

Golf Sports Analytics Capstone

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Project Goal

- To develop an application for Data Collection for Carnegie Mellon's Varsity Golf Team
- Create a platform for the Golfers' and Coach to reflect on performance and identify and make competitive decisions based on Data
- Focused on how to create a easy-to-use data collection process for the golfers and coach
- Increasing usage of analytics enables golfers to produce key insights for strategies and improvement to their game



Description App and Features

- 5 tabs to collect information based on Player, Tournament Round and Holes
- Using Google maps API Satellite imagery, we were able to locate golf locations through user input
- Markers are used to indicate Pin Location as well as each location where the golf ball landed during the round
- Markers can be cleared/removed and dragged in case the initial drop location is bad
- Analysis for reporting and reflecting through past performances and players

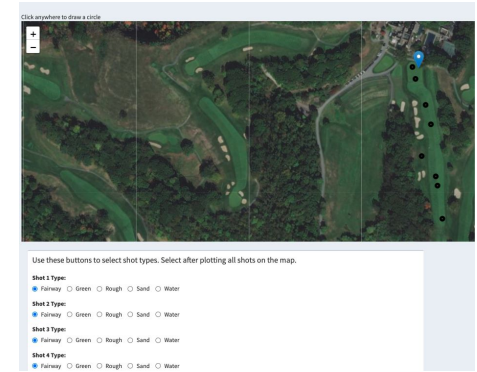
Data Entry App for CMU Golf Team

Metadata Entry

Tournament: Tournament Name:

Start Date: 2021-05-08

Player Name: Round Number: Choose the hole: not chosen



	Shot	Latitude	Longitude	Shot Type
1	1	40.477672036515	-79.8577523231506	Fairway
2	2	40.4779739923054	-79.8579132556915	Fairway
3	3	40.4784473256762	-79.8578488826752	Fairway
4	4	40.4801671761476	-79.858141290606	Fairway
5	5	40.479334781387	-79.8579910869012	Fairway

Tab 1: Player + Tournament Entry



- To start, the golfer initially enters his/her name, the Tournament Location and the Latitude/Longitude of each hole
- This can be preset by the Coach prior to golfer's input
- The data does not need to be re-entered for every golfer

Add New Player

Enter New Player:

Submit New Player

Add New Tournament

Enter New Tournament:

Hole 1 Latitude:	Hole 1 Longitude:
<input type="text" value="33.5021"/>	<input type="text" value="82.0226"/>
Hole 2 Latitude:	Hole 2 Longitude:
<input type="text"/>	<input type="text"/>
Hole 3 Latitude:	Hole 3 Longitude:
<input type="text"/>	<input type="text"/>
Hole 4 Latitude:	Hole 4 Longitude:
<input type="text"/>	<input type="text"/>
Hole 5 Latitude:	Hole 5 Longitude:
<input type="text"/>	<input type="text"/>
Hole 6 Latitude:	Hole 6 Longitude:
<input type="text"/>	<input type="text"/>
Hole 7 Latitude:	Hole 7 Longitude:
<input type="text"/>	<input type="text"/>
Hole 8 Latitude:	Hole 8 Longitude:
<input type="text"/>	<input type="text"/>

Tab 2: Pin Location

- The player or coach can set the pin location for each hole
- The player/coach navigates to the pin location tab which then the player can determine where each pin is for each hole

Pin Location Input

Metadata Entry

Date:
2021-05-08


Tournament name:
The Masters

Round Number:
1

Choose the hole:
1

Submit Metadata

Click/drag to drop pin




Tab 3: Golf Map

- Players are able to track their shots
- Each shot is indicated by a black marker
- The different types of shots (Fairway, Water, Sand, Rough)

Player Name: Round Number: Choose the hole:

Click anywhere to draw a circle



Use these buttons to select shot types. Select after plotting all shots on the map.

Shot 1 Type: ☒ Fairway ☐ Green ☐ Rough ☐ Sand ☐ Water

Shot 2 Type: ☒ Fairway ☐ Green ☐ Rough ☐ Sand ☐ Water

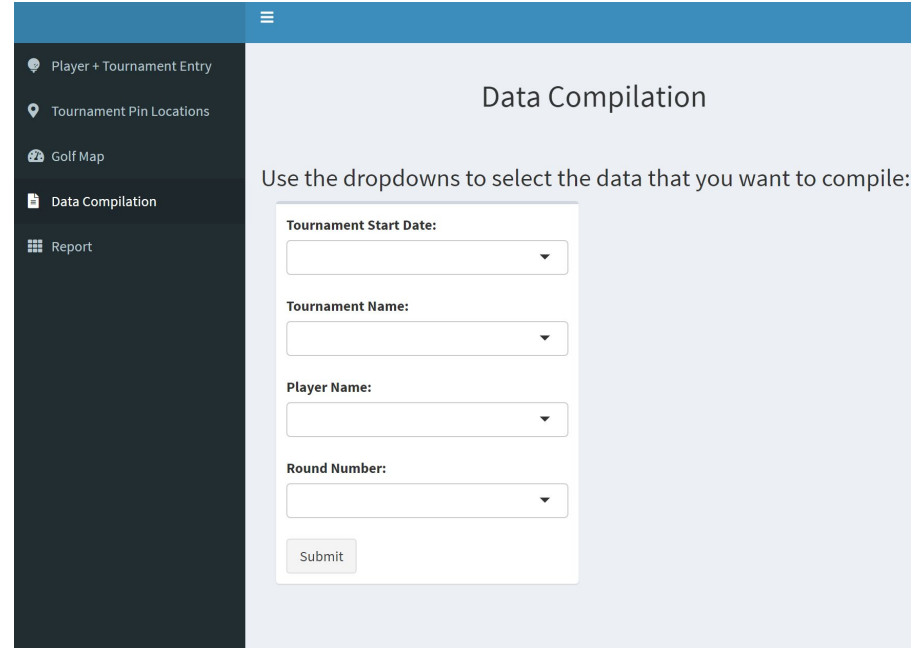
Shot 3 Type: ☐ Fairway ☐ Green ☐ Rough ☒ Sand ☐ Water

