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Members: Timothy Butler
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Project Title: The Back Nine

URL: <http://flip1.engr.oregonstate.edu:60115/>

Executive Summary

In the beginning of this project we started with 5 main entities, Golfers, Sales, Invoices, Employees, and Tee Times. After feedback from our peers, we decided the best course of action was to remove Invoices. The feedback questioned what were the differences of Sales and Invoices, since they both contained relatively the same information. At that point, we noticed that Sales and Invoices were too similar and were confusing for others and eventually ourselves. Ultimately, removing Invoices helped us focus on the remaining entities.

We were missing a major entity, which was Golfers_with_tee_times. It was clear in the instructions that we overread and needed to be included in the UI. This was not caught until about halfway through the project from our peer's feedback. Golfers_with_tee_times was the intersection entity for Tee Times and Golfers. This would basically show golfer's with their booked tee times. This was a major part of the project since we are dealing with to many-to-many relationship between the Tee Times and Golfers.

Besides those two major changes, the project was still on track with how we wanted it to function. Throughout the development we had plenty of feedback from our peers and what needed to be changed or corrected on a minor scale. Some of these included the following:

- Correctly naming entities
- Consistent spelling
- Nullable option for Employees on deletion and update for Sales
- Fixing the updates on certain pages
- Pages needed to be refresh after adding or updating

All of the minor issues mentioned above were resolved.

We are pleased with the work that we have done and have a working product that would satisfy the requirements for the customer. The last thing we implemented was the overall design of how the web pages look with the use of CSS. If there are any errors with regards to the design, they were not reviewed by any peers, only the team's members.

Overview:

The world of golf is large and ever expanding, there continues to be more and more players and more clubs popping up throughout the world on a daily basis. Many of the clubs today have to manage their sales from the pro shop, golfers, tee times, and more. For many of these shops, they are still using a paper filing system, or if not they are not utilizing a database to record these items. A database would allow these shops to be more efficient, and allow them to have more insight into their customers and their revenue.

The Back Nine Golf Course brings in roughly \$300,000 in annual sales, with a peak season during the summer months. The database for the golf course needs to keep track of golfers, sales, tee times, and employees. Due to the expanding customers, tee times will be filled with no less than 2 golfers and no more than 4 golfers during peak season to help reduce clutter.

Database Outline:

Golfers: Records the details of golfers that come to the course and their contact info.

- golfer_id: INT, auto_increment, unique, not NULL, PK
- first_name: VARCHAR (50), not NULL
- last_name: VARCHAR (50), not NULL
- phone: VARCHAR(50), not NULL
- email: VARCHAR(50),
- address: VARCHAR(255), not NULL
- Relationships:
 - A 1:M relationship between Golfer and Sales is implemented with golfer_id as foreign key inside of Sales. A golfer can make multiple purchases, but a particular sale can only belong to a single golfer.
 - A M:N relationship between golfers and Tee Times is implemented with golfer_id as a foreign key inside of Tee Times. A golfer can have many tee times throughout the week, month, or year, and a particular tee time can have multiple golfers, especially during the peak season.

Sales: Records the sales for the golf course.

- sale_id: INT, auto_increment, unique, not NULL, PK
- golfer_id: INT, not NULL, FK
- price: DECIMAL(19,2), not NULL
- sale_date: DATETIME, not NULL
- employee_id: INT, not NULL, FK
- Relationships:
 - A 1:M relationship between Sales and Golfers is implemented with golfer_id as foreign key inside of Sales. A golfer can make multiple purchases or sales, but a particular sale can only belong to a single golfer.

- A 1:M relationship between Employees and Sales. Every employee can have many sales that they are tied to. This would be optional as not all employees will have sales. Each sale will only have a single employee.

