SWING ANALYTICS

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USERS :

1. UMD Softball Coach
2. UMD Softball Players
3. Marketing Managers

SOURCES:

UMD Softball Schedule Page: https://umterps.com/sports/softb all/schedule

UMD Softball Roster Page: https://umterps.com/sports/softb all/roster

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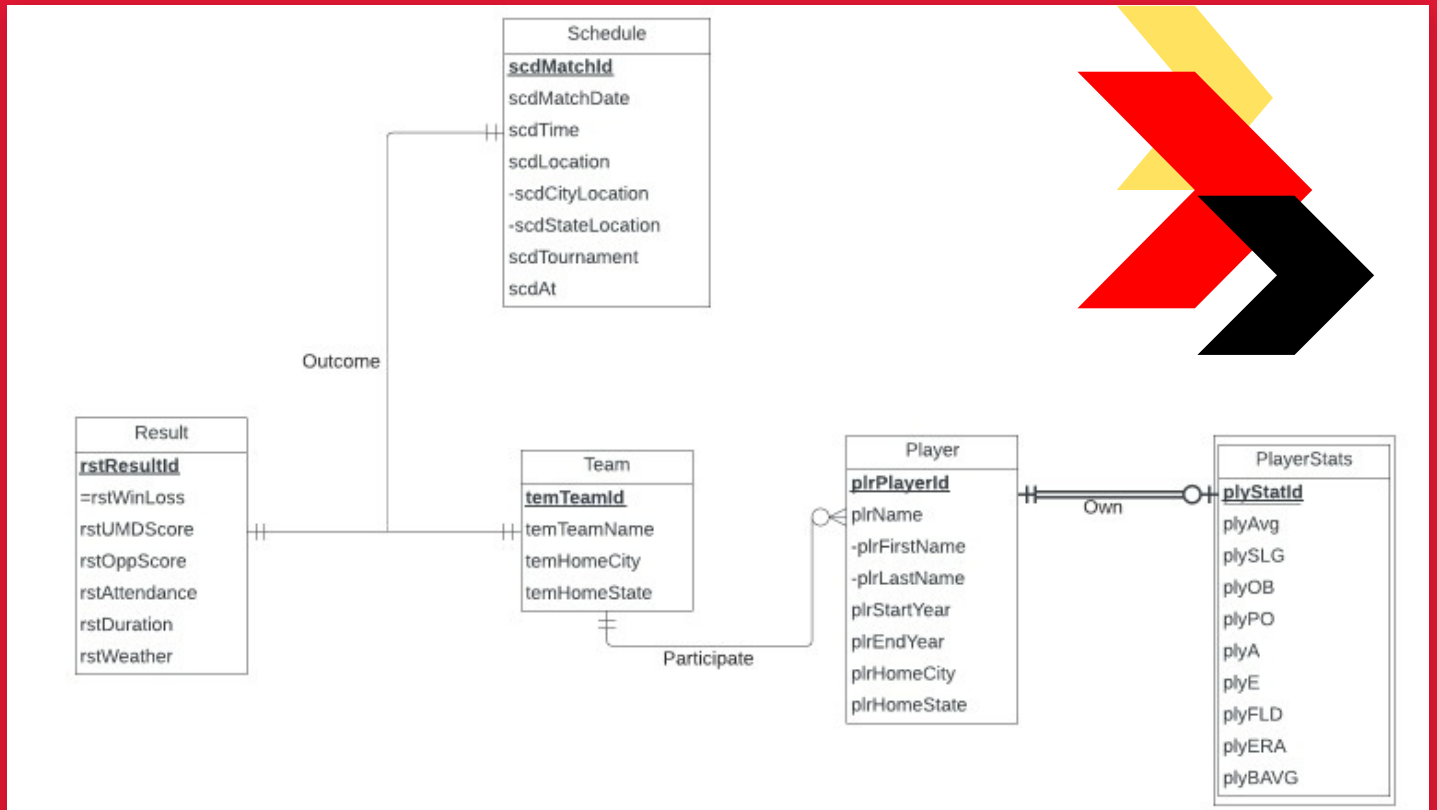
Mission:

Evaluate team performance and discern trends, empowering our clients with actionable insights to optimize strategy, refine training, and ultimately elevate their success.

