

IST 659 PGA Golf Project

The SQL Tee-mates

Victoria Haley & Benjamin Heindl

Institution: Syracuse University

Course: IST 659

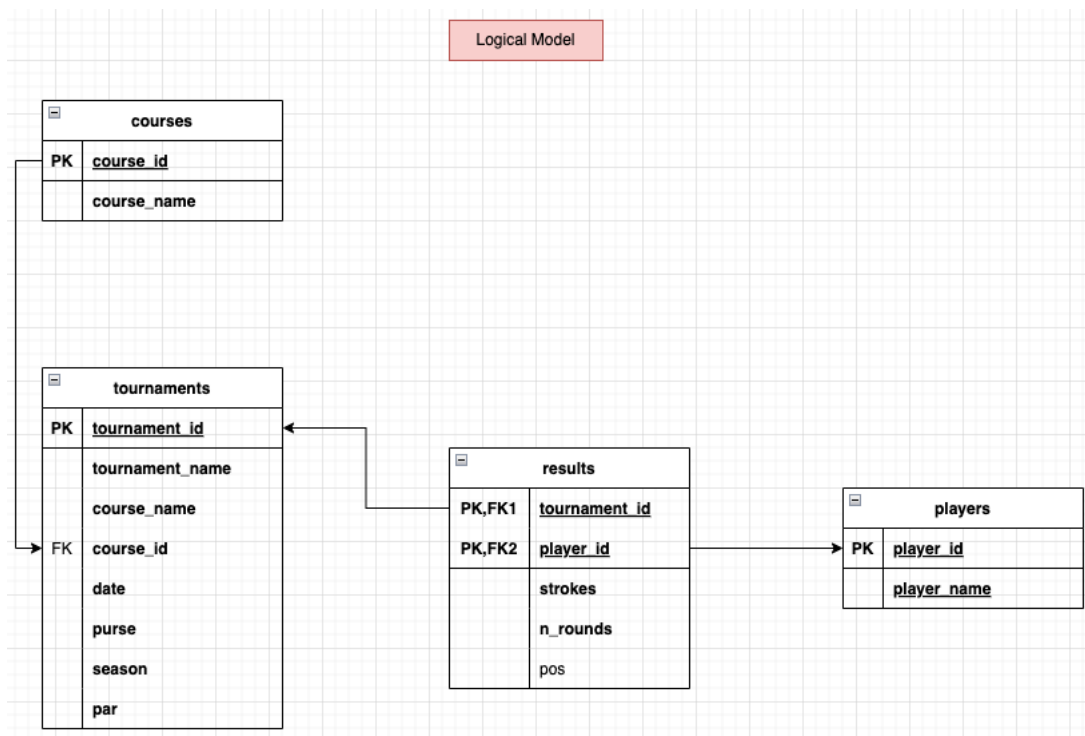
Professor: Chad Harper

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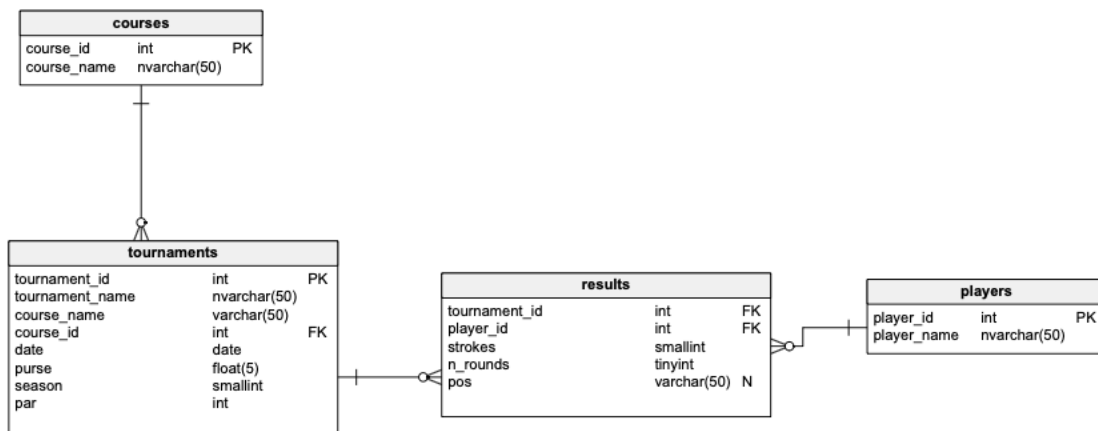
Project Overview

This project was built around a database app that allows users to search through results of PGA tour golf tournaments from 2018-2022. Our goal is to demonstrate how we applied the knowledge we gained from the course Data analysis to create a user-friendly and reliable app that provides comprehensive data coverage, making it an essential tool for tracking the progress of favorite players or creating custom reports.

