SpaceX Database Management System

Requirement Analysis

23, Nov 2020

Batch No - 09

Database Composition

Entities

1. Rocket
2. Payloads
3. Missions
4. Launch Pad
5. Drone Ships
6. Administrators

Relations

1. Launches **(Launch Pad - Launches - Rocket)**
2. Assigned **(Mission - Assigned to - Rocket)**
3. Delivers **(Payload - Delivered by - Rocket)**
4. First stage Recovery **(Rocket - First Stage Recovered by - Drone Ship)**

Attribute List

1. Rocket

- Name
- Type
- Stages
- Rocket_id
- Active
- Country
- Company
- cost_per_launch

2. Payloads

- payload_id
- Name
- Type
- Reuse
- Manufacturer
- Mass (mass_kg, mass_lb)
- Orbital status (reference System, orbit, regime)

3. Missions

- launch_status
- launch_id
- Name
- Date
- rocket_id
- Launchpad_id
- Payload_id

4. Launch Pad

- full_name
- name
- Status
- launchpad_id
- Coordinates (longitude, latitude)
- Location (region, TimeZone, locality)

5. Drone Ship

- Home port
- Activity
- Mass
- Roles

- ship_id
- Name
- Type

6. Administrators

- Name
- Admin_id
- Password
- Access_level

Cardinalities

1. **Rockets** will have **one-to-one** cardinality/relationship with **Drone Ships**; i.e - only one rocket's first stage is recovered at one drone ship at a time

2. **Launch Pad** will have **one-to-one** cardinality/relationship with **Rockets**; i.e - only one rocket is launched from one launch pad at a time considering the launch belonging to one manufacturer/ company.

3. **Rockets** will have **one-to-many** cardinality/relationship with **payloads**; i.e - one rocket can carry and deliver multiple payloads at once

4. **Missions** will have **one-to-one** cardinality/relationship with **Rockets**; i.e - one rocket can be assigned with one mission date at once according to the orbital mechanics