

Group 160 Database Project: MVC Men's & Women's Basketball

Mackenzie Brady, Jadon Clarkson, Molly Hohner, Kendall Starcevich, Lily Overstreet,
and Tiffany VanTassel

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Deliverable 1 - Introduction

Data Summary

Description:

This data is from Equity in Athletics Data Analysis, which contains information on the Missouri Valley Conference (MVC) Men's and Women's Basketball twelve teams stretching from 2003 to 2021 which leads to 228 data points.

[Our Cleaned Spreadsheet](#)

Relationships and Entities:

This dataset includes various information on each institution's team participants, undergraduate breakdowns, and total revenues and expenses for each respective team. It also includes individual university information including undergraduate enrollment, locations, and Unit_ID which is a unique code provided by the Integrated Postsecondary Education Data System. Our dataset consists of five separate tables: SCHOOL_INFO, EXPENSES, REVENUE, STATE, and CLASSIFICATION. SCHOOL_INFO has a many-to-one relationship with STATE and CLASSIFICATION as schools can have only one classification of size and can only be located in one state. SCHOOL_INFO and EXPENSES and REVENUE have a one-to-one relationship as each school has one corresponding value for expense and revenue.

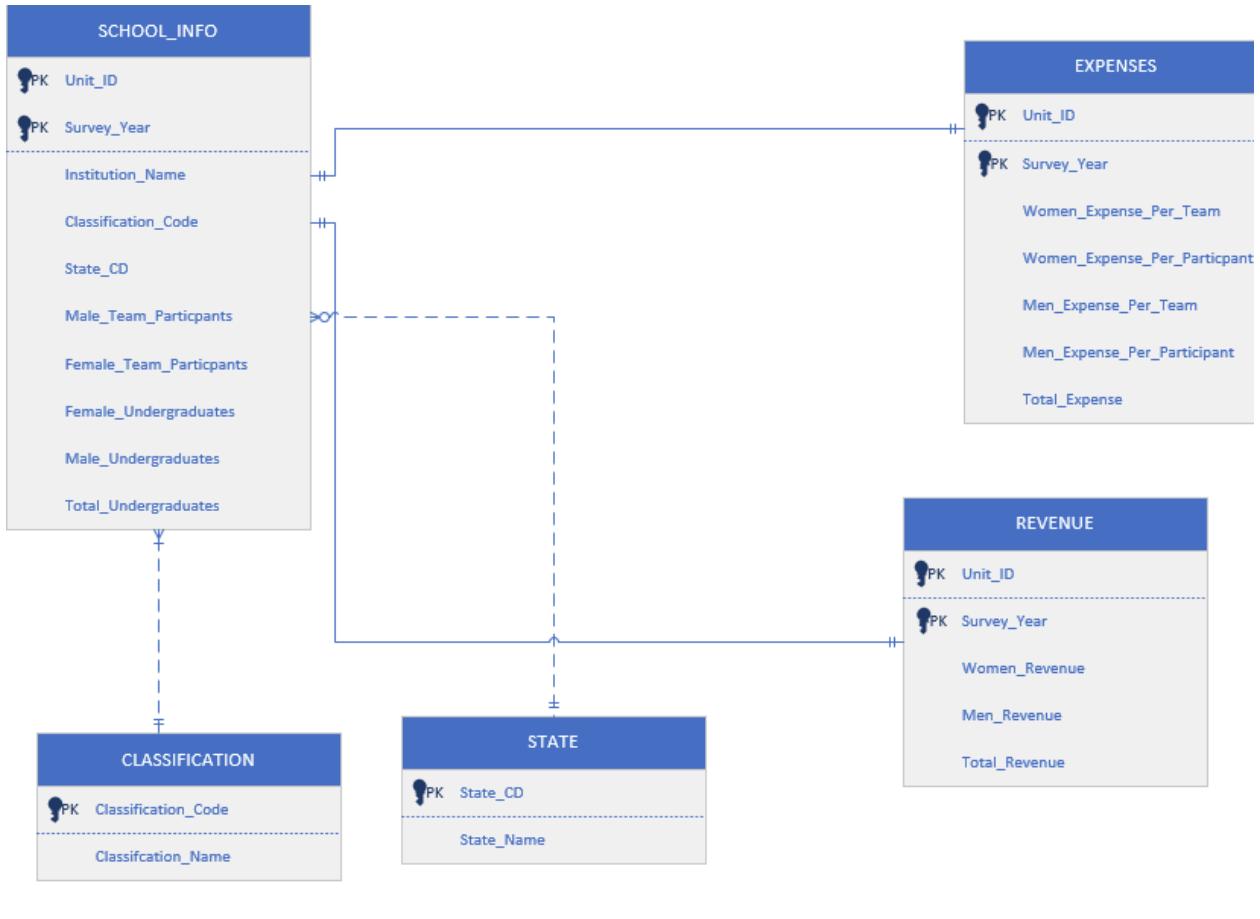
The SCHOOL_INFO table includes information regarding the total number of undergraduates (both males and females), total number of team participants (both males and females), the institution name, classification code (dictating the size of the university), state information, and the primary key of Unit_ID. The EXPENSE and REVENUE tables have composite keys of Unit_ID and Survey_Year alongside additional information: female and male expenses per team and per participant and revenue figures for males, females, and the total value. Finally, the

STATE and CLASSIFICATION tables include information about the state each university is located in and information about the size of the school.