Logical Model



Conceptual Model



Data Analysis

Entities and Attributes				Relationships					
Entity	Attribute	Property	Description	Relationship	Entity	Rule	Min	Max	Entity
courses	course_id	RU	unique ID for each course	courses-tournaments	courses	hosts	1	1	tournaments
	course_name	RU	course name		tournaments	hosted by	0	M	courses
tournaments	tournament_id	RU	unique ID for each tournament	tournaments-results	tournaments	produces	1	1	results
	tournament_name	R	tournament name		results	produced by	0	M	tournaments
	course_name	R	course name	results-players	results	generated by	0	M	players
	course_id	RU	unique ID for each course		players	generates	1	1	results
	date	R	date						
	purse	R	dollar amount for tournament						
results	season	R	year						
	par	R	par for the tournament						
	tournament_id	RU	unique ID for each tournament						
	player_id	RU	unique ID for each player						
	strokes	R	# of strokes						
	n_rounds	R	# of rounds						
players	pos		position finished						
	player_id	RU	unique ID for each player						
	player_name	R	player name						

Import Tables Process

We imported CSV files of each table into Azure Data Studio using the import wizard and coded the SQL script of the database and data logic. This process allowed us to create a reliable and efficient database app that is user-friendly and meets the needs of our target audience.

Import flat file wizard

Step 1: Specify Input File

Server the database is in *

localhost (sa) ▾

Database the table is created in *

golf ▾

Location of the file to be imported *

c:\Users\localadmin\Desktop\tournament ...

Browse

New table name *

tournament ▾

Table schema *

dbo ▾

Import flat file wizard

Step 3: Modify Columns

Column Name	Data Type	Primary Key <input type="checkbox"/>	Allow Nulls <input type="checkbox"/>
tournament_id	int ▾	<input checked="" type="checkbox"/>	<input type="checkbox"/>
par	smallint ▾	<input type="checkbox"/>	<input type="checkbox"/>
tournament_name	nvarchar(50) ▾	<input type="checkbox"/>	<input type="checkbox"/>
course_name	nvarchar(50) ▾	<input type="checkbox"/>	<input type="checkbox"/>
course_id	tinyint ▾	<input type="checkbox"/>	<input type="checkbox"/>
date	date ▾	<input type="checkbox"/>	<input type="checkbox"/>
purse	float ▾	<input type="checkbox"/>	<input type="checkbox"/>
season	smallint ▾	<input type="checkbox"/>	<input type="checkbox"/>

```

13 -- view tournaments
14 SELECT * FROM tournaments
15
16 -- join tables

```

Results Messages

	tournament_id	par	tournament_name	course_name	course_id	date	purse	season
1	3742	292	Sentry Tournament of Champio...	Kapalua Resort	25	2018-01-07	6.2	2018
2	3743	288	CareerBuilder Challenge	La Quinta CC	28	2018-01-21	5.9	2018
3	3744	284	Waste Management Phoenix Open	TPC Scottsdale	70	2018-02-04	6.9	2018
4	3745	287	AT&T Pebble Beach Pro-Am	Pebble Beach Resort	35	2018-02-11	7.4	2018
5	3746	288	Farmers Insurance Open	Torrey Pines North	59	2018-01-30	6.9	2018
6	3747	280	Sony Open in Hawaii	Waialae CC	76	2018-11-14	6.2	2018
7	3748	284	Genesis Open	Riviera Country Club	41	2018-02-18	7.2	2018
8	3749	280	The Honda Classic	PGA National	36	2018-02-25	6.6	2018
9	3750	288	Arnold Palmer Invitational P...	Bay Hill	5	2018-03-18	8.9	2018
10	3756	288	Houston Open	Redstone Golf Club	39	2018-04-01	7	2018
11	3763	288	Sanderson Farms Championship	Country Club of Jackson	15	2017-10-29	4.3	2018
12	3768	284	Shriners Hospital for Childr...	TPC Summerlin	72	2017-11-05	6.8	2018