Objective:

- Identify the toughest and easiest teams to compete against, analyze win-loss ratios against each opponent, and develop strategies for consistent success.
- Assess the impact of weather conditions and time on game outcomes and form strategy accordingly.
- Evaluate player development by analyzing statistics, thereby enhancing individual and team performance.
- Explore marketing opportunities by identifying potential locations for advertising and strategies to increase fan support, bolstering the team's presence and fan base.

ER Diagram



Project_0507_15_Proposal

Relation Schema

Team (**temTeamId**, temTeamName, temHomeCity, temHomeState)

Player (*plrTeamId*, **plrPlayerId**, plrFirstName, plrLastName, plrStartYear, plrEndYear, plrHomeCity, plrHomeState)

PlayerStats (***plrPlayerId*, plyStatId**, plyAvg, plySLG, plyOB, plyERA, plyBAVG, plyPO, plyA, plyE, plyFLD)

Schedule (**scdMatchId**, scdMatchDate, scdTime, scdCityLocation, scdStateLocation, scdTournament, scdAt)

Result (**rstResultId**, rstUMDScore, rstOppScore, rstAttendance, rstDuration,rstWeather)

Outcome (***scdMatchId***, ***oppTeamId***, ***rstResultId***)

CREATE STATEMENT FOR PLAYER TABLE

```
CREATE TABLE Player (
        plrTeamId CHAR (4),
        plrPlayerId CHAR (4) NOT NULL,
        plrFirstName VARCHAR (50),
        plrLastName VARCHAR (50),
        plrStartYear SMALLINT,
        plrEndYear SMALLINT,
        plrHomeCity VARCHAR (50),
        plrHomeState VARCHAR (50),
        CONSTRAINT pk_Player_playerId PRIMARY KEY
        (plrPlayerId), CONSTRAINT fk_Player_teamId FOREIGN KEY
        (plrTeamId)
                REFERENCES Team (temTeamId)
                ON DELETE CASCADE ON UPDATE CASCADE
```

What are the 10 biggest victory Margin for UMD and against who?

```
WITH VictoryMargins AS (
        SELECT t.temTeamName AS 'Team Name',
        MAX(r.rstUMDScore - r.rstOppScore)
        AS 'Victory Margin'
        FROM Result r, Outcome o, Team t, Schedule s
        WHERE r.rstResultId = o.rstResultId
        AND o.oppTeamID = t.temTeamId
        AND r.rstUMDScore > r.rstOppScore
        GROUP BY t.temTeamName)
SELECT TOP(10) v.*
FROM VictoryMargins v
ORDER BY v.[Victory Margin] DESC;
```

	Team Name	Victory Margin
1	Iowa	19
2	Howard	15
3	Rhode Island	15
4	Lafayette	14
5	Indiana	13
6	Fairfield	11
7	Michigan State (DH)	11
8	Monmouth	11
9	Dartmouth	10
10	East Carolina	10

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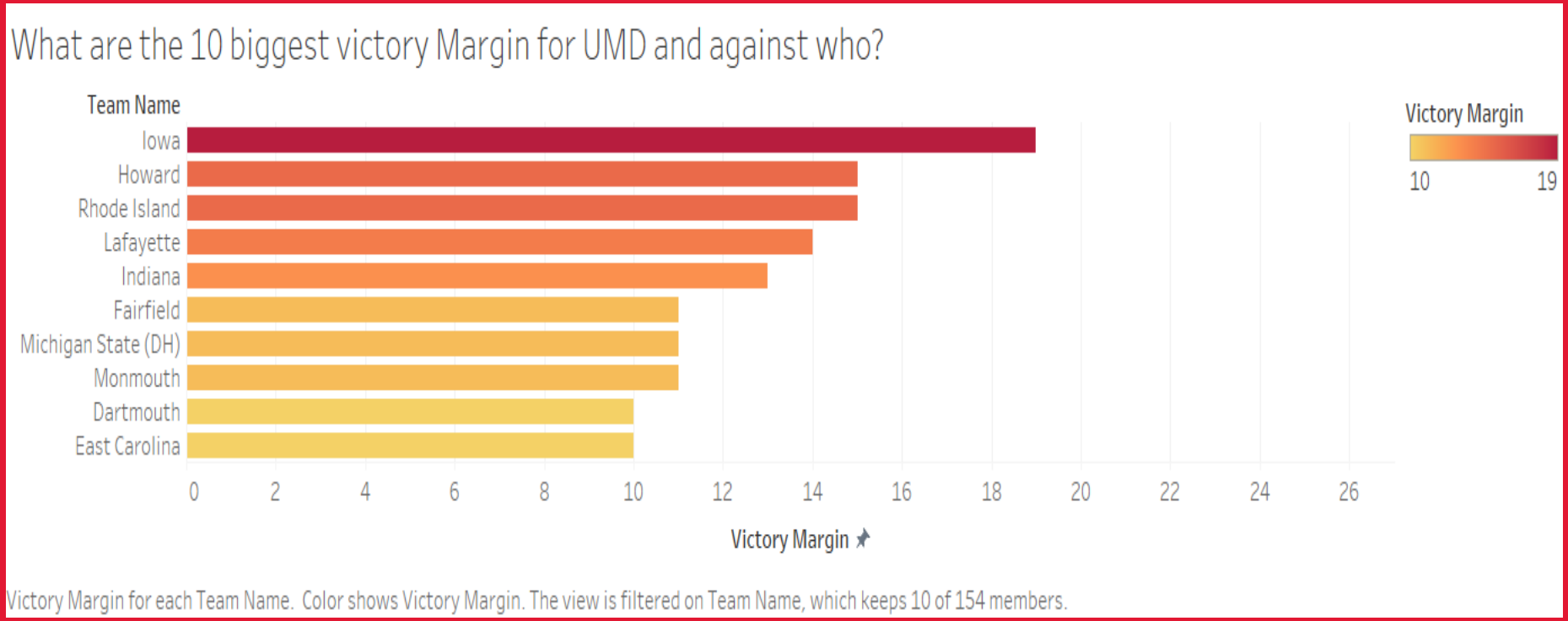
Tableau Output