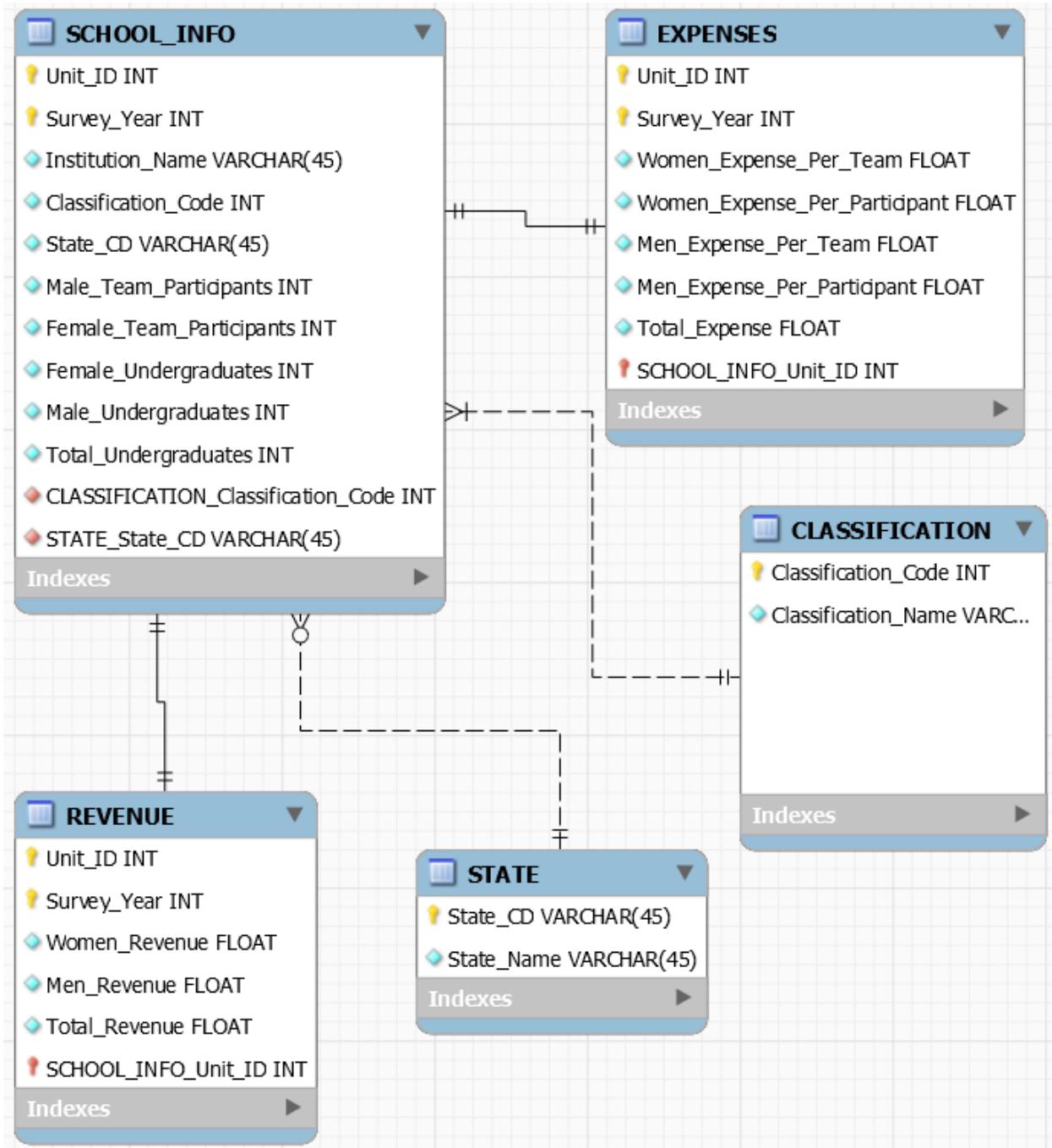
Goal & Purpose:

By analyzing this dataset, we hope to understand each institution's financial impacts on both the men's and the women's basketball teams. The included entities will allow us to derive answers pertaining to each individual team, gender disparities, and size and locational impacts.

Entity Relationship Diagram in Visio



Deliverable 2 - Database Design



Deliverable 3 - Data Tables

Data Cleaning Steps

We cleaned our data in Excel. None of our rows had any null or missing values. We deleted a few entire columns that we were not interested in examining (related to COED data). We added 2 columns: State_CD (the two letter abbreviation for State_Name) and Classification_Name (a description of the Classification_Code) in order to meet our 5 table minimum.

CREATE TABLE Code

```
CREATE TABLE RAWDATA(
    Survey_Year           INT      NOT NULL,
    Unit_ID               INT      NOT NULL,
    Institution_Name     VARCHAR(45) NOT NULL,
    State_Name             VARCHAR(45) NOT NULL,
    State_CD               VARCHAR(45) NOT NULL,
    Classification_Code   INT      NOT NULL,
    Classification_Name   VARCHAR(45) NOT NULL,
    Male_Undergraduates   INT      NOT NULL,
    Female_Undergraduates INT      NOT NULL,
    Total_Undergraduates  INT      NOT NULL,
    Male_Team_Participants INT      NOT NULL,
    Female_Team_Participants INT      NOT NULL,
    Men_Expense_Per_Participant FLOAT   NOT NULL,
    Men_Expense_Per_Team   FLOAT   NOT NULL,
    Women_Expense_Per_Participant FLOAT   NOT NULL,
    Women_Expense_Per_Team  FLOAT   NOT NULL,
    Total_Expense          FLOAT   NOT NULL,
    Men_Revenue            FLOAT   NOT NULL,
    Women_Revenue          FLOAT   NOT NULL,
    Total_Revenue          FLOAT   NOT NULL
);

CREATE TABLE EXPENSES(
    Survey_Year           INT      NOT NULL,
    Unit_ID               INT      NOT NULL,
    Men_Expense_Per_Participant FLOAT   NOT NULL,
    Men_Expense_Per_Team   FLOAT   NOT NULL,
    Women_Expense_Per_Participant FLOAT   NOT NULL,
    Women_Expense_Per_Team  FLOAT   NOT NULL,
    Total_Expense          FLOAT   NOT NULL,
    CONSTRAINT EXPENSES_PK PRIMARY KEY(Survey_Year,Unit_ID)
);

CREATE TABLE CLASSIFICATION(
    Classification_Code   INT      NOT NULL,
    Classification_Name   VARCHAR(45) NOT NULL,
    CONSTRAINT CLASSIFICATION_Classification_CodePK PRIMARY KEY(Classification_Code)
);

CREATE TABLE STATE(
    State_Name             VARCHAR(45) NOT NULL,
    State_CD               VARCHAR(45) NOT NULL,
    CONSTRAINT STATE_State_CDPK PRIMARY KEY(State_CD)
);
```

```

| CREATE TABLE SCHOOL_INFO_PER_YEAR(
    Survey_Year                INT          NOT NULL,
    Unit_ID                     INT          NOT NULL,
    Institution_Name           VARCHAR(45) NOT NULL,
    State_CD                    VARCHAR(45) NOT NULL,
    Classification_Code         INT          NOT NULL,
    Male_Team_Participants     INT          NOT NULL,
    Female_Team_Participants   INT          NOT NULL,
    Male_Undergraduates        INT          NOT NULL,
    Female_Undergraduates      INT          NOT NULL,
    Total_Undergraduates       INT          NOT NULL,
    CONSTRAINT      SCHOOL_INFO_PK PRIMARY KEY(Survey_Year,Unit_ID)