Create tables code

```

4 -- tables
5 -- Table: courses
6 CREATE TABLE courses (
7     course_id int NOT NULL IDENTITY,
8     course_name nvarchar(50) NOT NULL,
9     CONSTRAINT courses_pk PRIMARY KEY (course_id)
10 );
11
12 -- Table: players
13 CREATE TABLE players (
14     player_id int NOT NULL IDENTITY,
15     player_name nvarchar(50) NOT NULL,
16     CONSTRAINT players_pk PRIMARY KEY (player_id)
17 );
18
19 -- Table: results
20 CREATE TABLE results (
21     tournament_id int NOT NULL,
22     player_id int NOT NULL,
23     strokes smallint NOT NULL,
24     n_rounds tinyint NOT NULL,
25     pos varchar(50) NULL
26 );
27
28 -- Table: tournaments
29 CREATE TABLE tournaments (
30     tournament_id int NOT NULL IDENTITY,
31     tournament_name nvarchar(50) NOT NULL,
32     course_name varchar(50) NOT NULL,
33     course_id int NOT NULL,
34     date date NOT NULL,
35     purse float(5) NOT NULL,
36     season smallint NOT NULL,
37     CONSTRAINT tournaments_pk PRIMARY KEY (tournament_id)
38 );

```

```

39
40 -- foreign keys
41 -- Reference: results_players (table: results)
42 ALTER TABLE results ADD CONSTRAINT results_players
43     FOREIGN KEY (player_id)
44     REFERENCES players (player_id);
45
46 -- Reference: results_tournaments (table: results)
47 ALTER TABLE results ADD CONSTRAINT results_tournaments
48     FOREIGN KEY (tournament_id)
49     REFERENCES tournaments (tournament_id);
50
51 -- Reference: tournaments_courses (table: tournaments)
52 ALTER TABLE tournaments ADD CONSTRAINT tournaments_courses
53     FOREIGN KEY (course_id)
54     REFERENCES courses (course_id);
55

```

Drop tables code

```

4 -- foreign keys
5 ALTER TABLE results DROP CONSTRAINT results_players;
6
7 ALTER TABLE results DROP CONSTRAINT results_tournaments;
8
9 ALTER TABLE tournaments DROP CONSTRAINT tournaments_courses;
10
11 -- tables
12 DROP TABLE courses;
13
14 DROP TABLE players;
15
16 DROP TABLE results;
17
18 DROP TABLE tournaments;
19

```

SQL Code and results

Below are screenshots of the SQL code that shows the results of the tables in our database in Azure Data Studio. As you can see, the code is well-organized and easy to read, making it easy to modify and update as needed. The SQL code ensures that the database is optimized for quick searches and is scalable as more data is added over time.

```

1  USE golf
2  GO
3
4  -- view courses
5  SELECT * FROM courses

```

Results Messages

	course_name	course_id
1	Accordia Golf Narashino CC	1
2	Albany	2
3	Aronimink Golf Club	3
4	Augusta National Golf Club	4
5	Bay Hill	5
6	Bellerive Country Club	6
7	Bethpage	7
8	Carnoustie Golf Club	8
9	Caves Valley Golf Club	9
10	Chapultepec	10
11	Coco Beach	11
12	Colonial	12
13	Congaree Golf Club	13
14	Corales Puntacana GC	14
15	Country Club of Jackson	15
16	Detroit Golf Club	16
17	East Lake Golf Club	17
18	El Camaleon GC	18
19	Firestone Country Club	19
20	Glen Abbey Golf Club	20
21	Golf Club of Houston	21
22	Grand Reserve Country Club	22
23	Hamilton	23
24	Harbour Town Golf Links	24
25	Innisbrook	25
26	Kapalua Resort	26
27	Keene Trace Golf Club	27
28	Kiawah Island Golf Resort	28
29	La Quinta CC	29
30	Liberty National	30

```

7  -- view players
8  SELECT * FROM players
9

```

Results Messages

	player_name ▼	player_id ▼
1	Robert Allenby	5
2	Stuart Appleby	11
3	Aaron Baddeley	16
4	Rich Beem	29
5	David Berganio	34
6	Chad Campbell	68
7	Paul Casey	72
8	Greg Chalmers	74
9	K.J. Choi	77
10	Stewart Cink	78
11	Darren Clarke	82
12	Fred Couples	91
13	John Daly	97
14	Glen Day	100
15	Jason Dufner	110
16	Ernie Els	123
17	Harrison Frazer	144
18	Jim Furyk	153
19	Sergio Garcia	158
20	Brian Gay	159
21	Retief Goosen	167
22	Padraig Harrington	186
23	J.J. Henry	196
24	Tim Herron	198
25	Charley Hoffman	205
26	Charles Howell III	208
27	Trevor Immelman	215


```

10  |-- view results
11  SELECT * FROM results
12
13  |-- view tournaments
14  SELECT * FROM tournaments
15

