Physical Data Modeling - Diagram Report

**Alden**

Project Name: LawnCare Database Project

Description: To construct a database and application for interacting with it to serve the needs of a small lawn care company.

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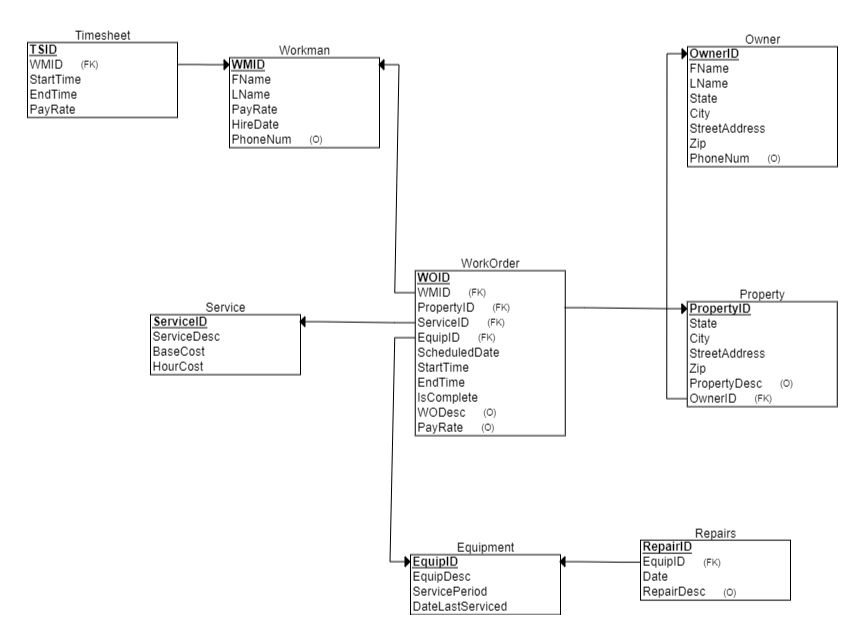
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Physical Model:



Entities:

Entity Name: Owner

Description: Stores an owners name and billing address as well as contact information.

Comments:

Purpose: An Owner registers properties with the company.

Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Keys** | **Datatype/**  **Qualifier/**  **Nullility** |
| OwnerID | Unique ID for Owner. Auto-generated. |  | INT, NOT NULL |
| FName | First Name |  | CHAR(25) NOT NULL |
| LName | Last Name |  | CHAR(25) NOT NULL |
| State | State component of the billing address line |  | CHAR(25) NOT NULL |
| City | City component of the billing address line |  | CHAR(25) NOT NULL |
| StreetAddress | Street component of the billing address line |  | CHAR(25) NOT NULL |
| Zip | Zip component of the billing address line |  | INT, NOT NULL |
| PhoneNum | Contact Info for owner. Optional. |  | CHAR(20) |

Relationship Name: owns

Description: An Owner owns many properties

Entity Name: Property

Description: Will store a property’s description and address

Comments:

Purpose: Properties are what the company provides services for.

Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Keys** | **Datatype/**  **Qualifier/**  **Nullility** |
| PropertyID | Unique ID for Property. Auto-generated. | PK | INT, NOT NULL |
| OwnerID | Owner Foreign Key. | FK |  |
| PropertyDesc | Short Description to disambiguate property. Optional. |  | VARCHAR(50) |
| State | State component of the property address line |  | CHAR(25) NOT NULL |
| City | City component of the property address line |  | CHAR(25) NOT NULL |
| StreetAddress | Street component of the property address line |  | CHAR(25) NOT NULL |
| Zip | Zip component of the property address line |  | INT, NOT NULL |

Entity Name: Service

Description: Will be one of many types of service provided to be performed on a property. Will contain a description the service as well as the cost of the service.

Comments:

Purpose: A Service is what the company provides for customers to be performed on their properties.

Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Keys** | **Datatype/**  **Qualifier/**  **Nullility** |
| ServiceID | Unique ID for service. Auto-generated. | PK | INT, NOT NULL |
| ServiceDesc | Short description of service. |  | CHAR(200) NOT NULL |
| BaseCost | Base Price of the service |  | INT, NOT NULL |
| HourCost | Hourly Rate of the service |  | INT, NOT NULL |

Relationship Name: is provided

Description: A Service is provided to properties.

