# **Entity Relationship Diagram:**

**A screenshot of a computer

Description automatically generated**

# **Data Dictionary**

### Table: Employees

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample Data | Notes |
| Employee\_Id | NUMBER | 4 | - | PK | Y | 1-9999 | 1011 | Auto numbered identity |
| First\_name | VARCHAR2 | 25 | - |  | Y |  | “John” |  |
| Last\_name | VARCHAR2 | 25 | - |  | Y |  | “Doe” |  |
| Email | VARCHAR2 | 50 | - |  | Y |  | john.doe@gmail.com |  |
| Phone | NUMBER | 11 | - |  | Y | 2000000000-9999999999 | 6477117346 | Assuming North American number |
| DOB | DATE | 10 | - |  | Y |  | 2000/12/01 | Date of birth  (YYYY/MM/DD) |
| Position\_Id | NUMBER | 3 | - | FK | Y | 1-999 | 12 | Auto numbered  identity |
| Reports\_to | NUMBER | 4 | - |  | N | 1-9999 | 1240 | Managers auto numbered identity |

### Table: Positions

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample Data | Notes |
| Position\_Id | NUMBER | 4 | - | PK | Y | 1-9999 | 1234 | Auto numbered identity |
| Position\_title | VARCHAR2 | 25 | - |  | Y |  | “Sous- chef” | Job title |
| Hourly\_rate | NUMBER | 6,2 | - |  | Y | 1-9999.99 | 23.45 | Must be precise to two decimal places |

### Table: Shift

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample Data | Notes |
| Employee\_Id | NUMBER | 4 | - | PK/FK | Y | 1-9999 | 1234 | Auto numbered identity |
| Shift\_date | DATE | 10 | Current date | PK | Y |  | 2023/07/17 | Date of the shift instance  (YYYY/MM/DD) |
| Shift\_id | NUMBER | 3 | - | FK | Y | 1-999 | 12 | Auto numbered identity |
| In\_time | TIME | 8 | - |  | Y | 00:00:00 - 23:59:59 | 09:00:45 | 24-hour clock, precise to seconds |
| Out\_time | TIME | 8 | - |  | Y | 00:00:00 - 23:59:59 | 17:01:22 | 24-hour clock, precise to seconds |

### Table: Shift\_Schedule

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample Data | Notes |
| Shift\_id | NUMBER | 3 | - | PK | Y | 1-999 | 13 | Auto numbered identity |
| Shift\_type | VARCHAR2 | 25 | - |  | Y |  | Part-time | Type of shift (FT/PT) |
| Start\_time | TIMESTAMP | 8 | - |  | Y | 00:00:00 - 23:59:59 | 09:00:00 | 24-hour clock, precise to seconds  Scheduled, not actual |
| End\_time | TIMESTAMP | 8 | - |  | Y | 00:00:00 - 23:59:59 | 17:00:00 | 24-hour clock, precise to seconds  Scheduled, not actual |

### Table: Orders

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample Data | Notes |
| Order\_id | NUMBER | 9 | - | PK | Y | 1-999999999 | 1002 | Auto numbered identity |
| Employee\_Id | NUMBER | 4 | - | FK | Y | 1-9999 | 14 | Auto numbered identity |
| Order\_date | DATE | 10 | Current date |  | Y |  | 2023/07/17 | Date the order was placed  (YYYY/MM/DD) |
| Order\_time | TIME | 25 | Current time |  | Y |  | 00:00:00 - 23:59:59 | 24-hour clock, precise to seconds |
| Order\_status\_Id | NUMBER | 3 | - | FK | Y | 1-999 | 7 | Auto numbered identity |
| Order\_tip | NUMBER | 8,2 | - |  | N | 1-999999.99 | 10.50 | Must be precise to two decimal places |

### Table: Order\_Status

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample Data | Notes |
| Order\_status\_Id | NUMBER | 3 | - | PK | Y | 1-999 | 9 | Auto numbered identity |
| Status\_name | VARCHAR2 | 25 | - |  | Y |  | “Active” | Current status of the order |