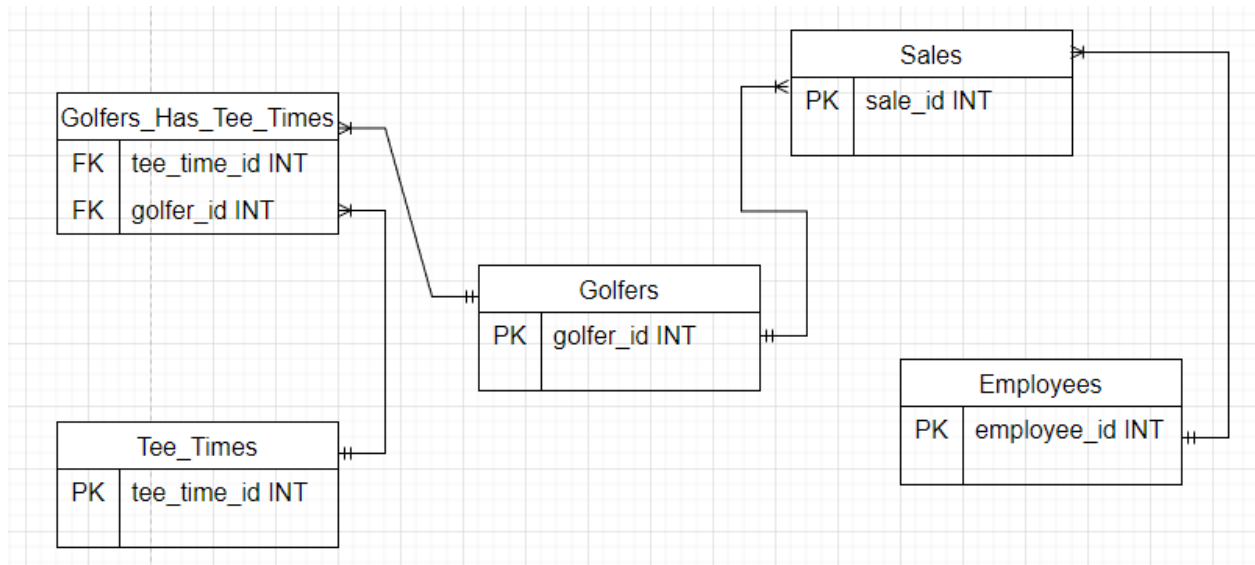
Tee_Times: Records the tee times for golfers.

- tee_time_id: INT, auto_increment, unique, not NULL, PK
- party_size: INT, not NULL
- tee_time_date: DATETIME, not NULL
- golfer_id: INT, not NULL, FK
- Relationships:
 - A M:N relationship between golfers and Tee Times is implemented with golfer_id as a foreign key inside of Tee Times. A golfer can have many tee times throughout the week, month, or year, and a particular tee time can have multiple golfers, especially during the peak season.

Employees: Keeps a record of Employees and their info.

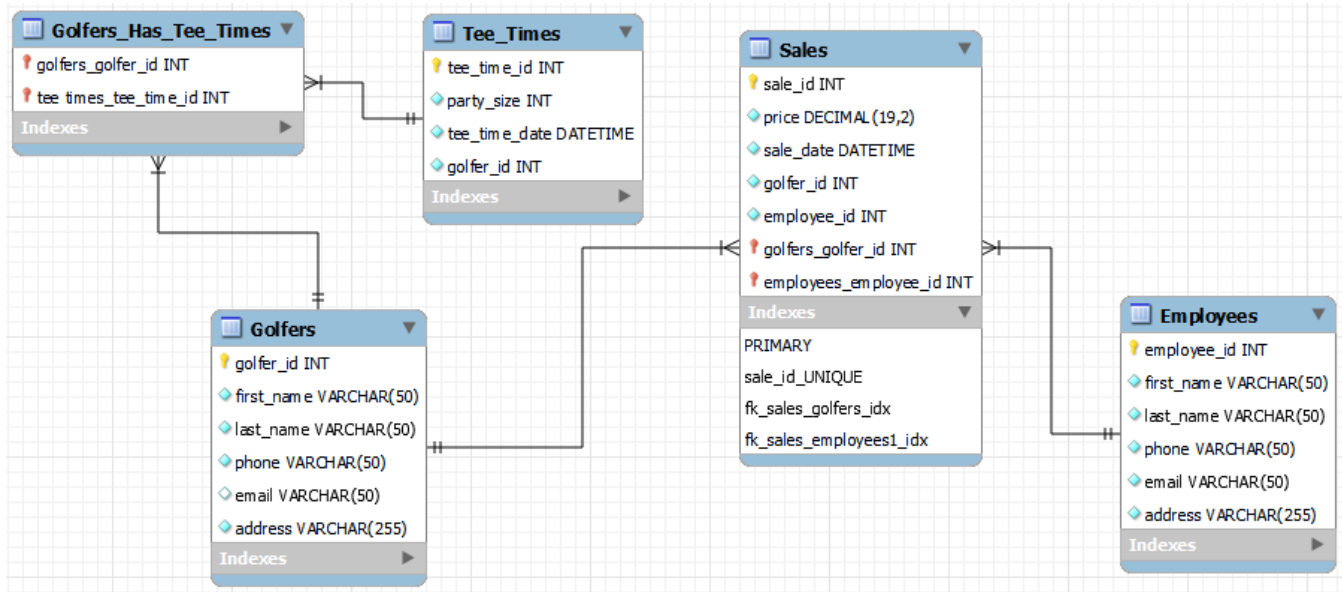
- employee_id: INT, auto_increment, unique, not NULL, PK
- first_name: VARCHAR (50), not NULL
- last_name: VARCHAR (50), not NULL
- phone: VARCHAR(50), not NULL
- email: VARCHAR(50), not NULL
- address: VARCHAR(255), not NULL
- Relationships:
 - A 1:M relationship between Employees and Sales. Every employee can have many sales that they are tied to. This would be optional as not all employees will have sales. Each sale will only have a single employee.