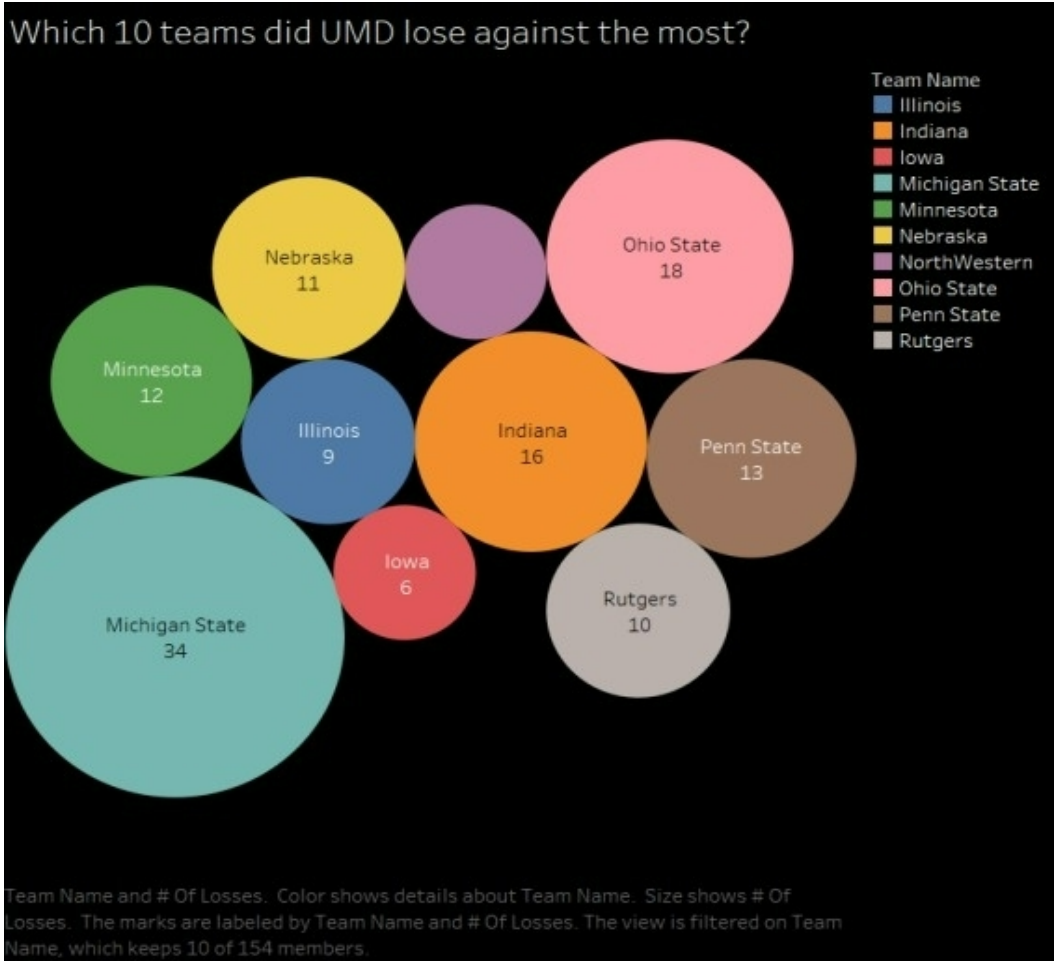


Which 10 teams did UMD lose against the most?

```
WITH Losses AS (
        SELECT t.temTeamName AS 'Opponent',
            COUNT(r.rstResultId) AS '# of times
            Lost'
        FROM Result r, Outcome o, Team t
        WHERE r.rstResultId =
        o.rstResultId AND o.oppTeamID =
        t.temTeamId AND r.rstUMDScore <
        r.rstOppScore GROUP BY
        t.temTeamName)
SELECT TOP(10) l.*
FROM Losses l
ORDER BY l.[# of times Lost] DESC;
```

	Opponent	# of times Lost
1	Michigan State	34
2	Ohio State	18
3	Indiana	16
4	Penn State	13
5	Minnesota	12
6	Nebraska	11
7	Rutgers	10
8	Illinois	9
9	Iowa	6
10	NorthWestern	6

Tableau Output



Who are the Top players to be chosen for 2024 year?

```
WITH AverageStats AS
(SELECT AVG(plyAvg) 'plyAverageAvg'
FROM PlayerStats