```

```

CREATE TABLE REVENUE(
    Survey_Year                INT          NOT NULL,
    Unit_ID                     INT          NOT NULL,
    Men_Revenue                 FLOAT        NOT NULL,
    Women_Revenue               FLOAT        NOT NULL,
    Total_Revenue               FLOAT        NOT NULL,
    CONSTRAINT      REVENUE_PK PRIMARY KEY(Survey_Year, Unit_ID)

```

INSERT INTO Code

```

select *
from RAWDATA;

INSERT INTO CLASSIFICATION
SELECT DISTINCT Classification_Code, Classification_Name
FROM RAWDATA;

SELECT *
FROM CLASSIFICATION;

INSERT INTO EXPENSES
SELECT Survey_Year, Unit_ID, Women_Expense_Per_Team, Women_Expense_Per_Participant,
Men_Expense_Per_Team, Women_Expense_Per_Participant, Total_Expense
FROM RAWDATA;

SELECT *
FROM EXPENSES;

```

```

ALTER TABLE EXPENSES
ADD CONSTRAINT EXPENSES_UnitFK FOREIGN KEY(Survey_Year, Unit_ID)
REFERENCES SCHOOL_INFO_PER_YEAR(Survey_Year, Unit_ID)
ON UPDATE CASCADE
ON DELETE NO ACTION;

INSERT INTO STATE
SELECT DISTINCT State_CD, State_Name
FROM RAWDATA;

SELECT *
FROM STATE;

INSERT INTO REVENUE
SELECT Survey_Year, Unit_ID, Women_Revenue, Men_Revenue, Total_Revenue
FROM RAWDATA;

SELECT *
FROM REVENUE;

ALTER TABLE REVENUE
ADD CONSTRAINT REVENUE_Unit_IDFK FOREIGN KEY(Survey_Year, Unit_ID)
REFERENCES SCHOOL_INFO_PER_YEAR(Survey_Year, Unit_ID)
ON UPDATE CASCADE
ON DELETE NO ACTION;

INSERT INTO SCHOOL_INFO_PER_YEAR
SELECT DISTINCT Survey_Year, Unit_ID, Institution_Name, State_CD, Classification_Code, Male_Team_Female_Team_Participants, Male_Undergraduates, Female_Undergraduates, Total_Undergraduates
FROM RAWDATA;

SELECT *
FROM SCHOOL_INFO_PER_YEAR;

ALTER TABLE SCHOOL_INFO_PER_YEAR
ADD CONSTRAINT SCHOOL_INFO_ClassificationCodeFK FOREIGN KEY(Classification_Code, State_CD)
REFERENCES CLASSIFICATION(Classification_Code, State_CD)
ON UPDATE CASCADE
ON DELETE NO ACTION;

```

Resulting Tables

```

139 •   SELECT *
140    FROM RAWDATA;
141

```

Result Grid							
Survey_Year	Unit_ID	Institution_Name	State_Name	State_CD	Classification_Code	Classification	
2003	219709	Belmont University	Tennessee	TN	1	Small	
2003	143358	Bradley University	Illinois	IL	1	Small	
2003	153269	Drake University	Iowa	IA	2	Medium	
2003	145813	Illinois State University	Illinois	IL	2	Medium	
2003	151324	Indiana State University	Indiana	IN	2	Medium	
2003	179566	Missouri State University	Missouri	MO	2	Medium	
2003	157401	Murray State University	Kentucky	KY	2	Medium	
2003	149222	Southern Illinois University Carbondale	Illinois	IL	2	Medium	
2003	150534	University of Evansville	Indiana	IN	1	Small	
2003	145600	University of Illinois at Chicago	Illinois	IL	3	Laroe	
2003	154095	University of Northern Iowa	Iowa	IA	2	Medium	
2003	152600	Valparaiso University	Indiana	IN	2	Medium	
2004	219709	Belmont University	Tennessee	TN	1	Small	
2004	143358	Bradley University	Illinois	IL	1	Small	
2004	153269	Drake University	Iowa	IA	2	Medium	
2004	145813	Illinois State University	Illinois	IL	2	Medium	

62 • SELECT *
63 FROM REVENUE;

Result Grid | Filter Rows: _____ | Edit: Export/Import: Wrap Cell Content:

	Survey_Year	Unit_ID	Women_Revenue	Men_Revenue	Total_Revenue
2003	143358	709022	1878450	2587470	
2003	145600	24073	1004910	1028990	
2003	145813	134149	1103440	1237590	
2003	149222	136976	1010370	1147350	
2003	150534	880419	1347780	2228200	
2003	151324	494915	1001760	1496680	
2003	152600	626897	1334290	1961190	
2003	153269	151291	758962	910253	
2003	154095	41791	625886	667677	
2003	157401	596200	1329510	1925710	
2003	179566	1696480	1878470	3574940	
2003	219709	106953	446934	553887	

107 • SELECT *
108 FROM STATE;
109

Result Grid | Filter Rows: _____ | Edit: Export/Import: Wrap Cell Content:

	State_Name	State_CD
IL	Illinois	
IN	Indiana	
IA	Iowa	
KY	Kentucky	
MO	Missouri	
TN	Tennessee	
NULL	NULL	

93 • SELECT *
94 FROM EXPENSES;
95

Result Grid | Filter Rows: _____ | Edit: Export/Import: Wrap Cell Content:

	Survey_Year	Unit_ID	Men_Expense_Per_Participant	Men_Expense_Per_Team	Women_Expense_Per_Participant	Women_Expense_Per_Team
2003	143358	142834	9522	258396	9522	
2003	145600	117792	8414	171392	8414	
2003	145813	97965	6123	207323	6123	
2003	149222	103849	6491	263615	6491	
2003	150534	169317	11288	346760	11288	
2003	151324	142144	7897	262582	7897	
2003	152600	41137	2571	46142	2571	
2003	153269	156617	11187	371424	11187	
2003	154095	125176	7824	236657	7824	
2003	157401	113023	8073	276866	8073	
2003	179566	195511	13034	257187	13034	
2003	219709	78601	6046	125070	6046	
2004	143358	183900	12260	262440	12260	
2004	145600	195364	16280	247337	16280	
2004	145813	131785	7321	201578	7321	
2004	149222	125686	8978	281520	8978	