```

Results Messages

	tournament_id	player_id	strokes	n_rounds	pos
1	401353197	6015	279	4	25
2	401353197	3832	278	4	18
3	401353197	5502	282	4	39
4	401353197	10372	280	4	28
5	401353197	4383	275	4	7
6	401353197	774	285	4	52
7	401353197	9584	286	4	54
8	401353197	3596	270	4	2
9	401353197	3454	288	4	62
10	401353197	5704	288	4	62
11	401353197	205	280	4	28
12	401353197	5724	276	4	15
13	401353197	3449	284	4	48
14	401353197	10592	275	4	7
15	401353197	5532	141	2	0
16	401353197	6017	287	4	57
17	401353197	4645	270	4	2
18	401353197	11456	289	4	66
19	401353197	11448	294	4	75
20	401353197	5882	291	4	73
21	401353197	9364	284	4	48
22	401353197	11393	294	4	75
23	401353197	4844	282	4	39
24	401353197	5860	265	4	1
25	401353197	5573	278	4	18
26	401353197	5025	276	4	15
27	401353197	11099	280	4	28
28	401353197	1030	286	4	54

```

13  -- view tournaments
14  SELECT * FROM tournaments
15

```

Results		Messages							
	tournament_id	par	tournament_name	course_name	course_id	date	purse	season	
1	3742	292	Sentry Tournament of Champio...	Kapalua Resort	25	2018-01-07	6.2	2018	
2	3743	288	CareerBuilder Challenge	La Quinta CC	28	2018-01-21	5.9	2018	
3	3744	284	Waste Management Phoenix Open	TPC Scottsdale	70	2018-02-04	6.9	2018	
4	3745	287	AT&T Pebble Beach Pro-Am	Pebble Beach Resort	35	2018-02-11	7.4	2018	
5	3746	288	Farmers Insurance Open	Torrey Pines North	59	2018-01-30	6.9	2018	
6	3747	280	Sony Open in Hawaii	Waialae CC	76	2018-11-14	6.2	2018	
7	3748	284	Genesis Open	Riviera Country Club	41	2018-02-18	7.2	2018	
8	3749	280	The Honda Classic	PGA National	36	2018-02-25	6.6	2018	
9	3750	288	Arnold Palmer Invitational P...	Bay Hill	5	2018-03-18	8.9	2018	
10	3756	288	Houston Open	Redstone Golf Club	39	2018-04-01	7	2018	
11	3763	288	Sanderson Farms Championship	Country Club of Jackson	15	2017-10-29	4.3	2018	
12	3768	284	Shriners Hospital for Childr...	TPC Summerlin	72	2017-11-05	6.8	2018	
13	3771	284	Valspar Championship	Innisbrook	24	2018-03-11	6.5	2018	
14	3774	288	World Golf Championships-HSB...	Sheshan International GC	48	2017-10-29	9.75	2018	
15	3776	284	OHL Classic at Mayakoba	El Camaleon GC	18	2017-11-12	7.1	2018	
16	3777	288	Safeway Open	Silverado Resort	50	2017-10-08	6.2	2018	
17	3780	288	CIMB Classic	TPC Kuala Lumpur	65	2017-10-15	7	2018	
18	3781	282	The RSM Classic	Sea Island Resort	44	2017-11-19	6.2	2018	
19	3789	284	World Golf Championships-Mex...	Chapultepec	10	2018-03-04	10	2018	
20	3791	288	Hero World Challenge	Albany	2	2017-12-03	3.5	2018	
21	3802	288	The CJ Cup @ Nine Bridges	The Club at Nine Bridges	54	2017-10-22	9.25	2018	
22	3803	288	Corales Puntacana Resort & C...	Corales Puntacana GC	14	2018-03-25	3	2018	
23	401025221	288	Masters Tournament	Augusta National Golf Club	4	2018-04-08	11	2018	
24	401025246	284	RBC Heritage	Harbour Town Golf Links	23	2018-04-15	6.7	2018	
25	401025247	288	Valero Texas Open	TPC San Antonio	68	2018-04-22	6.2	2018	
26	401025249	284	Wells Fargo Championship	Quail Hollow Club	38	2018-05-06	7.7	2018	
27	401025250	288	The Players Championship	TPC Sawgrass	69	2018-05-13	10.5	2018	
28	401025251	284	AT&T Byron Nelson	Trinity Forest Golf Club	74	2018-05-20	7.7	2018	

```

16  -- join tables
17  SELECT c.course_name, p.player_name, t.tournament_name, r.strokes, r.n_rounds, r.pos, t.date, t.purse, t.season
18  FROM courses c
19  JOIN tournaments t ON c.course_id = t.course_id
20  JOIN results r ON t.tournament_id = r.tournament_id
21  JOIN players p ON r.player_id = p.player_id;
22