Shot 4 Type: ☐ Fairway ☐ Green ☒ Rough ☐ Sand ☐ Water

Shot 5 Type: ☒ Fairway ☐ Green ☐ Rough ☐ Sand ☐ Water

Tab 4: Data Compilation

- Allows user to aggregate shot data by filtering through a specific date, tournament name, round, etc



The screenshot shows a web application interface for data compilation. On the left is a dark sidebar with a menu containing five items: 'Player + Tournament Entry' (with a lightbulb icon), 'Tournament Pin Locations' (with a location pin icon), 'Golf Map' (with a golf ball icon), 'Data Compilation' (with a document icon and highlighted in white), and 'Report' (with a grid icon). The main content area has a light blue header with a hamburger menu icon and the title 'Data Compilation'. Below the header, a text prompt reads 'Use the dropdowns to select the data that you want to compile:'. This is followed by a white form box containing four dropdown menus labeled 'Tournament Start Date:', 'Tournament Name:', 'Player Name:', and 'Round Number:'. At the bottom of the form box is a 'Submit' button.

Tab 5: Report

- Players can reflect on their performance through a report to track each golfer's shots

Report

Metadata Entry

Tournament

Start Date:

2021-05-09

Tournament Name:

The Masters 2

Player Name:

Rory McIlroy

Round Number:

1

Choose the hole:

1

Search

Show 10 entries

Search:

	Shot	Latitude	Longitude	Shot Type	Distance
1	1	40.4782336243385	-79.8577095773645	Fairway	275.612190280452
2	2	40.4793063227803	-79.8581776850331	Sand	138.836207409653
3	3	40.4804052996058	-79.8583171849362	Green	10.540226201477

Showing 1 to 3 of 3 entries

Previous

1

Next

Screenshots/Live Demo

Data Entry App for CMU Golf Team

Date: **Tournament Name:**

Player name: **Round Number:** **Choose the hole:**

Data Entry App for CMU Golf Team


Metadata Entry

Tournament Name:

Start Date:

Player Name: **Round Number:** **Choose the hole:**

Click anywhere to draw a circle



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Data Entry App for CMU Golf Team


Metadata Entry

Tournament Name:

Start Date:

Player Name: **Round Number:** **Choose the hole:**

Click anywhere to draw a circle



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Use these buttons to select shot types. Select after plotting all shots on the map.

Shot 1 Type: ☒ Fairway ☐ Green ☐ Rough ☐ Sand ☐ Water

Shot 2 Type: ☒ Fairway ☐ Green ☐ Rough ☐ Sand ☐ Water

Shot 3 Type: ☒ Fairway ☐ Green ☐ Rough ☐ Sand ☐ Water

Shot 4 Type: ☒ Fairway ☐ Green ☐ Rough ☐ Sand ☐ Water

Shot 5 Type: ☒ Fairway ☐ Green ☐ Rough ☐ Sand ☐ Water

Colin Morikawa

Show entries

	Shot	Latitude	Longitude	Shot Type	Distance	Strokes.Gained.Fairway	Strokes.Gained.Rough
1	1	40.4778039164174	-79.8576580721076	Fairway	341.899559795894	-1	-1
2	2	40.4785899446461	-79.8578123869587	Fairway	245.152846277604	-1	-1
3	3	40.4789612701864	-79.8581586353685	Fairway	196.903769621358	3.02052	3.19648
4	4	40.4795494618149	-79.8579338049347	Fairway	128.279043867005	2.881	3.0056
5	5	40.4799050959922	-79.8580639364455	Fairway	83.4266684224783	2.8068	2.922
6	6	40.4803865763746	-79.8583107439663	Fairway	24.2249468306033	-1	-1
7	7	40.4806084331978	-79.8583862920565	Fairway	14.2967047637368	-1	-1
8	8	40.4784176890522	-79.8577783168664	Fairway	266.35794670996	-1	-1

Showing 1 to 8 of 8 entries

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Results

- Have a fully automated process to collect, store and analyze golf shot data
- Easy to use app that captures different types of shots and holes for any type of tournament the players are using
- Have statistics to help inform golfers on their performance for tournaments/practice

Shot Type	Distance	Strokes.Gained.Fairway	Strokes.Gained.Rough
Fairway	386.665205339306	-1	-1
Fairway	257.599221815089	-1	-1
Fairway	179.217857134122	2.9866	3.1356
Fairway	102.054108410836	2.80008	2.9188
Green	24.3758009771585	-1	-1