62 • SELECT *
63 FROM CLASSIFICATION;

Result Grid | Filter Rows: _____ | Edit: Export/Import: Wrap Cell Content:

	Classification_Code	Classification_Name
1	Small	
2	Medium	
3	Large	
NULL	NULL	

61
62 • SELECT *
63 FROM SCHOOL_INFO_PER_YEAR;

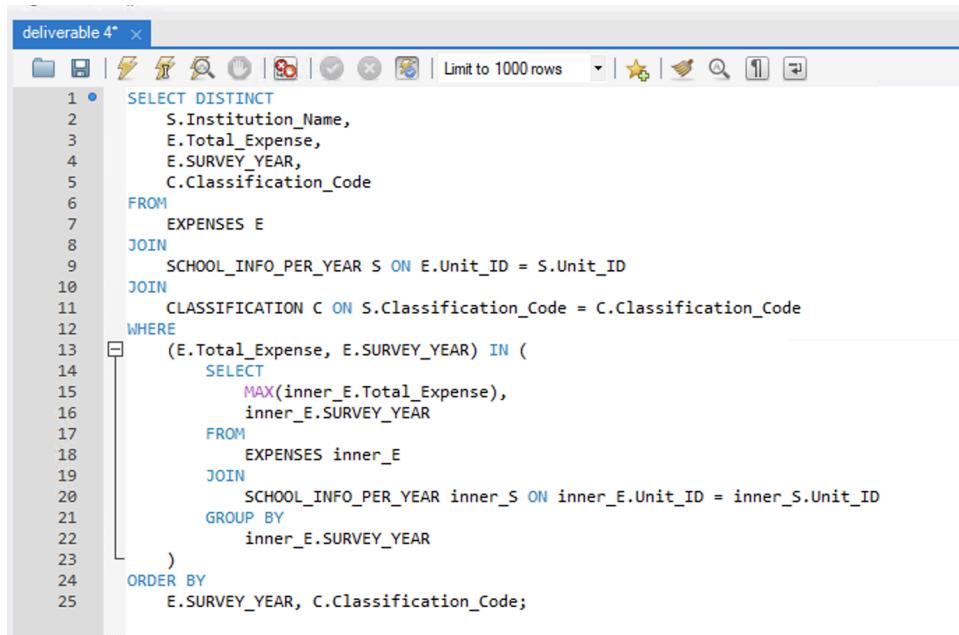
Result Grid | Filter Rows: _____ | Edit: Export/Import: Wrap Cell Content:

	Survey_Year	Unit_ID	Institution_Name	State_CD	Classification_Code	Male_Team_Participants	Female_Team_Participants	Male_Undergraduates	Female_Undergraduates	Total_Units
2003	143358	Bradley University	IL	1	16	15	2276	2651	4927	
2003	145600	University of Illinois at Chicago	IL	3	15	14	6384	7892	14276	
2003	145813	Illinois State University	IL	2	16	16	7080	9731	16811	
2003	149222	Southern Illinois University Carbondale	IL	2	14	16	8187	6488	14675	
2003	150534	University of Evansville	IN	1	15	15	829	1346	2175	
2003	151324	Indiana State University	IN	2	16	18	4132	4285	8417	
2003	152600	Valparaiso University	IN	2	13	16	1357	1491	2848	
2003	153269	Drake University	IA	2	20	14	1075	1453	2528	
2003	154095	University of Northern Iowa	IA	2	16	16	4422	6062	10484	
2003	157401	Murray State University	KY	2	15	14	2917	3984	6901	
2003	179566	Missouri State University	MO	2	16	15	5553	6896	12449	
2003	219709	Beloit University	TN	1	15	13	1068	1581	2649	
2004	143358	Bradley University	IL	1	15	15	2294	2702	4996	
2004	145600	University of Illinois at Chicago	IL	3	22	12	6345	7589	13934	
2004	145813	Illinois State University	IL	2	14	18	7062	9551	16613	
2004	149222	Southern Illinois University Carbondale	IL	2	15	14	8564	6468	15032	
2004	150534	University of Evansville	IN	1	16	14	868	1375	2243	
2004	151324	Indiana State University	IN	2	15	13	4029	4093	8122	

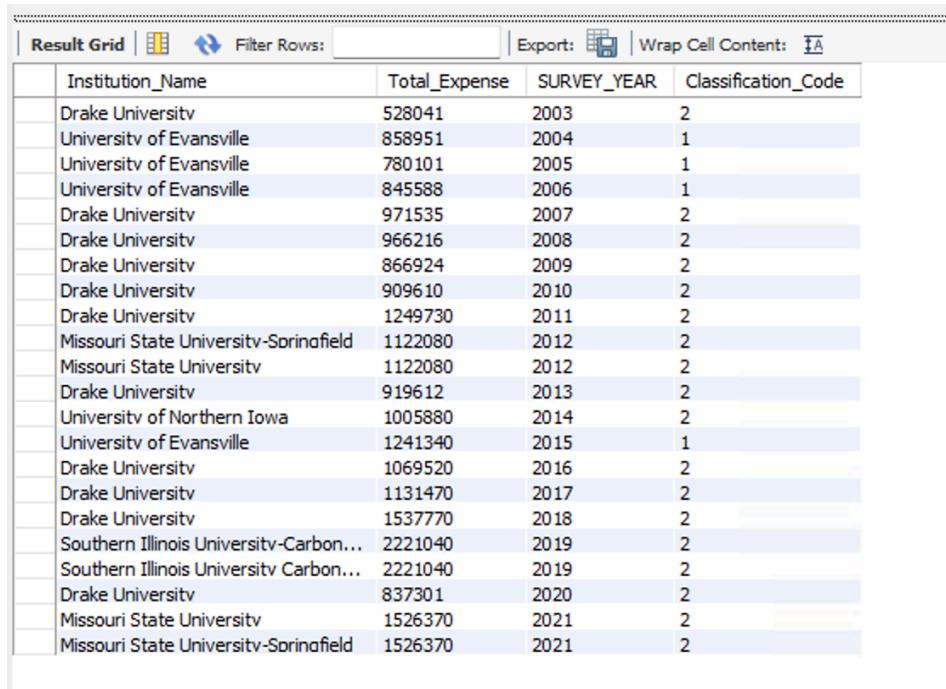
Deliverable 4 - Queries and Views

What school has the highest expenses per year?