```

Results		Messages							
	course_name	player_name	tournament_name	strokes	n_rounds	pos	date	purse	season
1	Accordia Golf Narashino CC	Adam Long	The ZOZO Championship	279	4	25	2021-10-24	9.95	2022
2	Accordia Golf Narashino CC	Alexander Noren	The ZOZO Championship	278	4	18	2021-10-24	9.95	2022
3	Accordia Golf Narashino CC	Andrew Putnam	The ZOZO Championship	282	4	39	2021-10-24	9.95	2022
4	Accordia Golf Narashino CC	Adam Schenk	The ZOZO Championship	280	4	28	2021-10-24	9.95	2022
5	Accordia Golf Narashino CC	Branden Grace	The ZOZO Championship	275	4	7	2021-10-24	9.95	2022
6	Accordia Golf Narashino CC	Bill Haas	The ZOZO Championship	285	4	52	2021-10-24	9.95	2022
7	Accordia Golf Narashino CC	Brandon Hagy	The ZOZO Championship	286	4	54	2021-10-24	9.95	2022
8	Accordia Golf Narashino CC	Brendan Steele	The ZOZO Championship	270	4	2	2021-10-24	9.95	2022
9	Accordia Golf Narashino CC	Brendon Todd	The ZOZO Championship	288	4	62	2021-10-24	9.95	2022
10	Accordia Golf Narashino CC	Chesson Hadley	The ZOZO Championship	288	4	62	2021-10-24	9.95	2022
11	Accordia Golf Narashino CC	Charley Hoffman	The ZOZO Championship	280	4	28	2021-10-24	9.95	2022
12	Accordia Golf Narashino CC	Chan Kim	The ZOZO Championship	276	4	15	2021-10-24	9.95	2022
13	Accordia Golf Narashino CC	Chris Kirk	The ZOZO Championship	284	4	48	2021-10-24	9.95	2022
14	Accordia Golf Narashino CC	Collin Morikawa	The ZOZO Championship	275	4	7	2021-10-24	9.95	2022
15	Accordia Golf Narashino CC	Carlos Ortiz	The ZOZO Championship	141	2	0	2021-10-24	9.95	2022
16	Accordia Golf Narashino CC	C.T. Pan	The ZOZO Championship	287	4	57	2021-10-24	9.95	2022
17	Accordia Golf Narashino CC	Cameron Tringale	The ZOZO Championship	270	4	2	2021-10-24	9.95	2022
18	Accordia Golf Narashino CC	Doug Ghim	The ZOZO Championship	289	4	66	2021-10-24	9.95	2022
19	Accordia Golf Narashino CC	Doc Redman	The ZOZO Championship	294	4	75	2021-10-24	9.95	2022
20	Accordia Golf Narashino CC	Emiliano Grillo	The ZOZO Championship	291	4	73	2021-10-24	9.95	2022
21	Accordia Golf Narashino CC	Erik van Rooyen	The ZOZO Championship	284	4	48	2021-10-24	9.95	2022
22	Accordia Golf Narashino CC	Garrick Higgo	The ZOZO Championship	294	4	75	2021-10-24	9.95	2022
23	Accordia Golf Narashino CC	Harry Higgs	The ZOZO Championship	282	4	39	2021-10-24	9.95	2022

```

30 -- Find the top 10 players with the most tournament wins:
31 SELECT p.player_name, COUNT(COALESCE(r.pos, 0)) AS num_wins
32 FROM players p
33 JOIN results r ON p.player_id = r.player_id
34 WHERE COALESCE(r.pos, 0) = 1
35 GROUP BY p.player_name
36 ORDER BY num_wins DESC;
37