where plyAvg < 1 And
                    plyAvg >0),

AboveAvgPlayer AS (
SELECT plyPlayerId, plyAvg FROM PlayerStats
WHERE  plyAvg > (SELECT plyAverageAvg FROM AverageStats)  AND
                                    plyAvg < 1
)

SELECT CONCAT(p.plrFirstName , ' ', p.plrLastName) AS 'Player Full Name',
                     a.plyAvg AS 'Player Average'
FROM Player p, AboveAvgPlayer a
WHERE p.plrPlayerId = a.plyPlayerId AND
                    p.plrStartYear >= 2021
ORDER BY a.plyAvg DESC;
```

	Player Full Name	Player Average
1	Jennifer Bran	0.333
2	Jaeda McFarland	0.331
3	Mackense Greico	0.328
4	Madiso Runya	0.32
5	Kiley Goff	0.292
6	Mega Mikami	0.281
7	Michaela Jones	0.271
8	Sammi Woods	0.255

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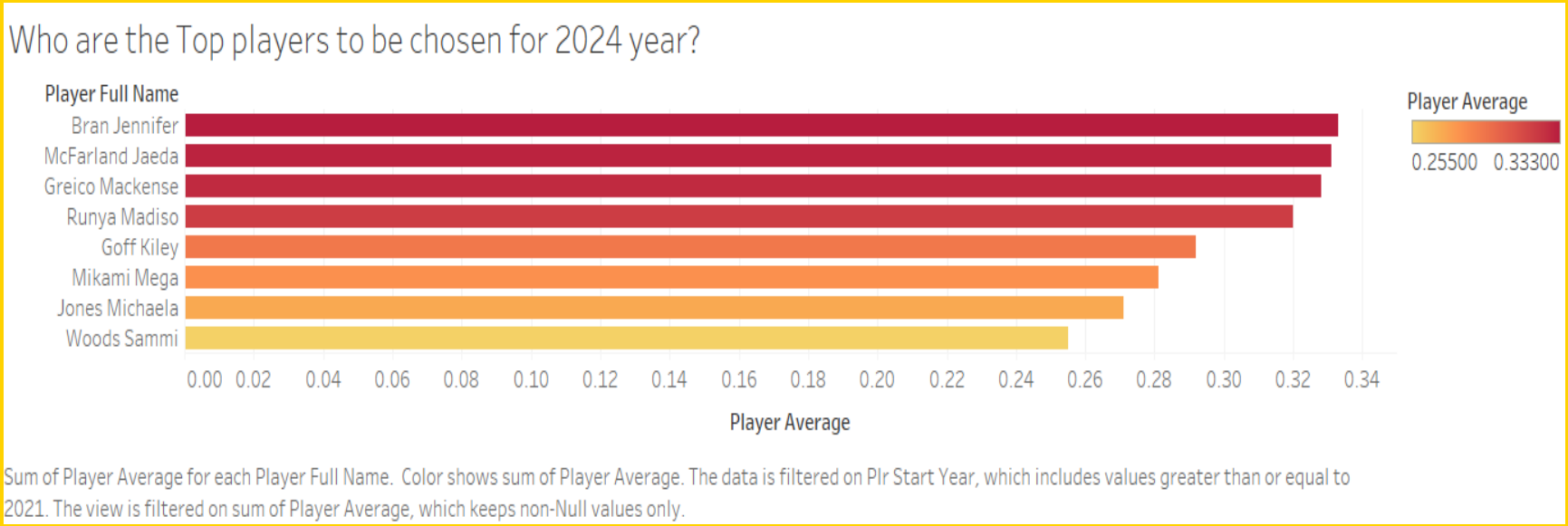
Tableau Output