ER Diagram:



Schema:

We believe that our design meets the requirements for Third Normal Form (3NF). There does not seem to be any transitive dependencies in our design. If the database starts to get bigger, that will change and the need for normalization would have to be reevaluated. See the Schema below for a visual representation of our database design.



Example Data:

| Golfers | | | | | |
|-----------------------|-----------------------|------------|----------------|--|--------------|
| golfer_id | first_name | last_name | phone | email | address |
| 1 | John | Smith | (654)-654-4564 | smith@gmail.com | 123 South Rd |
| 2 | Jane | Doe | (654)-654-4565 | doe@gmail.com | 124 South Rd |
| 3 | Michael | Scott | (654)-654-4566 | scott@gmail.com | 125 South Rd |
| 4 | Preston | Lane | (654)-654-4567 | lane@gmail.com | 126 South Rd |
| 5 | Kevin | McDaniel | (654)-654-4568 | mcdaniel@gmail.com | 127 South Rd |
| 6 | Frank | Johnson | (654)-654-4569 | NULL | 128 South Rd |
| Sales | | | | | |
| sale_id | golfer_id | price | sale_date | employee_id | |
| 1 | 5 | \$ 85.00 | 1/24/23 | 1 | |
| 2 | 4 | \$ 100.25 | 1/25/23 | 1 | |
| 3 | 2 | \$ 45.00 | 1/26/23 | 2 | |
| 4 | 1 | \$ 21.30 | 1/27/23 | 3 | |
| 5 | 3 | \$ 70.25 | 1/28/23 | 3 | |
| Tee_Times | | | | | |
| tee_time_id | tee_time_date | party_size | golfer_id | | |
| 1 | 1/25/23 6:00 AM | 2 | 5 | | |
| 2 | 1/25/23 6:00 AM | 2 | 6 | | |
| 3 | 1/26/23 7:00 AM | 4 | 4 | | |
| 4 | 1/27/23 7:00 AM | 1 | 2 | | |
| 5 | 1/28/23 7:00 AM | 1 | 1 | | |
| 6 | 1/29/23 7:00 AM | 3 | 3 | | |
| 7 | 1/30/23 7:00 AM | 1 | 5 | | |
| Employees | | | | | |
| employee_id | first_name | last_name | phone | email | address |
| 1 | Jerry | Remington | (578)-587-9874 | remington1@gmail.com | 200 North Rd |
| 2 | Mary | Remington | (578)-587-9875 | remington2@gmail.com | 201 North Rd |
| 3 | Terry | Remington | (578)-587-9876 | remington3@gmail.com | 202 North Rd |
| 4 | Larry | Remington | (578)-587-9877 | remington4@gmail.com | 203 North Rd |
| Golfers_Has_Tee_Times | | | | | |
| golfers_golfer_id | tee_times_tee_time_id | | | | |
| 1 | 4 | | | | |
| 2 | 3 | | | | |
| 3 | 5 | | | | |
| 4 | 2 | | | | |
| 5 | 1 | | | | |
| 5 | 6 | | | | |
| 6 | 1 | | | | |

Screenshots:

Home Page. Just has a navigation bar, does not use CRUD (Create, Read, Update, Delete).