This query shows which schools had the highest total expenses for each survey year. The results can be useful to see which schools are allocating the most funds in this conference to their basketball teams. It can be useful to compare different schools but also to compare one university's expense changes if they are in the results more than once.



```
deliverable 4* 
SELECT DISTINCT
    S.Institution_Name,
    E.Total_Expense,
    E.SURVEY_YEAR,
    C.Classification_Code
FROM
    EXPENSES E
JOIN
    SCHOOL_INFO_PER_YEAR S ON E.Unit_ID = S.Unit_ID
JOIN
    CLASSIFICATION C ON S.Classification_Code = C.Classification_Code
WHERE
    (E.Total_Expense, E.SURVEY_YEAR) IN (
        SELECT
            MAX(inner_E.Total_Expense),
            inner_E.SURVEY_YEAR
        FROM
            EXPENSES inner_E
        JOIN
            SCHOOL_INFO_PER_YEAR inner_S ON inner_E.Unit_ID = inner_S.Unit_ID
        GROUP BY
            inner_E.SURVEY_YEAR
    )
ORDER BY
    E.SURVEY_YEAR, C.Classification_Code;
```



Institution_Name	Total_Expense	SURVEY_YEAR	Classification_Code
Drake University	528041	2003	2
University of Evansville	858951	2004	1
University of Evansville	780101	2005	1
University of Evansville	845588	2006	1
Drake University	971535	2007	2
Drake University	966216	2008	2
Drake University	866924	2009	2
Drake University	909610	2010	2
Drake University	1249730	2011	2
Missouri State University-Sorinafield	1122080	2012	2
Missouri State University	1122080	2012	2
Drake University	919612	2013	2
University of Northern Iowa	1005880	2014	2
University of Evansville	1241340	2015	1
Drake University	1069520	2016	2
Drake University	1131470	2017	2
Drake University	1537770	2018	2
Southern Illinois University-Carbon...	2221040	2019	2
Southern Illinois University Carbon...	2221040	2019	2
Drake University	837301	2020	2
Missouri State University	1526370	2021	2
Missouri State University-Sorinafield	1526370	2021	2

What is each school's total expense to total revenue ratio in 2021?

An important financial figure is a business's expense ratio between revenue and expenses. It provides a quick glance at the business's performance which is why we wanted to understand each university's basketball program's ratios. To do so, we joined three tables and created an additional column that showed the ratio. We focused on the latest year as it allows us to compare between the universities' finances with the most updated metrics. To have a greater understanding of the universities' finances throughout the program's year since 2003, we created a view with every year available.

Query

```
SELECT EXPENSES.Total_Expense, REVENUE.Total_Revenue,
SCHOOL_INFO_PER_YEAR.Institution_Name, EXPENSES.Unit_ID,
(REVENUE.Total_Revenue/ EXPENSES.Total_Expense) as Ratio
FROM EXPENSES
JOIN SCHOOL_INFO_PER_YEAR
ON EXPENSES.Unit_ID = SCHOOL_INFO_PER_YEAR.Unit_ID
AND EXPENSES.Survey_Year = SCHOOL_INFO_PER_YEAR.Survey_Year
JOIN REVENUE
ON EXPENSES.Unit_ID = REVENUE.Unit_ID
AND EXPENSES.Survey_Year = REVENUE.Survey_Year
WHERE EXPENSES.Survey_Year = '2021';
```

Total_Expense	Total_Revenue	Institution_Name	Unit_ID	Ratio
929909	5194860	Bradley University	143358	5.586417595700224
615532	4352260	University of Illinois Chicago	145600	7.070732309611848
826465	5259090	Illinois State University	145813	6.363351140096677
1056940	3503270	Southern Illinois University-Carbondale	149222	3.3145357077304145
710617	4609980	University of Evansville	150534	6.487292029320998
1057950	4067400	Indiana State University	151324	3.844591541787261
854361	3994000	Valparaiso University	152600	4.674842367570617
1192160	5269000	Drake University	153269	4.419691418294798
1144760	4939590	University of Northern Iowa	154095	4.314967006127059
695885	5580610	Murray State University	157401	8.019448615791402
1526370	5199970	Missouri State University-Sorinfield	179566	3.406763248943406
646149	5883280	Beloit University	219709	9.105146026690438

View

```
CREATE VIEW ExpensesandRevenueRatio AS
SELECT EXPENSES.Total_Expense as TotalExpense, REVENUE.Total_Revenue as TotalRevenue,
SCHOOL_INFO_PER_YEAR.Institution_Name as University, EXPENSES.Unit_ID as ID, EXPENSES.Survey_Year
FROM EXPENSES
JOIN SCHOOL_INFO_PER_YEAR
ON EXPENSES.Unit_ID = SCHOOL_INFO_PER_YEAR.Unit_ID
AND EXPENSES.Survey_Year = SCHOOL_INFO_PER_YEAR.Survey_Year
JOIN REVENUE
ON EXPENSES.Unit_ID = REVENUE.Unit_ID
AND EXPENSES.Survey_Year = REVENUE.Survey_Year;

select *
from ExpensesandRevenueRatio
```

TotalExpense	TotalRevenue	University	ID	Year
401230	2587470	Bradley University	143358	2003
289184	1028990	University of Illinois at Chicago	145600	2003
305288	1237590	Illinois State University	145813	2003
367464	1147350	Southern Illinois University Carbondale	Southern Illinois University Carbondale	2003
516077	2228200	University of Evansville	145813	2003
404726	1496680	Indiana State University	151324	2003
87279	1961190	Valparaiso University	152600	2003
528041	910253	Drake University	153269	2003
361833	667677	University of Northern Iowa	154095	2003
389889	1925710	Murray State University	157401	2003
452698	3574940	Missouri State University	179566	2003
203671	553887	Beloit University	219709	2003
446340	2852770	Bradley University	143358	2004
442701	1073570	University of Illinois at Chicago	145600	2004
333363	1260930	Illinois State University	145813	2004

What is the highest number of undergrads in each classification of size for universities by survey year?