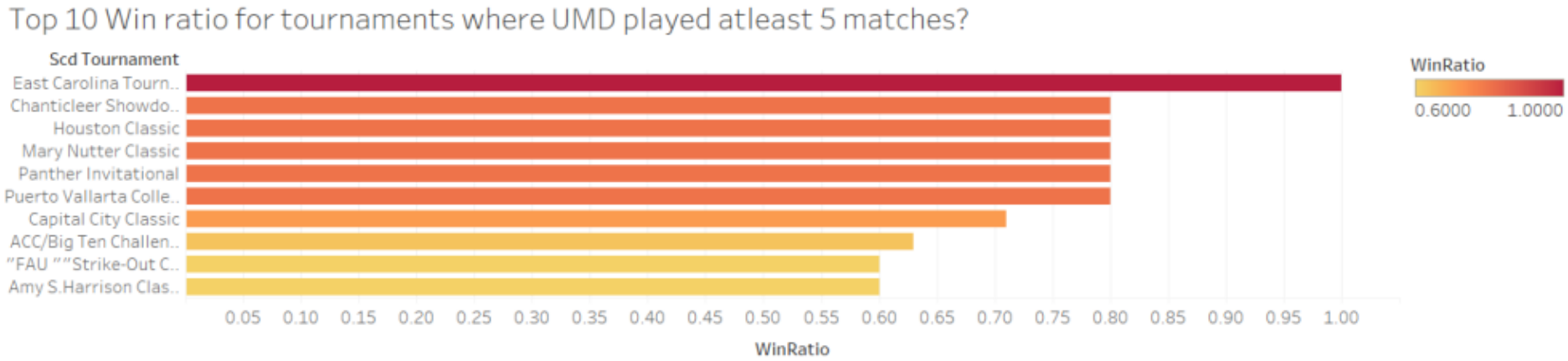


Top 10 Win ratio for tournaments where UMD played atleast 5 matches?

```
WITH TournamentOutcome AS
(SELECT
                        CASE WHEN rstUMDScore > rstOppScore THEN 'Win'
                        WHEN rstUMDScore < rstOppScore THEN 'Loss'
                        when (rstUMDScore=0 and rstOppScore = 0) Then 'Cancelled'
                        ELSE 'Draw' END AS 'MatchOutcome',
                        s.scdTournament
FROM Result r,
                       Outcome o,
                       Schedule s
WHERE r.rstResultId = o.rstResultId And
                        o.scdMatchId = s.scdMatchId And
                        s.scdTournament is not null),

TotalMatches AS (
SELECT scdTournament,
                        Cast(count(CASE WHEN MatchOutcome = 'Win' or
                                MatchOutcome = 'Loss' or  MatchOutcome = 'Draw' THEN
                                MatchOutcome END  )   AS FLOAT) 'MatchesCountByTournament',
                        Cast(Count(CASE
                                        WHEN MatchOutcome ='Win'
                                        THEN MatchOutcome END) AS FLOAT) AS
'WinMatchCount'
FROM TournamentOutcome
WHERE MatchOutcome != 'Cancelled'
GROUP BY scdTournament
HAVING COUNT(MatchOutcome) > 3
),

TournamentWinRatio AS (
SELECT scdTournament,
                        ROUND((WinMatchCount/MatchesCountByTournament), 2) as 'WinRatio'
FROM TotalMatches
WHERE MatchesCountByTournament >=5
)

SELECT  TOP 10 * FROM TournamentWinRatio
ORDER BY WinRatio DESC;
```

	scdTournament	WinRatio
1	East Carolina Tournament	1
2	Houston Classic	0.8
3	Chanticleer Showdown	0.8
4	Mary Nutter Classic	0.8
5	Panther Invitational	0.8
6	Puerto Vallarta College Challenge	0.8
7	Capital City Classic	0.71
8	ACC/Big Ten Challenge	0.63
9	Amy S.Harrison Classic	0.6
10	Coastal Carolina Kicki'Chicken Classic	0.6