```

Results Messages

	player_name	num_wins
1	Justin Thomas	9
2	Dustin Johnson	8
3	Rory McIlroy	8
4	Bryson DeChambeau	7
5	Patrick Cantlay	7
6	Jon Rahm	6
7	Brooks Koepka	6
8	Collin Morikawa	4
9	Cameron Smith	4
10	Patrick Reed	4
11	Max Homa	4
12	Viktor Hovland	4
13	Webb Simpson	3
14	Tiger Woods	3
15	Tony Finau	3
16	Sam Burns	3
17	Phil Mickelson	3
18	Scottie Scheffler	3
19	Kevin Na	3
20	Justin Rose	3
21	Jason Kokrak	3
22	Cameron Champ	3
23	Francesco Molinari	3

```

38  -- Find the average number of strokes per round for each course:
39  SELECT t.course_name, AVG(r.strokes/r.n_rounds) AS avg_strokes_per_round
40  FROM tournaments t
41  JOIN results r ON t.tournament_id = r.tournament_id
42  GROUP BY t.course_name
43  ORDER BY avg_strokes_per_round ASC;
44

```

Results Messages

	course_name	avg_strokes_per_round
1	Aronimink Golf Club	67
2	Caves Valley Golf Club	68
3	Sedgefield Country Club	68
4	Sherwood CC	68
5	The Summit Club	68
6	Waialae CC	68
7	Wilmington Country Club	69
8	TPC Kuala Lumpur	69
9	TPC Boston	69
10	TPC Craig Ranch	69
11	TPC Deere Run	69
12	TPC River Highlands	69
13	TPC Southwind	69
14	TPC Summerlin	69
15	Trinity Forest Golf Club	69
16	Sea Island Resort	69
17	Bellerive Country Club	69
18	Accordia Golf Narashino CC	69
19	Albany	69
20	East Lake Golf Club	69
21	El Camaleon GC	69
22	Firestone Country Club	69
23	Kapalua Resort	69
24	Keene Trace Golf Club	69
25	La Quinta CC	69
26	Old White Course	69
27	Medinah	69

```

45 -- Find the average purse for each course:
46 SELECT t.course_name, AVG(t.purse) AS avg_purse
47 FROM tournaments t
48 GROUP BY t.course_name
49 ORDER BY avg_purse DESC;
50

```

Results Messages

	course_name	avg_purse
1	The Country Club	17.5
2	Southern Hills Country Club	15
3	Wilmington Country Club	15
4	TPC Sawgrass	14.5
5	St. Andrews	14
6	Torrey Pines South	12.5
7	Winged Foot GC	12.5
8	Shinnecock Hills Golf Club	12
9	Kiawah Island Golf Resort	12
10	Augusta National Golf Club	11.9
11	Royal St. George's Golf Club	11.5
12	TPC Harding Park	11
13	Carnoustie Golf Club	10.8
14	Royal Portrush	10.75
15	TPC Southwind	10.57
16	The Concession Golf Club	10.5
17	Bellerive Country Club	10.5
18	Bethpage	10.5
19	Chapultepec	10.25
20	Firestone Country Club	10
21	Sheshan International GC	10
22	Accordia Golf Narashino CC	9.85
23	The Summit Club	9.75
24	Shadow Creek GC	9.75
25	Bay Hill	9.72
26	Caves Valley Golf Club	9.5
27	Olympia Fields Country Club	9.5

```

51  -- Which players missed the cut multiple times throughout the 2022 PGA golf season
52  SELECT p.player_name, COUNT(*) as num_missed_cuts
53  FROM players p
54  JOIN results r ON p.player_id = r.player_id
55  JOIN tournaments t ON r.tournament_id = t.tournament_id
56  WHERE t.season = '2022' -- Replace with the desired season
57  AND r.pos = 0
58  GROUP BY p.player_name
59  HAVING COUNT(*) > 1
60  ORDER BY num_missed_cuts DESC;
61

```

Results Messages

	player_name	num_missed_cuts
1	Brian Stuard	20
2	Martin Trainer	19
3	Nick Watney	19
4	Kevin Tway	18
5	Roger Sloan	18
6	Sung Kang	18
7	Brandon Hagy	18
8	Dawie van der Walt	17
9	Kramer Hickok	17
10	Stephan Jaeger	16
11	Taylor Moore	16
12	Richy Werenski	16
13	Scott Gutschewski	16
14	Harry Higgs	16
15	Adam Schenk	16
16	Brice Garnett	16
17	Chesson Hadley	15
18	Jason Dufner	15
19	Curtis Thompson	15
20	Seth Reeves	15
21	Robert Streb	15
22	Kelly Kraft	15
23	Jonas Blixt	14
24	Paul Barjon	14
25	Sam Ryder	14

