# **Database Schema Design Document**

## **1. Introduction**

### **1.1. Purpose**

This document outlines the database schema design for the Reward application. The purpose of the schema is to define how data is organized, stored, and managed within the database. It covers the tables, relationships, data types, and constraints.

### **1.2. Scope**

The scope of this document includes:

* Database structure (tables, columns, data types)
* Relationships between entities
* Constraints and validations

## **2. Database Architecture**

### **2.1. Database Type**

* **Relational Database:** PostgreSQL or MySQL (based on the requirements)
* **Normalization:** The database will be normalized up to the 3rd Normal Form (3NF) to minimize redundancy.
* **Storage:** The database will be stored on cloud-based infrastructure or local servers, depending on the environment.

## **3. Entity-Relationship Diagram (ERD)**

An **Entity-Relationship Diagram (ERD)** visually represents the database tables (entities) and the relationships between them. This helps in understanding how data is linked.

**Example ERD for a simple Rest API application:**

* **Customer** table
* **Order / Transaction** table
* **Rewards** table

## **4. Database Tables and Columns**

### **4.1. Customer Table**

| Column | Data Type | Constraints |
| --- | --- | --- |
| CUSTOMER\_ID | INTEGER | PRIMARY\_KEY\_S  UNIQUE  NOT NULL |
| CUSTOMER\_NAME | CHARACTER | NOT NULL |
| EMAIL\_ID | CHARACTER |  |
| PASSWORD | CHARACTER | NOT NULL |
| PHONE\_NUMBER | CHARACTER |  |

### **4.2. Transaction Table**

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| Column | Data Type | Constraints |
| --- | --- | --- |
| TRANSACTION\_ID | INTEGER | PRIMARY\_KEY\_S  UNIQUE  NOT NULL |
| AMOUNT | INTEGER |  |
| CUSTOMER\_ID | INTEGER | NOT NULL |
| DATE | DATE |  |
| SPENT\_DETAILS | CHARACTER |  |

### **4.3. Reward Table**

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| Column | Data Type | Constraints |
| --- | --- | --- |
| REWARD\_ID | INTEGER | PRIMARY\_KEY\_S  UNIQUE  NOT NULL |
| CUSTOMER\_ID | INTEGER | NOT NULL |
| POINTS | INTEGER |  |
| REWARD\_MONTH | CHARACTER |  |
| REWARD\_YEAR | INTEGER |  |