Tableau Output



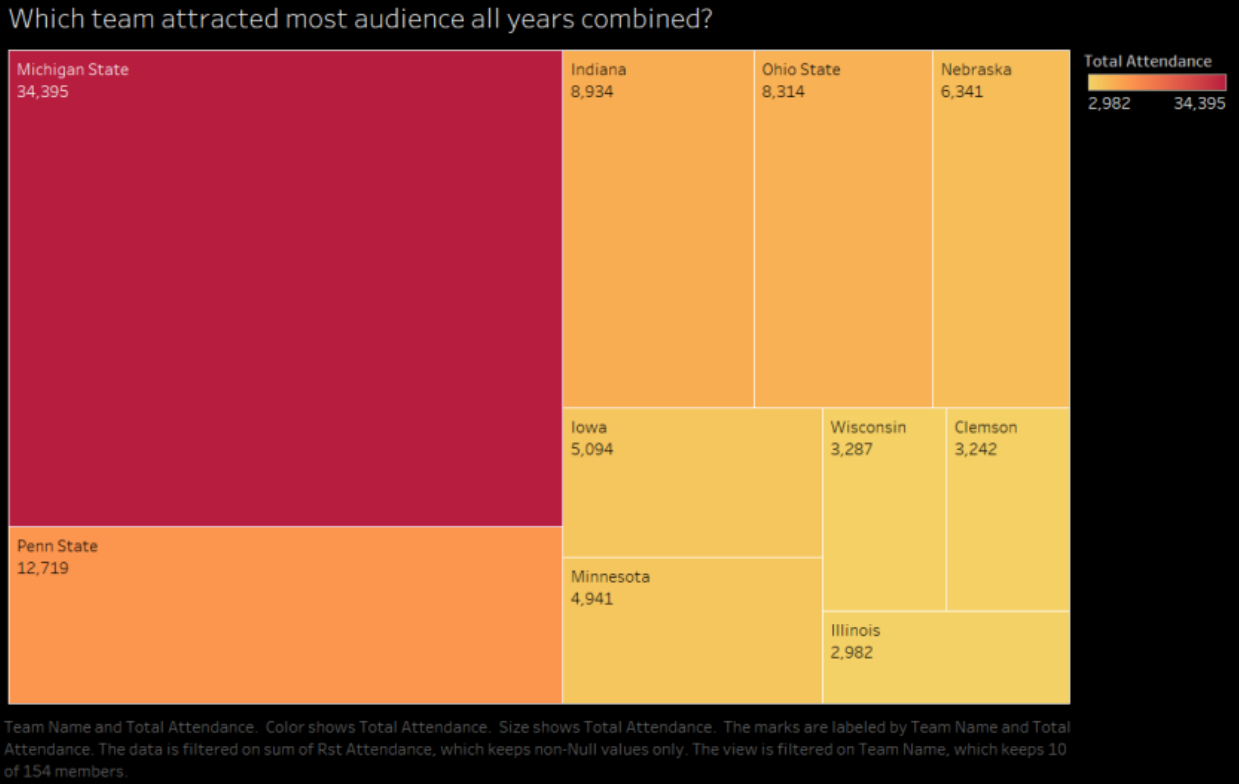
WinRatio as an attribute for each Scd Tournament. Color shows WinRatio as an attribute. The view is filtered on WinRatio as an attribute and Scd Tournament. The WinRatio as an attribute filter keeps non-Null values only. The Scd Tournament filter keeps 10 of 36 members.

Which team attracted most audience all years combined?

```
WITH BaseTable AS (
SELECT t.temTeamName,
                r.rstAttendance,
                s.scdCityLocation
FROM Team t,
               Result r,
               schedule s,
               Outcome o
WHERE t.temTeamId = o.oppTeamID AND
                o.rstResultId = r.rstResultId AND
                o.scdMatchId  = s.scdMatchId
),

TotalAudience AS (
SELECT temTeamName,
                sum(rstAttendance) AS
'TotalAttendance'
FROM BaseTable
GROUP BY  temTeamName)

SELECT TOP 10 * FROM TotalAudience
```

	temTeamName	TotalAttendance
1	Michigan State	34395
2	Penn State	12719
3	Indiana	8934
4	Ohio State	8314
5	Nebraska	6341
6	Iowa	5094
7	Minnesota	4941
8	Wisconsin	3287
9	Clemson	3242
10	Illinois	2982