Below is a screenshot of a query in our database that shows the results of the top 10 players in the 2021 Masters tournament, alongside the official results. This query is an example of how our database app can be used to quickly retrieve data that is relevant to our users. The official results prove that our data is accurate, and the query shows that our code and queries are working correctly. This level of accuracy and reliability is what sets our database app apart from others should we launch it.

```

62  |-- 2021 Masters Results
63  SELECT p.player_name, r.strokes, r.n_rounds, r.pos
64  FROM players p
65  JOIN results r ON p.player_id = r.player_id
66  JOIN tournaments t ON r.tournament_id = t.tournament_id
67  WHERE t.tournament_name = 'Masters Tournament'
68  AND YEAR(t.date) = 2021
69  AND r.pos > 0 -- Exclude players with pos = 0
70  ORDER BY r.pos ASC;
71

```

Results Messages

	player_name	strokes	n_rounds	pos
1	Hideki Matsuyama	278	4	1
2	Will Zalatoris	279	4	2
3	Xander Schauffele	281	4	3
4	Jordan Spieth	281	4	3
5	Marc Leishman	282	4	5
6	Jon Rahm	282	4	5
7	Justin Rose	283	4	7
8	Patrick Reed	284	4	8
9	Corey Connors	284	4	8
10	Cameron Smith	285	4	10
11	Tony Finau	285	4	10
12	Stewart Cink	286	4	12
13	Kevin Na	286	4	12
14	Brian Harman	286	4	12
15	Webb Simpson	286	4	12
16	Si Woo Kim	286	4	12
17	Robert MacIntyre	286	4	12
18	Collin Morikawa	287	4	18
19	Scottie Scheffler	287	4	18
20	Tyrrell Hatton	287	4	18
21	Shane Lowry	288	4	21
22	Justin Thomas	288	4	21
23	Harris English	288	4	21
24	Phil Mickelson	288	4	21
25	Wilbert Hord	288	4	21

[sh Live](#) [Leader Board](#)

[Ac](#)

POS	PLAYER	R1	R2	R3	R4	TOTAL SCORE	TOTAL PAR
1	H Matsuyama	69	71	65	73	278	-10
2	W Zalatoris	70	68	71	70	279	-9
T3	J Spieth	71	68	72	70	281	-7
T3	X Schauffele	72	69	68	72	281	-7
T5	J Rahm	72	72	72	66	282	-6
T5	M Leishman	72	67	70	73	282	-6
7	J Rose	65	72	72	74	283	-5
T8	P Reed	70	75	70	69	284	-4
T8	C Connors	73	69	68	74	284	-4
T10	C Smith	74	68	73	70	285	-3

```

72 -- name of the player, their total strokes for the tournament, and the year in which they won
73 -- for each Masters Tournament between 2018 and 2022, sorted by year in ascending order.
74 SELECT p.player_name, r.strokes, YEAR(t.date) AS year
75 FROM players p
76 JOIN results r ON p.player_id = r.player_id
77 JOIN tournaments t ON r.tournament_id = t.tournament_id
78 WHERE t.tournament_name = 'Masters Tournament'
79 AND YEAR(t.date) BETWEEN 2018 AND 2022
80 AND r.pos = 1 -- Include only the winners
81 ORDER BY year ASC;
82
83

```

[Results](#) [Messages](#)

	player_name	strokes	year
1	Patrick Reed	273	2018
2	Tiger Woods	275	2019
3	Dustin Johnson	268	2020
4	Hideki Matsuyama	278	2021
5	Scottie Scheffler	278	2022


```

84 -- Top 10 finishes with the number of strokes behind the winner for Tiger Woods across all tournaments from 2018-2022.
85 SELECT TOP 10 t.tournament_name, t.season, r.pos, r.strokes - (SELECT MIN(strokes) FROM results WHERE tournament_id = r.tournament_id AND pos = 1) AS strokes_back
86 FROM results r
87 JOIN tournaments t ON r.tournament_id = t.tournament_id
88 JOIN players p ON r.player_id = p.player_id
89 WHERE p.player_name = 'Tiger Woods'
90 AND t.season BETWEEN '2018' AND '2022'
91 AND r.pos > 0
92 ORDER BY r.pos ASC;
93