We are interested in learning the largest number of undergraduates at each size grouping of a university for each year. This can be an interesting tool to understand the ebb and flow of student populations through time as we look at the maximum number of students over time.

```
SELECT CLASSIFICATION.Classification_Code,
SCHOOL_INFO_PER_YEAR.Survey_Year, MAX(SCHOOL_INFO_PER_YEAR.Total_Undergraduates) as Max_Undergrad
FROM SCHOOL_INFO_PER_YEAR
JOIN CLASSIFICATION
ON SCHOOL_INFO_PER_YEAR.Classification_Code = CLASSIFICATION.Classification_Code
Group by CLASSIFICATION.Classification_Code, SCHOOL_INFO_PER_YEAR.Survey_Year
;
```

Classification_Code	Survey_Year	Max_Undergrads
1	2005	3287
1	2006	4028
1	2007	4920
1	2008	4782
1	2009	4801
1	2010	4807
1	2011	4678
1	2012	4888
1	2013	4618
1	2014	4370
1	2015	4219
1	2016	4278
1	2017	4510
1	2018	4461
1	2019	4506
1	2020	4450
1	2021	4214
2	2003	16811
2	2004	16613
2	2005	16635
2	2006	17842
2	2007	17703
2	2008	16926
2	2009	17253

How do the average Men's and Women's finances compare?

View

We created a View called Revenue_Expense_Summary. This View contains the averages across all schools and years for women's and men's revenue and expenses, both per participant and per team. We also added percentages to the View to represent the percentage of each men's and women's of the total values. We also added variables for profit by subtracting the expenses from the revenue. This View allowed us to join data from the REVENUE and EXPENSES tables and access them a lot easier when writing the queries.

```
#This is a view of all of the relevant mens/womens revenue/expense data so that you can easily pull from this.
CREATE VIEW Revenue_Expense_Summary AS
SELECT
    AVG(Women_Revenue) AS Women_Revenue_Avg,
    AVG(Men_Revenue) AS Men_Revenue_Avg,
    AVG(Total_Revenue) AS Total_Revenue_Avg,
    AVG(Women_Revenue) / AVG(Total_Revenue) * 100 AS Women_Revenue_Percentage,
    AVG(Men_Revenue) / AVG(Total_Revenue) * 100 AS Men_Revenue_Percentage,
    AVG(Women_Expense_Per_Participant) AS Women_Expense_Per_Participant_Avg,
    AVG(Men_Expense_Per_Participant) AS Men_Expense_Per_Participant_Avg,
    AVG(Men_Expense_Per_Team) AS Men_Expense_Per_Team_Avg,
    AVG(Women_Expense_Per_Team) AS Women_Expense_Per_Team_Avg,
    AVG(Total_Expense) AS Total_Expense_Avg,
    AVG(Women_Expense_Per_Team) / AVG(Total_Expense) * 100 AS Women_Expense_Percentage,
    AVG(Men_Expense_Per_Team) / AVG(Total_Expense) * 100 AS Men_Expense_Percentage,
    (AVG(Men_Revenue) - AVG(Men_Expense_Per_Team)) AS Men_Profit_Avg,
    (AVG(Women_Revenue) - AVG(Women_Expense_Per_Team)) AS Women_Profit_Avg,
    ((AVG(Men_Revenue) - AVG(Men_Expense_Per_Team)) /
    (AVG(Men_Revenue) - AVG(Men_Expense_Per_Team) + AVG(Women_Revenue) - AVG(Women_Expense_Per_Team))) * 100 AS Men_Profit_Percentage,
    ((AVG(Women_Revenue) - AVG(Women_Expense_Per_Team)) /
    (AVG(Men_Revenue) - AVG(Men_Expense_Per_Team) + AVG(Women_Revenue) - AVG(Women_Expense_Per_Team))) * 100 AS Women_Profit_Percentage
FROM
    REVENUE
JOIN
    EXPENSES ON REVENUE.Unit_ID = EXPENSES.Unit_ID AND REVENUE.Survey_Year = EXPENSES.Survey_Year;
```

Men's vs Women's Expenses

This query displays the averages for all of the columns in our EXPENSES table. The percentage of women's vs men's expenses is also shown. This demonstrated that out of the total expenses, 65.6% of those were from the men's team.

```
#compare both mens and womens expenses per team/individually to the totals
SELECT
    Women_Expense_Per_Participant_Avg,
    Men_Expense_Per_Participant_Avg,
    Men_Expense_Per_Team_Avg,
    Women_Expense_Per_Team_Avg,
    Total_Expense_Avg,
    Women_Expense_Percentage,
    Men_Expense_Percentage
FROM
    Revenue_Expense_Summary;
```

Women_Expense_Per_Participant_Avg	Men_Expense_Per_Participant_Avg	Men_Expense_Per_Team_Avg	Women_Expense_Per_Team_Avg	Total_Expense_Avg	Women_Expense_Percentage	Men_Expense_Percentage
14256.872807017544	28646.72807017544	431814.5307017544	226293.2850877193	658107.8157894737	34.38544257619176	65.6145574238

Men's vs Women's Revenue

This query displays the averages for all of the columns in our REVENUE table. The percentage of women's vs men's revenue is also shown. This demonstrated that out of the total revenue, 66% was from the men's team.

```
#Average Women's Revenue and average mens revenue compared to the total revenue
SELECT
    Women_Revenue_Avg,
    Men_Revenue_Avg,
    Total_Revenue_Avg,
    Women_Revenue_Percentage,
    Men_Revenue_Percentage
FROM
    Revenue_Expense_Summary;
```

Men's vs Women's Profits

This query displays the average profits. We calculated the profits by subtracting the expenses from the revenue. The percentage of women's vs men's revenue is also shown. This demonstrated that on average out of the total profits, 66% was from the men's team.

```
#Shows Average profits for mens vs womens and the percentages of each of the total
SELECT
    Men_Profit_Avg,
    Women_Profit_Avg,
    Men_Profit_Percentage,
    Women_Profit_Percentage
FROM
    Revenue_Expense_Summary;
```

Men_Profit_Avg	Women_Profit_Avg	Men_Profit_Percentage	Women_Profit_Percentage
1713748.9342105265	877093.495614035	66.14639757642739	33.853602423572596

Summary

The average percentages of revenue, expenses, and profit for men's and women's are the same. This is good because one group is not overspending and not bringing in enough revenue to warrant the spending. However, since women's expenses are so low, this makes us wonder if the revenue would match the men's if the same amount of expenses were put in. If men's and women's expenses were equal, would the revenue be equal, or would the nature of men's sports popularity always ensure that the men's teams would be more profitable?

