# MINI WORLD of ONE PIECE

## *Pirate Tracking Database for the Marines*

**Introduction to the Mini World:**
The Pirate Tracking Database is a comprehensive system designed to assist the Marines and the World Government in their mission to maintain order and protect the citizens from pirate threats. The miniworld includes entities modeling pirates, marine branches, bounties, and notable locations. It helps the Marines manage their resources, intelligence, and efforts to track and capture pirates effectively.

**Purpose:**

- **Data Redundancy Elimination**: Databases eliminate data redundancy by storing information in a centralized location, reducing the risk of errors caused by inconsistent data across various documents.
- **Data Analysis**: Databases support data analysis and reporting. In tracking pirates, this advantage aids in identifying trends, patterns, and actionable intelligence to combat pirate activities effectively.
- **Data Organization**: Databases allow for structured organization of data. In the above Pirate Tracking Database, we are neatly categorizing information about pirate crews, their members, bounties, and related operations, making it easy to retrieve and update information and make progressive decisions accordingly.

**Users:**
The database is intended for use by Marine officers, including Admirals, Vice Admirals, Captains, and lower-ranking officers, as well as intelligence agents and support personnel involved in anti-pirate operations.

**Applications:**
The database serves the following key applications:

- Tracking pirate crews and their movements.
- Issuing and managing bounties on wanted pirates.
- Planning and executing marine operations to capture pirates.
- Monitoring the status and ranks of marine branches.
- Evaluating the efficiency of marine operations.

# Database Requirements

## I] STRONG ENTITIES

### 1. Village

- Located on Island
  - Data type: varchar(100)
- Name (Primary Key)
  - Data type: varchar(100)
- Adult Population
  - Data type: int
- Child Population
  - Data type: int

### 2. Marine Base

- Base number (Primary Key)
  - Data type: int
- Location
  - Data type: varchar(100)
  - Composite Attribute (same structure as address)
- Number of officers
  - Data type: int

### 3. Pirate Crew

- Crew Name (Primary Key)
  - Data type: varchar(100)
  - Not NULL
- Current State
  - Data type: varchar(50)
  - If crew is active /dormant/dissolved
- Ship
  - Data type: varchar(100)
- Size of the Crew
  - Data type: int

### 4. Marines

- Marine ID (Primary Key)
  - Data type: int
- Name
  - Data type: varchar(100)
  - Composite attribute - First name + Last name
- Age
  - Data type: int
- Recruited on
  - Data type: Date
  - Composite Attribute - Day + Month + Year

### 5. Pirates

- Pirate ID (Primary Key)
  - Data type: int
  - Not NULL
- Name
  - Data type: varchar(100)
- Special Power
  - Data type: varchar(200)
  - Contains information about a remarkable skill useful to know to defeat the pirate(Can also include devil fruit that granted the powers)
  - Multi- valued attribute
  - Can be NULL
- Bounty
  - Data type: int
  - Can be NULL

## II] WEAK ENTITIES

1. **Marine Operations**
   - Operation No. (Partial Key)
     - Data type:int
   - Start Date
     - Data type: int
   - End Date
     - Data type: int
   - Status
     - Data type: varchar(100)
   - Operation Name
     - Data type: varchar(100)
   - Locations
     - Multi valued attribute
     - Data type: varchar (200)

2. **Raid**
   - Raid No. (Partial Key)
     - Data Type: int
   - Amount Stolen
     - Data Type: int
   - Date
     - Data Type: date
   - Number of deaths
     - Data Type: int

## III] RELATIONSHIPS

1. **BINARY RELATIONSHIPS**

a) Pirate (belongs to) Pirate Crew – 1:1
b) Pirate Crew (last spotted at) Village – n:1
c) Pirate (originate from) Village – n:1
d) Marine (position in) Marine Base – 1:1
e) Village (under supervision of) Marine Base – n:1

2. **TERNARY RELATIONSHIPS**

a) Pirate crew (participated in) Raid (on) Village – n:m:1
b) Village (under supervision of) Marine Base – n:1

3. **DEGREE>2 RELATIONSHIPS**

a) Marine Base (participated in) Marine Operation (on) Pirate Crew (headed by) Marine – n:l:m:1

## ASSUMPTIONS

1. Attribute type if single, is not mentioned.
2. A Marine can hold only a single position in a Marine Base at a time.
3. If multiple pirate crews raid the same village at the same time they will be considered as separate entries in the database.
4. Multiple Marine Bases can join hands for a single Marine Operation.
5. Pirate Crews do not directly attack Marine Bases.
6. Single Marine Operation can target multiple Pirate Crews

# FUNCTIONAL REQUIREMENTS

## MODIFICATIONS:

**1. *INSERT***

a) ***Raid*** entry when a new raid occurs.
b) ***Marine Operation*** entry when a new operation is initiated.
c) ***Pirate*** entry when a new pirate joins the world.
d) ***Pirate Crew*** entry when a new crew is formed.
e) ***Marine*** entry on recruitment of a marine.
f) ***Marine Base*** entry upon establishment of a new marine base.
g) ***Village*** entry when a new village is founded.

**2*. DELETE***

a) ***Pirate*** entry based on their Pirate ID if a pirate is no longer part of the world.
b) ***Pirate Crew*** entry based on Crew Name if a crew is disbanded.
c) ***Marine*** entry based on their Marine ID if a marine leaves the organization.
d) ***Marine Base*** entry based on its Base Number if a marine base is closed.
e) ***Village*** entry based on its Name if a village is abandoned.

**3. *UPDATE***

a) Bounties and powers of an existing ***Pirate*** based on their Pirate ID.
b) Information (Current State, Ship) of an existing ***Pirate Crew*** by its name.
c) Designation and posting of a ***Marine*** after a promotion,demotion or transfer.
d) Location and Number of Officers of a ***Marine Base*** based on its Base Number.
e) A ***Village***'s supervision information by a Marine Base by the village's name.
f) Information (Amount Stolen, Number of Deaths) of a ***Raid*** based on its Raid No.
g) Information (End Date, Status, Operation Name, Locations) of a ***Marine Operation*** based on its Operation No.

## RETRIEVALS:

**1*. SELECTION***

a. List all attributes of Marines in a particular marine base.
b. List details of members of a Pirate Crew.
c. List all details of Marine Operations with a specific Status.

**2*. PROJECTION***

a. Retrieve a list of Pirate Names and their respective Bounties.
b. Get a list of Marine Base Locations.
c. Retrieve a list of Pirate Crews and their respective Ships.
d. Retrieve a list of Raid Dates and the Amounts Stolen.

**3**. ***AGGREGATE***

a. Calculate the total Bounty of a Pirate Crew.

b. Find the maximum Number of Deaths in a Raid.

c. Determine the total number of successful Marine Operations conducted.

**4. *SEARCH***

a. Search for Pirates who participated in Raids on a specific Village.

b. Search for Raids with a specific Amount Stolen.

c. Search for Marine Operations in a specific month.

**5. *ANALYSIS***

a. Analyze the frequency of Marine Operations in different Locations.

b. Identify the most dangerous Pirate Crews based on their participation in Raids.

c. Analyze the success rate of Marine Operations based on their Status.

d. Trend of frequency of raids in an island over time.

## Summary:

The Pirate Tracking Database is a vital tool for the Marines in their ongoing battle against piracy in the One Piece world. By efficiently managing information related to pirate crews, bounties, marine operations, and key locations, the database helps the Marines improve their efficiency and reduce the potential for corruption, ultimately leading to a safer and more secure world.

## TEAM

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