

Golf Sports Analytics Capstone

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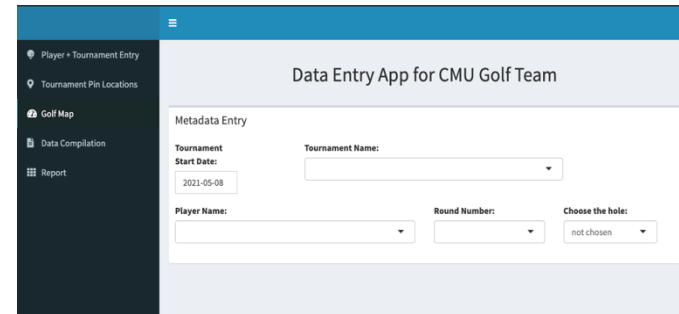
Project Goal

- 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

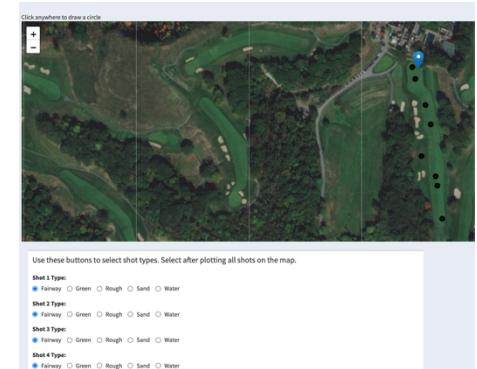


Description App and Features

- 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



The screenshot shows a web application interface for data entry. On the left is a dark sidebar with navigation tabs: 'Player + Tournament Entry', 'Tournament Pin Locations', 'Golf Map', 'Data Compilation', and 'Report'. The main content area is titled 'Data Entry App for CMU Golf Team' and contains a 'Metadata Entry' form. The form includes fields for 'Tournament Name' (a dropdown menu), 'Start Date' (a date picker set to '2021-05-08'), 'Player Name' (a dropdown menu), 'Round Number' (a dropdown menu), and 'Choose the hole:' (a dropdown menu with 'not chosen' selected).



	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:

Tiger Woods

Submit New Player

Add New Tournament

Enter New Tournament:

The Masters

Hole 1 Latitude:	Hole 1 Longitude:
33.5021	82.0226
Hole 2 Latitude:	Hole 2 Longitude:
Hole 3 Latitude:	Hole 3 Longitude:
Hole 4 Latitude:	Hole 4 Longitude:
Hole 5 Latitude:	Hole 5 Longitude:
Hole 6 Latitude:	Hole 6 Longitude:
Hole 7 Latitude:	Hole 7 Longitude:
Hole 8 Latitude:	Hole 8 Longitude:

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

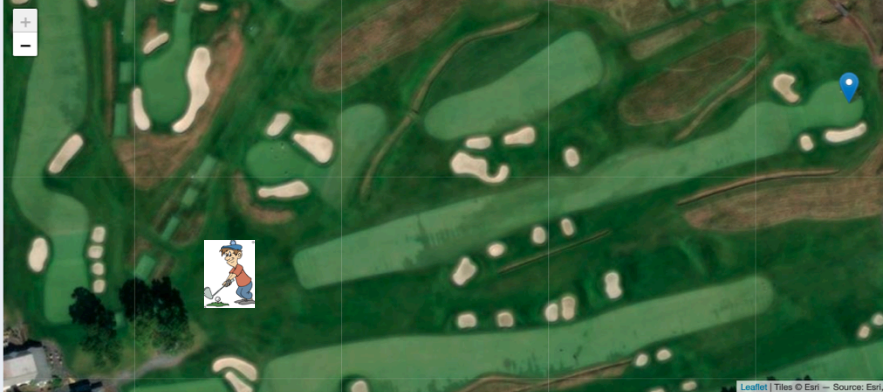
Date:

Tournament name:

Round Number:

Choose the hole:

Click/drag to drop pin



Leaflet | Tiles © Esri — Source: Esri


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: Tiger Woods Round Number: 1 Choose the hole: 1

Submit Metadata

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

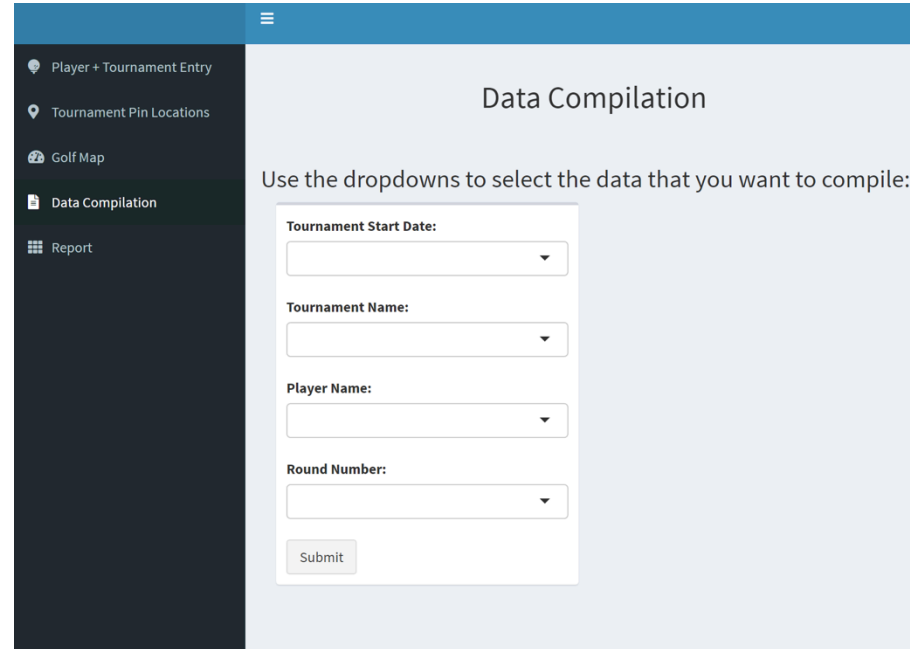
Shot 3 Type: Fairway Green Rough Sand Water

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 mobile application interface with a dark blue header and a dark sidebar. The sidebar contains the following menu items: "Player + Tournament Entry", "Tournament Pin Locations", "Golf Map", "Data Compilation" (highlighted), and "Report". The main content area has a light blue background and is titled "Data Compilation". Below the title, there is a text prompt: "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:". A "Submit" button is located at the bottom of the form box.

Tab 5: Report

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

Report

Metadata Entry

Tournament Name:

Start Date:

Player Name: Round Number: Choose the hole:

Show entries

	Shot	Latitude	Longitude	Shot Type	Distance
1	1	40.4782336242385	-79.8577095773645	Fairway	275.612190290453
2	2	40.4793063227803	-79.8581776850331	Sand	138.836207149653
3	3	40.4804052996058	-79.8583171849362	Green	10.540226201477

Showing 1 to 3 of 3 entries

Previous 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



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



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

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

Previous Next

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

Previous 1 Next