Golfers Page. Has all CRUD (Create, Read, Update, Delete) plus a Search option.

Golfers

A list of all the current Golfers in the Database is listed below

[Home](#)[Golfers](#)[Employees](#)[Sales](#)[Tee Times](#)[Golfers with Tee Times](#)

| golfer_id | first_name | last_name | phone | email | address | |
|-----------|------------|-----------|----------------|---------------------------|--|---------------|
| 1 | John | Smith | (654)-458-4458 | Johnsmith23@gmail.com | 1455 Applegate Rd, Portland, OR 97035 | Delete Golfer |
| 2 | Jane | Smith | (541)-854-2215 | Janesmith1845@gmail.com | 1455 Applegate Rd, Portland, OR 97035 | Delete Golfer |
| 3 | Michael | Scott | (785)-211-6584 | themichaelscott@gmail.com | 1225 Warehouse Dr, Scranton, PA 18503 | Delete Golfer |
| 4 | Preston | Lane | (885)-654-4567 | plane@gmail.com | 126 South Barnett Rd, Medford, OR 97501 | Delete Golfer |
| 5 | Kevin | McDaniel | (221)-477-7895 | mcdaniel@gmail.com | 3069 Pinkerton Ln, Klamath Falls, OR 97603 | Delete Golfer |
| 6 | Frank | Johnson | (185)-654-2365 | | 11 Old Town Rd, Medford, OR 97504 | Delete Golfer |

Search For a Golfer

Search by last name using the field below. Partial last names are OK too!

Search by Last Name: [Submit](#) [Reset](#)

Add a New Golfer

To add a new golfer, please enter their information below and click 'Submit'!

First Name: Last Name: Phone: Email: Address: [Submit](#)

Update A Golfer's Information

To update a specific golfer's information

Golfer: [Select a Golfer](#) [First Name:](#) [Last Name:](#) [Phone:](#) [Email:](#) [Address:](#) [Submit](#)

Employees Page. Has all CRUD (Create, Read, Update, Delete) plus a Search option.

Employees

A list of all the current Employees in the Database is listed below

[Home](#)[Golfers](#)[Employees](#)[Sales](#)[Tee Times](#)[Golfers with Tee Times](#)

| employee_id | first_name | last_name | phone | email | address | |
|-------------|------------|-----------|----------------|---------------------------|---|-----------------|
| 1 | Jerry | Remington | (578)-587-9874 | remington1@gmail.com | 200 North Point Rd, Eagle Point, OR 97524 | Delete Employee |
| 2 | Mary | Remington | (578)-587-9875 | remington2@gmail.com | 200 North Point Rd, Eagle Point, OR 97524 | Delete Employee |
| 3 | Mark | McMann | (541)-214-1745 | Markthemcmann@hotmail.com | 855 Sterling Ct, Central Point, OR 97502 | Delete Employee |
| 4 | Jennifer | Wittman | (875)-411-9877 | jennywittman@aol.com | 1155 Qual Point Dr, Klamath Falls, OR 97601 | Delete Employee |

Search For an Employee

Search by last name using the field below. Partial last names are OK too!

Search by Last Name: [Submit](#) [Reset](#)

Add a New Employee

To add a new employee, please enter their information below and click 'Submit'!

First Name: Last Name: Phone: Email: Address: [Submit](#)

Update An Employee's Information

To update a specific employee's information

Employee: [Select an Employee](#) [First Name:](#) [Last Name:](#) [Phone:](#) [Email:](#) [Address:](#) [Submit](#)

Sales Page. Has all CRUD (Create, Read, Update, Delete).

