**Royce Anchor Shipping Database Design**

# **Chapter 1: Entity Relationship Diagram with Constraints and Assumptions**

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# **Chapter 2: Implementation (listing of the SQL Tables)**

1. **Container Category, Container Type, Container Tariff, and the Container**

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1. **Vessel Type and Vessel**

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1. **Customer, Booking, Cargo**

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1. **Crew Member, Crew Position, Crew Assignment, and Crew Rank**

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1. **Department and Certification Type**

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1. **Tracking Event, Voyage, and Schedule**

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1. **Service Network, Route, the Port and Office**

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1. **Junction Tables (Route and port called Route stop, Port Schedule, Vessel Type Crew Requirement, Crew Certification, and Position Certification Requirement)**

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1. **Lookup Tables (Port office address, Rank category, Unit of measure, Port type, Cargo type, Event type, Currency, Schedule status, Booking Status, and Voyage status)**

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**Chapter 3: Discussion of Data entered and Proof of multiplicity**

1. **I used generative AI to generate sample data to populate my table, based on 9 real service networks. The data was entered into all my relational tables in a way that carefully demonstrated multiplicity (One-to-many relationships). To the best of my knowledge and ability, I tried to ensure that the data data aligns with real-world scenarios in the shipping industry for booking operations, container tracking, and port movements.**
2. **A Schedule can consist of multiple voyages**

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1. **A Customer can have many bookings**

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1. **A Customer can book more than 1 Container**

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1. **A Container has several tracking events.**

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1. **A Vessel has many Crew assignment**

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1. **A Crew member can have more than 1 certificate**

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1. **A department can have more than 1 member in a crew position**

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1. **A schedule includes multiple Port stops**

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1. **A route can have multiple port stops**

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1. **A vessel type requires several crew positions**

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1. **A position can have more than 1 certification type**

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