | is serviced by | 1 | Ship |

| Package | 1 | represents | 1 | Route |

| Package | 1 | involves | M | Booking |

| Package | 1 | chooses | M | Passenger |

| Package | M | consists of | M | Membership |

| Ship | M | has | 1 | Route |

| Ship | 1 | contains | M | Room |

| Route | M | covers | M | Port |

| Booking | 1 | is made by | 1 | Passenger |

| Booking | 1 | reserves | M | Room |

| Membership | 1 | includes | M | Room |