Sales

A list of all the current Sales in the Database are listed below

Home

Golfers

Employees

Sales

Tee Times

Golfers with Tee Times

| Sale | First | Last | Price | Date_of_Sale | Employee |
|------|---------|-------|--------|---|----------|
| 9 | John | Smith | 14.99 | Sun Mar 19 2023 18:17:00 GMT-0700 (Pacific Daylight Time) | |
| 10 | Jane | Smith | 12 | Thu Mar 09 2023 18:17:00 GMT-0800 (Pacific Standard Time) | 1 |
| 11 | Preston | Lane | 1000 | Fri Mar 10 2023 20:19:00 GMT-0800 (Pacific Standard Time) | 1 |
| 12 | Michael | Scott | 101.85 | Wed Mar 15 2023 08:19:00 GMT-0700 (Pacific Daylight Time) | 2 |
| 13 | John | Smith | 45.99 | Mon Mar 20 2023 21:58:00 GMT-0700 (Pacific Daylight Time) | 3 |
| 14 | Jane | Smith | 55.87 | Mon Mar 20 2023 22:06:00 GMT-0700 (Pacific Daylight Time) | 4 |
| 15 | Preston | Lane | 100 | Mon Mar 20 2023 22:43:00 GMT-0700 (Pacific Daylight Time) | 4 |

Add a New Sale

To add a new sale, please enter the information below and click 'Submit Sale'!

Golfer:

Select a Golfer

 Price: Date of Sale:

03/21/2023, 12:30 PM

 Employee:

Select an Employee

Submit

Update A Sales Information

To update a specific sale

Sale ID:

Select a Sale

 Price: Employee:

Select an Employee or NULL

Submit

Tee Times Page. Has all CRUD (Create, Read, Update, Delete).

Tee Times

A list of all the current Tee Times in the Database is listed below

Home

Golfers

Employees

Sales

Tee Times

Golfers with Tee Times

| tee_time_id | party_size | tee_time_date | golfer_id | |
|-------------|------------|---|-----------|----------------------------|
| 1 | 2 | Sat Mar 25 2023 06:00:00 GMT-0700 (Pacific Daylight Time) | 5 | <div>Delete Tee Time</div> |
| 3 | 4 | Wed Mar 22 2023 07:00:00 GMT-0700 (Pacific Daylight Time) | 4 | <div>Delete Tee Time</div> |
| 5 | 2 | Wed Mar 22 2023 06:30:00 GMT-0700 (Pacific Daylight Time) | 5 | <div>Delete Tee Time</div> |
| 6 | 2 | Wed Mar 22 2023 19:34:00 GMT-0700 (Pacific Daylight Time) | 5 | <div>Delete Tee Time</div> |
| 7 | 4 | Wed Mar 22 2023 08:42:00 GMT-0700 (Pacific Daylight Time) | 6 | <div>Delete Tee Time</div> |
| 8 | 4 | Fri Mar 31 2023 13:36:00 GMT-0700 (Pacific Daylight Time) | 1 | <div>Delete Tee Time</div> |

Add a New Tee Time

To add a new tee time, please enter the information below and click 'Submit Tee Time'!

Golfer:

Select a Golfer

 Party Size: Tee Time:

03/21/2023, 12:30 PM

Submit

Update An Existing Tee Time

To update a Tee Times Date, Time, or Party Size

Tee Time ID:

Select an Existing Tee Time by ID

 Date and Time:

03/21/2023, 12:30 PM

 Party Size:

Submit

Golfers with Tee Times. Has Create and Read option only.

Golfers With Tee Times

A list of all the current Golfers who have Tee Times in the Database is listed below

Home

Golfers

Employees

Sales

Tee Times

Golfers with Tee Times

| First | Last | Tee_Time |
|---------|----------|---|
| Frank | Johnson | Wed Mar 22 2023 08:42:00 GMT-0700 (Pacific Daylight Time) |
| John | Smith | Fri Mar 31 2023 13:36:00 GMT-0700 (Pacific Daylight Time) |
| Kevin | McDaniel | Wed Mar 22 2023 19:34:00 GMT-0700 (Pacific Daylight Time) |
| Kevin | McDaniel | Sat Mar 25 2023 06:00:00 GMT-0700 (Pacific Daylight Time) |
| Kevin | McDaniel | Wed Mar 22 2023 06:30:00 GMT-0700 (Pacific Daylight Time) |
| Preston | Lane | Wed Mar 22 2023 07:00:00 GMT-0700 (Pacific Daylight Time) |

Manually Enter Data

Data will be added from Tee Times Add Tee Time Form, this is only to manually add data

Golfer:

Select a Golfer

 Tee Time:

03/21/2023, 12:30 PM

Submit