Entity Name: Workman

Description: Stores employee information such as name and contact info, as well as hire date and payrate.

Comments:

Purpose: Employees will carry out the services the company provides.

Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Keys** | **Datatype/**  **Qualifier/**  **Nullility** |
| WMID | Unique ID for workman. Auto-generated. | PK | INT, NOT NULL |
| FName | First Name |  | CHAR(25) NOT NULL |
| LName | Last Name |  | CHAR(25) NOT NULL |
| PayRate | Workman’s hourly rate in cents |  | INT, NOT NULL |
| HireDate | Date employee was hired. |  | DATE, NOT NULL |
| PhoneNum | Contact Number. Optional. |  | INT |

Relationship Name: completes

Description: An Employee completes the workorder they are assigned.

Relationship Name: generates

Description: An Employee generates Timesheets as they complete workorders..

Entity Name: Equipment

Description: Stores information on equipment owned by the company. Contains description, as well as repair history and maintenance information.

Comments:

Purpose: Equipment is used to complete workorders.

Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Keys** | **Datatype/**  **Qualifier/**  **Nullility** |
| EquipID | Unique ID for Equipment. Auto-generated. | PK | INT, NOT NULL |
| EquipDesc | Short description of equipment. |  | CHAR(200), NOT NULL |
| ServicePeriod | Recommended max number of days between repairs |  | INT, NOT NULL |
| DateLastServiced | Date of Last Service. |  | DATE, NOT NULL |

Relationship Name: is used in

Description: Equipment is used in work-orders to complete said work-order.

Relationship Name: undergoes

Description: Equipment undergoes repairs and generates repair logs.

Entity Name: WorkOrder

Description: References data from Workman, Service, Equipment, and Property to create a scheduled work task..

Comments:

Purpose: A WorkOrder is a billable item.

Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Keys** | **Datatype/**  **Qualifier/**  **Nullility** |
| ScheduledDate | Date Workorder is scheduled |  | DATE, NOT NULL |
| StartTime | Beginning of Workorder’s execution |  | DATE, NOT NULL |
| EndTime | End of Workorder’s execution |  | DATE, NOT NULL |
| IsComplete | Status of Workorder. |  | INT, NOT NULL |
| WODesc | Short description for workorder. Optional. |  | VARCHAR(100) |
| ServiceID | Foreign Key of the Service in the WorkOrder | FK | INT, NOT NULL |
| PropertyID | Foreign Key of the Property in the WorkOrder | FK | INT, NOT NULL |
| OwnerID | Foreign Key of the Owner in the WorkOrder | FK | INT, NOT NULL |
| EquipID | Foreign Key of the Equipment in the WorkOrder | FK | INT, NOT NULL |
| WMID | Foreign Key of the Employee in the WorkOrder | FK | INT, NOT NULL |
| PayRate | Employee’s hourly rate in cents |  | INT |

Relationship Name: is assigned

Description: A workorder is assigned to properties..

Entity Name: Repairs

Description: Will record repair and maintenance events for equipment owned by the company. Has a date and a description.

Comments:

Purpose: A WorkOrder is a billable item.

Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Keys** | **Datatype/**  **Qualifier/**  **Nullility** |
| RepairID | Unique ID for Repair log, auto-generated | PK | INT, NOT NULL |
| Date | Date of repair log entry |  | DATE, NOT NULL |
| RepairDesc | Short note describing repair/maintenance event |  | VARCHAR(100) |
| EquipID | Foreign Key of Equipment repairs belong to. | FK |  |

Entity Name: Timesheet

Description: Created as employees complete work-orders. Records the time spent working and calculates wages earned.

Comments:

Purpose: timesheets are used to calculate employee wages.

Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Keys** | **Datatype/**  **Qualifier/**  **Nullility** |
| TSID | Unique ID of timesheet, autogenerated | PK | INT, NOT NULL |
| WMID | Foreign Key of Employee the timesheet belongs to | FK | INT, NOT NULL |
| Date | Date that timesheet references |  | DATE, NOT NULL |
| StartTime | Start of timeblock |  | DATE, NOT NULL |
| EndTime | End of timeblock |  | DATE, NOT NULL |