```

Results Messages

	tournament_name	season	pos	strokes_back
1	The ZOZO Championship	2020	1	0
2	Masters Tournament	2019	1	0
3	Tour Championship	2018	1	0
4	PGA Championship	2018	2	2
5	Valspar Championship	2018	2	1
6	Hero World Challenge	2020	4	4
7	Quicken Loans National	2018	4	10
8	Arnold Palmer Invitational P.	2018	5	8
9	BMW Championship	2018	6	3
10	The Open	2018	6	3

```

95 -- return all the tournaments where Tiger Woods missed the cut 2018-2022
96 SELECT t.tournament_name, t.season, t.date, r.pos
97 FROM tournaments t
98 JOIN results r ON t.tournament_id = r.tournament_id
99 JOIN players p ON r.player_id = p.player_id
100 WHERE p.player_name = 'Tiger Woods' AND r.pos = 0
101 ORDER BY t.season ASC;
102

```

Results Messages

	tournament_name	season	date	pos
1	Genesis Open	2018	2018-02-18	0
2	U.S. Open	2018	2018-06-17	0
3	The Open	2019	2019-07-21	0
4	PGA Championship	2019	2019-05-19	0
5	The Northern Trust	2019	2019-08-11	0
6	U.S. Open	2021	2020-09-20	0
7	The Open	2022	2022-07-17	0

```

104 |-- Waste Management Phoenix Open 2019 Leaderboard
105 SELECT r.pos, p.player_name, (r.strokes - t.par) AS total
106 FROM players p
107 JOIN results r ON p.player_id = r.player_id
108 JOIN tournaments t ON r.tournament_id = t.tournament_id
109 WHERE r.tournament_id = '401056513' AND r.pos > 0
110 ORDER BY r.pos ASC
111
112

```

Results Messages

	pos	player_name	total
1	1	Rickie Fowler	-17
2	2	Branden Grace	-15
3	3	Justin Thomas	-14
4	4	Matt Kuchar	-12
5	4	Bubba Watson	-12
6	4	Chez Reavie	-12
7	7	Chris Stroud	-11
8	7	Gary Woodland	-11
9	7	Sungjae Im	-11
10	10	Russell Knox	-10
11	10	Xander Schauffele	-10
12	10	Jhonattan Vegas	-10
13	10	Jon Rahm	-10
14	10	Harold Varner III	-10
15	15	Hideki Matsuyama	-9
16	15	Cameron Smith	-9
17	15	Russell Henley	-9
18	15	Tyrrell Hatton	-9
19	15	Trey Mullinax	-9
20	20	Webb Simpson	-8
21	20	Scott Piercy	-8
22	20	Jason Kokrak	-8
23	20	Byeong Hun An	-8
24	20	Chesson Hadley	-8
25	20	Charley Hoffman	-8
26	26	Bud Cauley	-7

Basic layout of application



Part of the project was building a database app that allows users to search through results of PGA tour golf tournaments from 2018-2022. Users can filter by player, tournament, or date to quickly find the information they need. The app is designed for golf enthusiasts and statisticians and provides comprehensive data coverage of PGA tour tournaments from 2018-2022. The user-friendly interface and reliable, up-to-date information make it an essential tool for tracking the progress of favorite players or creating custom reports.

Here is what a user of our app would see once we design the layout. Users can select tournaments from a dropdown menu to view results from a specific event. They can also enter a player's name in a search bar to view all their tournament results within the selected time frame. Additionally, users can select courses from a dropdown menu to view results from a specific course. Lastly, they can choose the date range using a two-way slider to narrow down results to a specific time frame. Our user interface design is simple, intuitive, and easy to navigate, ensuring that users can find the information they need quickly and efficiently.

Reflection

While we encountered some challenges during the development of the PGA database app, the experience helped us gain a deeper understanding of fundamental data and database concepts, the database development lifecycle, and how to analyze business problems and design appropriate data-oriented solutions using the relational data storage model. Additionally, we discovered that the course's practical assignments were highly effective in developing our skills in designing, implementing, and querying databases using SQL. Overall, we found this experience to be a valuable learning opportunity that allowed us to improve our abilities in analyzing business problems and constructing effective data-oriented solutions.

In conclusion, our project is a database app that allows users to easily search through results of PGA tour golf tournaments from 2018-2022. We applied the knowledge we gained from the course Data analysis to create this app, utilizing our skills in entity and attribute listing, relationship modeling, and SQL script creation. Our user-friendly and reliable app provides comprehensive data coverage, making it an essential tool for tracking the progress of favorite players or creating custom reports. We hope this presentation has shown you the value of our project and how it can benefit golf enthusiasts and statisticians alike.

Contributions

We both worked on each aspect of the project as a team. We met every Thursday evening at 5pm to discuss scope and goals for the project.

Source of data: <https://www.advancedsportsanalytics.com/pga-user-guides/#pga-raw-data-download>