### Table: Order\_Bridge\_Items

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample Data | Notes |
| Order\_id | NUMBER | 9 | - | PK  FK | Y | 1-999999999 | 1002 | Auto numbered identity |
| Menu\_item\_Id | NUMBER | 3 | - | PK  FK | Y | 1-999 | 12 |  |
| Quantity | NUMBER | 9 | - |  | Y | 1-999999999 | 3 | Quantity of item ordered in a single order |

Table: Menu\_Category

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample  Data | Notes |
| Category\_Id | NUMBER | 1 |  | PK | Y | 1-9 | 1 | Set range as dictated by company needs |
| Category\_name | VARCHAR2 | 15 |  |  | Y |  | “Drink” |  |

Table: Menu\_Item\_Pricing\_History

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample  Data | Notes |
| Menu\_Item\_Id | NUMBER | 3 |  | PK  FK | Y | 1-999 | 12 |  |
| Item\_price | NUMBER | 5,2 | 0.00 |  | Y | 0.00-199.99 | 35.99 |  |
| Price\_date | DATE |  |  | PK | Y |  | 2023/01/01 | YYYY/MM/DD |

Table: Menu\_Item

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample  Data | Notes |
| Category\_id | NUMBER | 1 |  | FK | Y | 1-9 | 1 | Range increases as needed (vertical growth) |
| Menu\_item\_id | NUMBER | 3 |  | PK | Y | 1-999 | 12 |  |
| item\_name | VARCHAR2 | 40 |  |  | Y |  | “Spicy Chicken” |  |
| Item\_status\_Id | NUMBER | 1 |  | FK | Y | 1-7 | 2 | Set range as dictated by company needs |

Table: Menu\_Item\_Status

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample  Data | Notes |
| Item\_status\_Id | NUMBER | 1 |  | PK | Y | 1-7 | 1 | Set range as dictated by company needs |
| Status\_Name | VARCHAR2 | 10 |  |  | Y |  | Permanent | Options limited as per business rules |

Table: Recipe\_Bridge

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample  Data | Notes |
| Menu\_Item\_Id | NUMBER | 3 |  | PK  FK | Y | 1-999 | 12 |  |
| Ingredient\_Id | NUMBER | 5 |  | PK  FK | Y | 1-10000 | 1 |  |
| Ingredient\_qty | NUMBER | 3 |  |  | Y | 1-3 | 1 |  |

Table: Ingredient

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Column | Data Type | Size, Precision | Default | PK/FK | Required | Range | Sample  Data | Notes |
| Ingredient\_Id | NUMBER | 3 |  | PK | Y | 1-999 | 12 |  |
| Ingredient\_name | VARCHAR2 | 40 |  |  | Y |  | “chicken” |  |
| Ingredient\_Source | VARCHAR2 | 10 |  |  | Y | “local”  Or “import” | “import” | 2 options only |

# **Business Rules**

* 1 employee can be serving many orders. However, 1 order is only one employee's responsibility (1:M).
* Orders will generally be assigned to waiters as they will be serving them.
* 1 employee can only hold one position at a time. However, 1 position can be the title of various employees. E.g. there can be many waiters in a restaurant (1:M).
* 1 employee can only show up for a single shift in a day. Also, 1 shift instance can only be created by one employee (1:1), as it is a combination of employee ID and date.
* 1 shift schedule, for e.g. a morning shift of 9-5, can have many shift instances. However, 1 shift instance can only be from 1 shift schedule (1:M).
* Shift lengths can vary based on the shift type.
* An order can be made up of multiple menu items. A single menu item can also be a part various orders M:N.
* Each order has only one order status, but multiple orders can have the same status 1:M.
* Every menu item has a changeable status: Permanent, Trial, Summer-only, Fall-only, Winter-only, Out-of-stock, Discontinued
* Every menu pricing is subject to change with inflation. Pricing history is needed.
* Every ingredient is sourced locally or imported. Business only requires each ingredient to be categorized as ‘Local’ or ‘Import’
* 1 Menu category to many menu items.1 menu item has 1 menu category.
* 1 price to 1 menu item at a specific date. If only 1 instance exist, the price then is the current price for the menu item, else take the most recent entry available according to date.
* Every menu item has 1 or many ingredients. Each ingredient belongs to 1 or many menu items.
* Every menu item has a unique combination of ingredients with its respective quantity. (Recipe)