How did COVID affect revenue (years 2020-2021)?

This question addresses the financial impacts of COVID and how it affected each institution throughout the years 2020-2021. We decided to solely focus on the revenue aspect of the financial impact COVID had on both the men's and the women's side, along with including the total revenue.

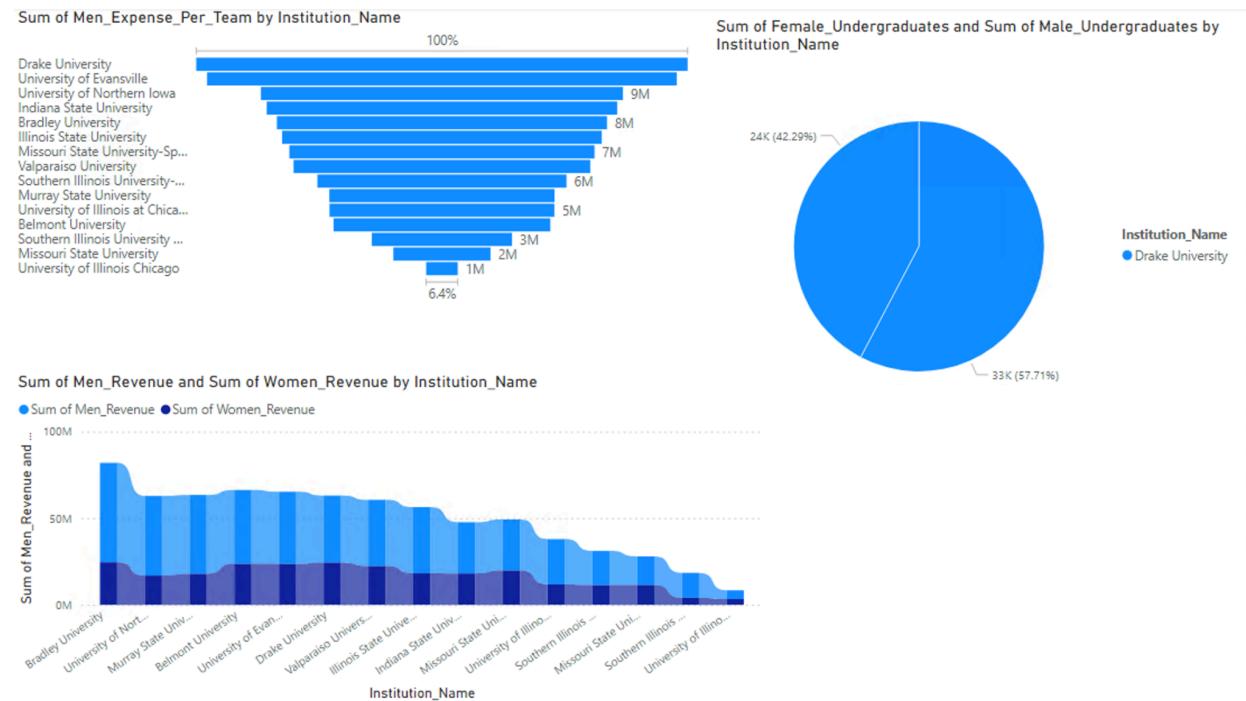
```
SELECT SCHOOL_INFO_PER_YEAR.Survey_Year, REVENUE.Women_Revenue, REVENUE.Men_Revenue, REVENUE.Total_Revenue
FROM SCHOOL_INFO_PER_YEAR JOIN REVENUE
WHERE SCHOOL_INFO_PER_YEAR.Unit_ID = REVENUE.Unit_ID AND
(SCHOOL_INFO_PER_YEAR.Survey_Year = '2020' OR SCHOOL_INFO_PER_YEAR.Survey_Year = '2021');
```

Survey_Year	Women_Revenue	Men_Revenue	Total_Revenue
2020	709022	1878450	2587470
2021	709022	1878450	2587470
2020	24073	1004910	1028990
2021	24073	1004910	1028990
2020	134149	1103440	1237590
2021	134149	1103440	1237590
2020	136976	1010370	1147350
2021	136976	1010370	1147350
2020	880419	1347780	2228200
2021	880419	1347780	2228200
2020	494915	1001760	1496680
2021	494915	1001760	1496680
2020	626897	1334290	1961190
2021	626897	1334290	1961190

The information provided in our output does not mean much to us unless we can compare this data against other corresponding years; hence, why we created visualizations to demonstrate the differences of revenue during COVID vs. previous years (since our data only stretches from 2003-2021, we cannot see how revenue has evolved since the peak of COVID). See 'Deliverable 5' for more information (specifically 'Visual 3').