Tableau Output



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How many times has UMD won so far in each weather condition?

```
WITH WeatherOutcome AS
(SELECT rstWeather,
                CASE WHEN rstUMDScore > rstOppScore THEN
'Win' END  AS 'MatchOutcome'
FROM Result r
WHERE rstWeather is not NULL
                )

SELECT rstWeather,
                count(CASE WHEN MatchOutcome = 'Win' THEN
MatchOutcome END ) AS 'Total Wins'
FROM WeatherOutcome
WHERE MatchOutcome != 'cancelled'
GROUP BY rstWeather, MatchOutcome
ORDER BY rstWeather ASC, MatchOutcome DESC
;
```

	rstWeather	Total Wins
1	Clear	28
2	Cloudy	36
3	Cold	1
4	Hazy	1
5	Overcast	17
6	Rain	3
7	Sunny	59
8	Wind	5

Tableau Output

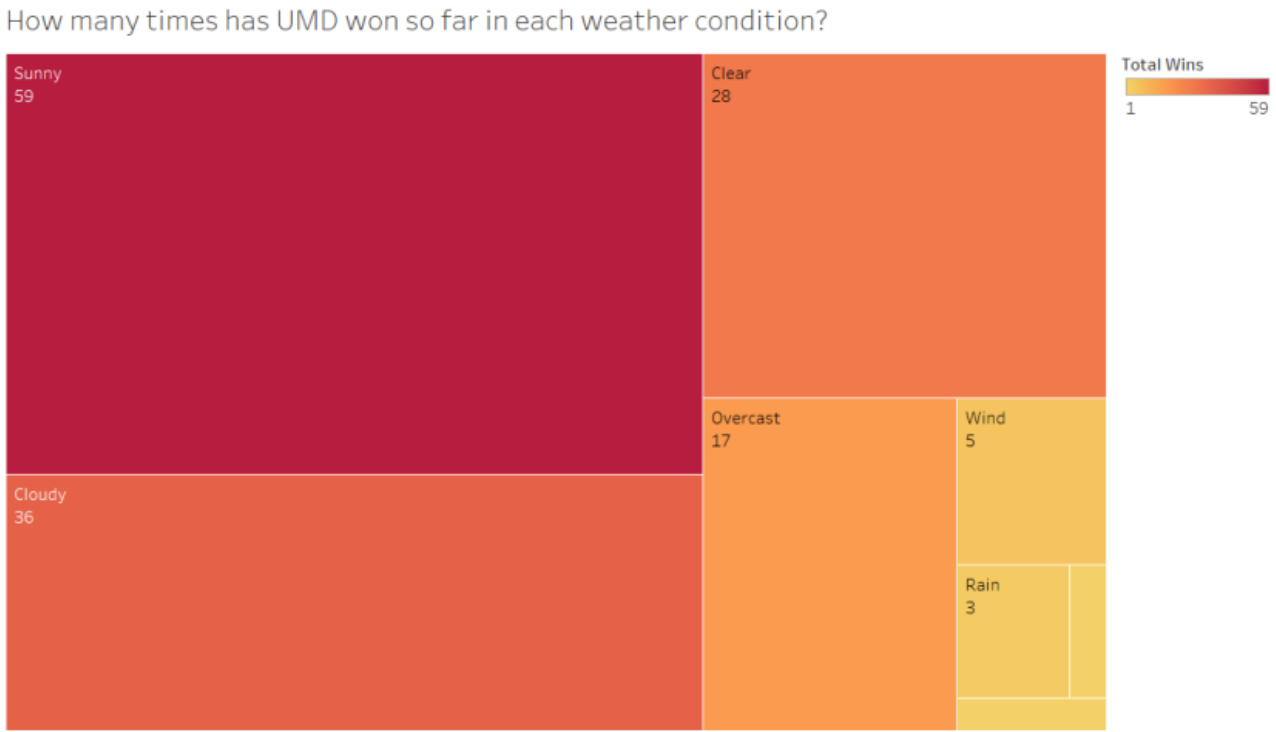
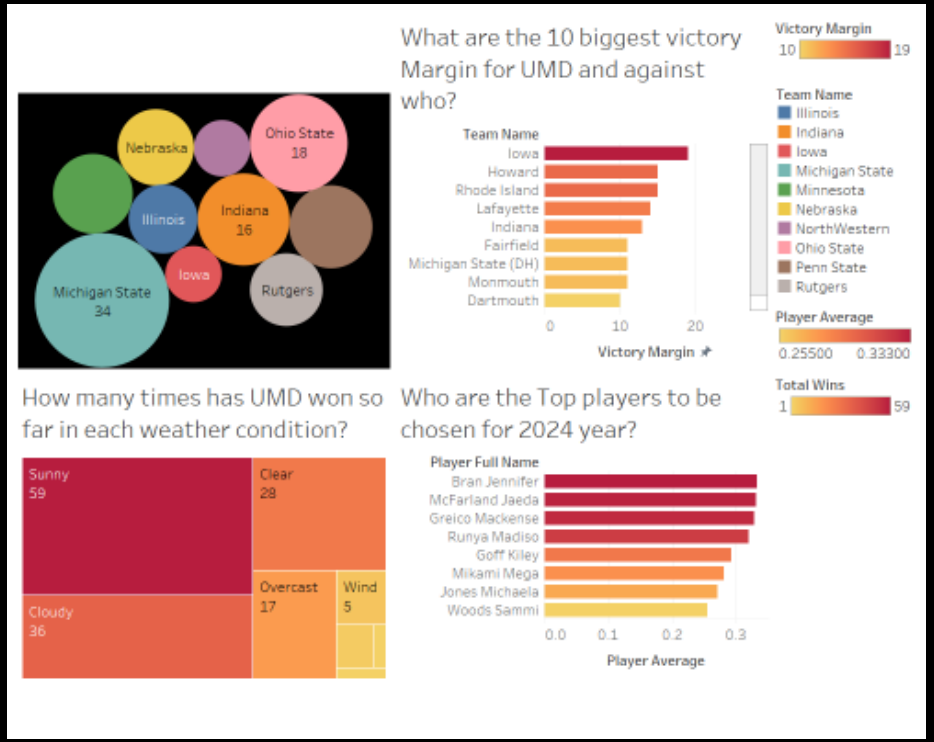
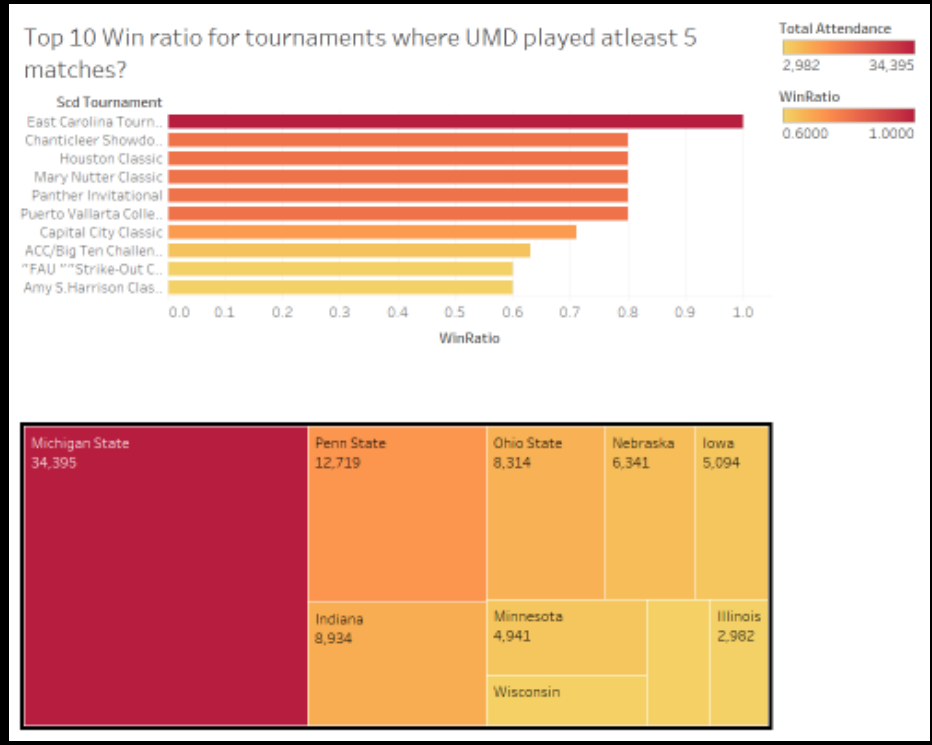


Tableau Dashboard



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