Deliverable 5

Visual 1

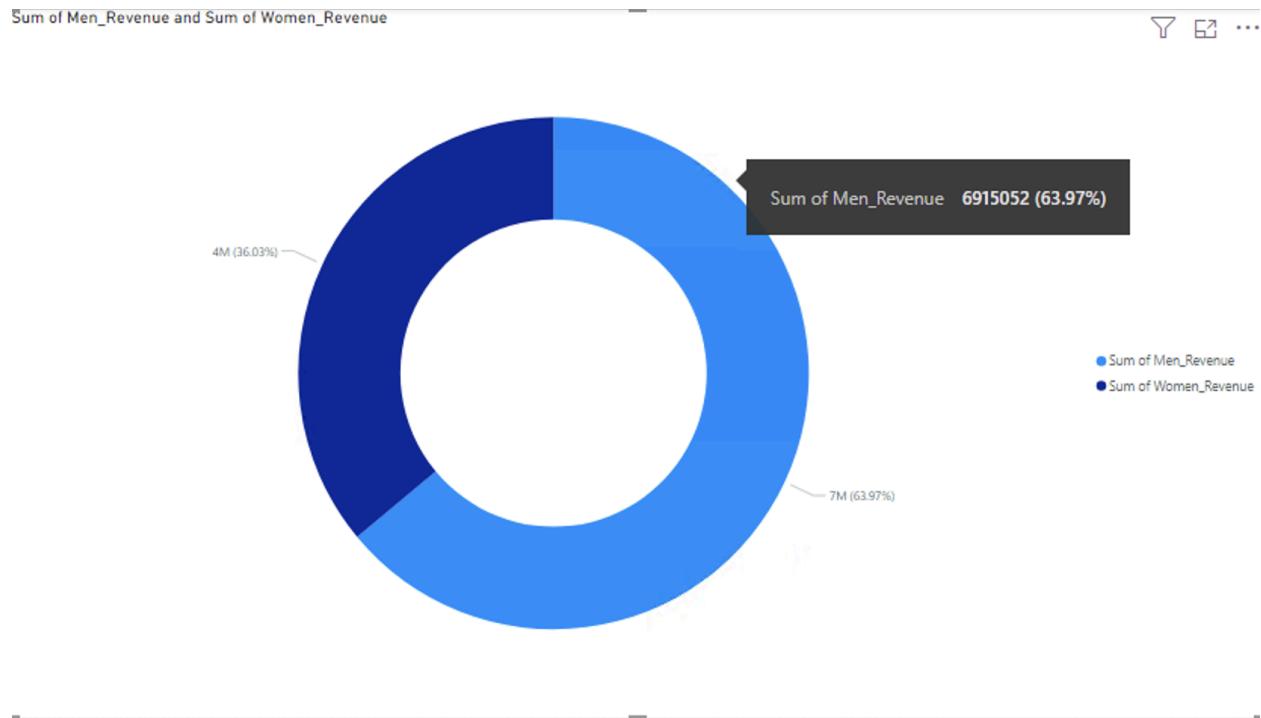


Visual 1 includes three different charts created in PowerBI to demonstrate the sum of men's expenses per team by institution name in a funnel chart (top left hand corner), the sum of female and male undergraduates by institution name (filtered to only include Drake University information in the top right hand corner), and the sum of male and female revenue by institution name (bottom left hand corner).

Interesting things to note include the fact that Drake University—across years 2003-2021—held the highest male expense per team in comparison to the rest of the MVC teams, nearing \$12 million. Additionally, across the same timeline, Drake University had nearly a 60/40 ratio of total female undergraduates to male undergraduates. This visual is included simply as additional information that is intriguing to see, especially when we think about the female enrollment rates over time at varying universities and how these numbers continue to increase.

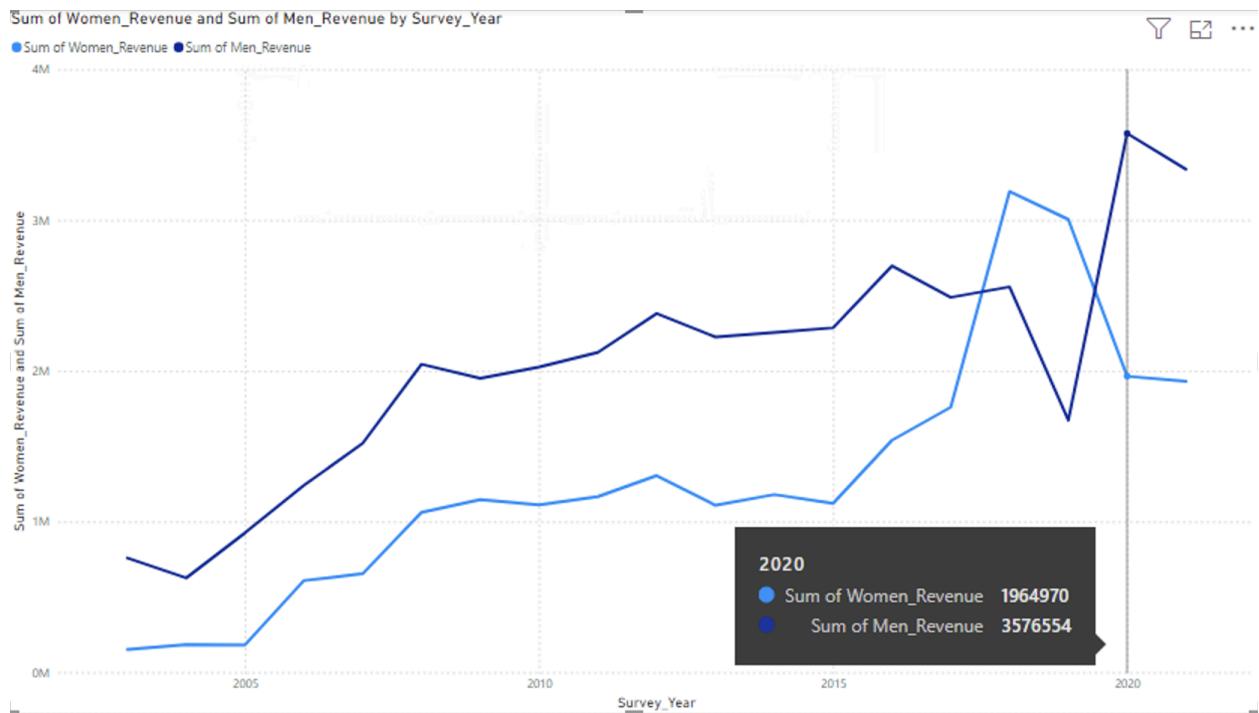
Finally, the stacked bar chart displays the men's revenue vs. the women's revenue by institution name and visually demonstrates the disparity between the two and how they make up the cumulative amount of revenue for each university. Additionally, it shows the difference in revenue accumulation for each institution (note that Drake is within the upper half of MVC teams, but remains close to the middle).

Visual 2



Visual 2 represents revenue in a different form—a donut chart—for Drake University specifically. Additionally, it is filtered to only show the men’s and women’s revenue from 2020 and 2021, information pertaining to the peak of COVID. Notice that men’s revenue accounts for nearly 64% of the total revenue produced from the men’s and women’s basketball teams for these two years. Note that the information included throughout the document pertains solely to the MVC men’s and women’s *basketball* teams; it does not include other sports.

Visual 3



Visual 3 displays men's and women's revenue for Drake University. We included information from all of our survey years—2003-2021—to illustrate the change over time in the accumulation of revenue from the basketball teams. The light blue line represents the sum of women's revenue; this is important to point out because between 2017-2019 the women's basketball team generated more revenue in comparison to the men's basketball team. This is not surprising because the Drake Women's Basketball team went undefeated in conference and made it to the NCAA tournament in the 2017-2018 and 2018-2019 seasons.

Interestingly enough, men's revenue in 2020 was the highest it had ever been. However, as we can see from the line chart, the revenue streams for both the men's and the women's teams steadily decrease as we head into the future of 2021. This is most likely due to the shortening of seasons due to COVID, the restricted amount of fans allowed to attend games, and the early stages of live streaming games.