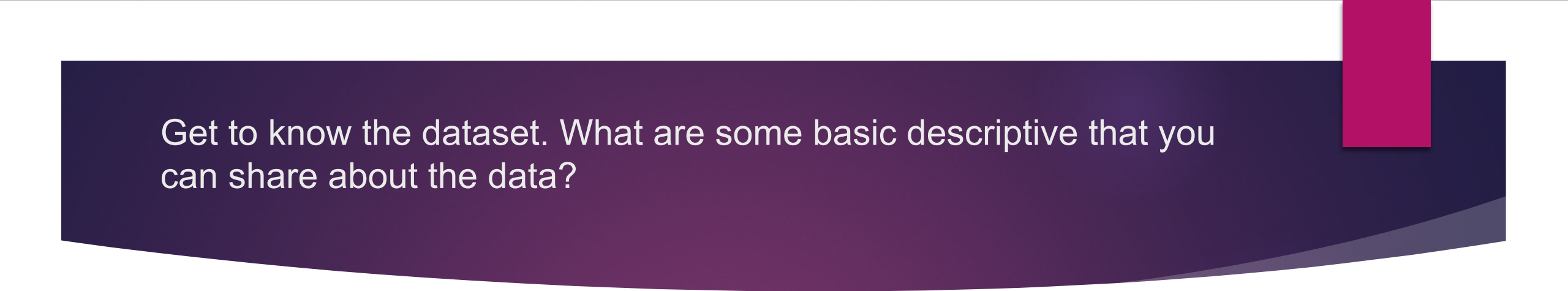


Homework 1

INFO I-421

GRACE DOE

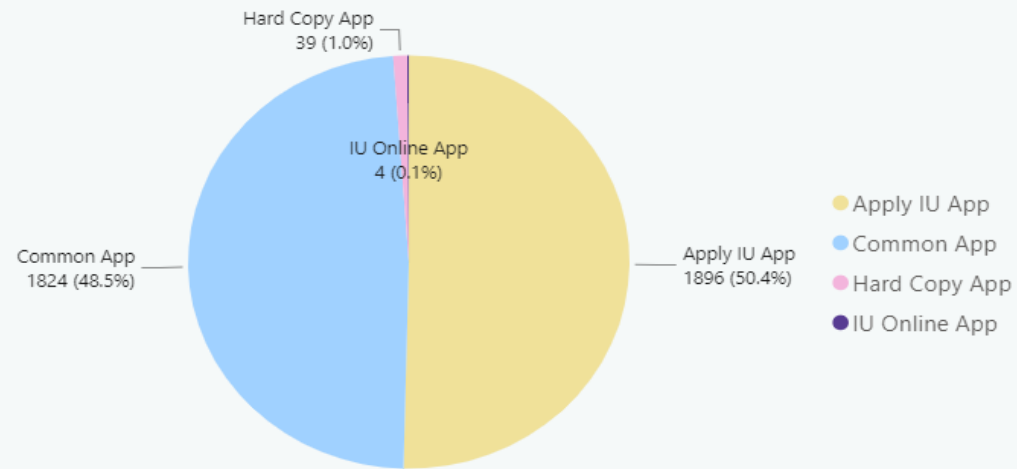


Get to know the dataset. What are some basic descriptive that you can share about the data?

- ▶ Dataset Size: 3763 rows and 13 columns.
- ▶ Data Quality:
 - Duplicates: 76 duplicate values found.
 - Missing Values: Some columns have missing data.
- ▶ Data Types:
 - Categorical Columns: 8 columns.
 - Numerical Columns: 5 columns.

Create a pie chart for Application Method Code. This should include labels or a legend, etc. so one could interpret the data from this visualization.

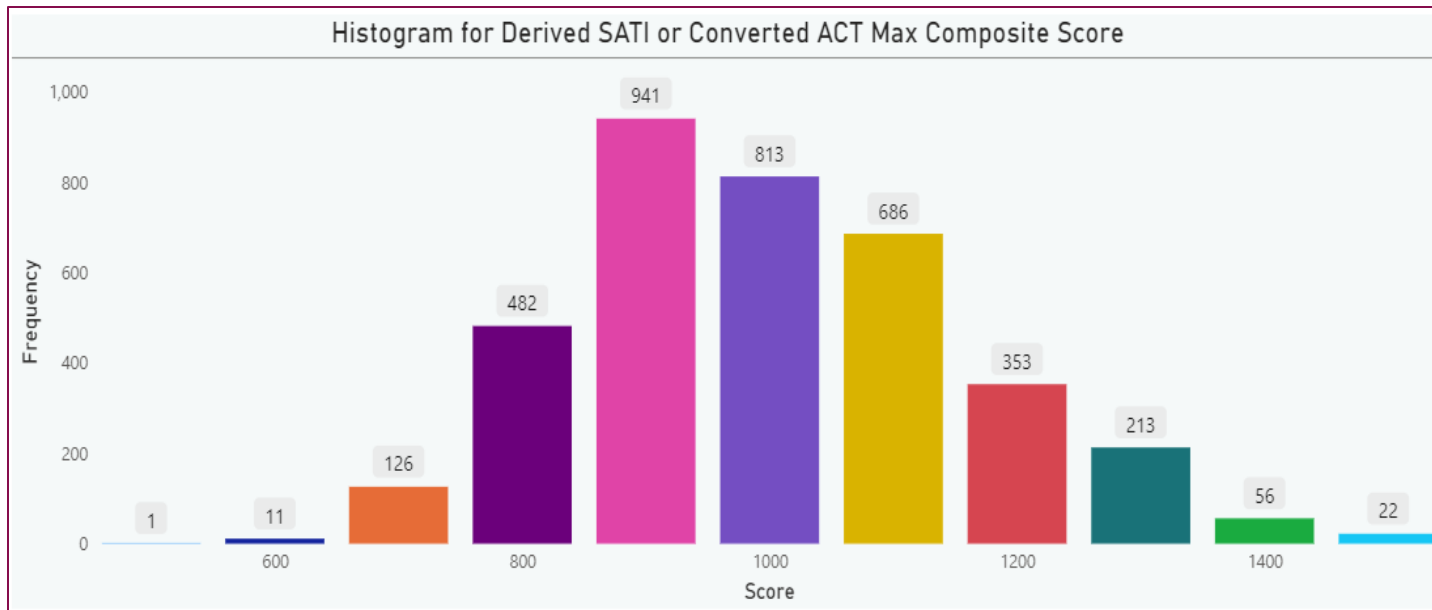
Pie chart for Application Method Code



Value Counts of Application Method Code

<i>Application Method Code</i>	<i>Values Count</i>	<i>Percentage Count</i>
Apply IU App	1896	50.4%
Common App	1824	48.5%
Hard Copy App	39	1.0%
IU Online App	4	0.1%
Total	3763	100.0%

Create a histogram for Derived SATI or Converted ACT Max Composite Score variable. Apply bin values in increments of 100. Label appropriately.



Histogram for Derived SATI or Converted ACT Max Composite Score

<i>Bins</i>	<i>Frequency</i>
500	1
600	11
700	126
800	482
900	941
1000	813
1100	686
1200	353
1300	213
1400	56
1500	22

Using Pivot Tables, answer the following questions:

- ▶ How many students in Indiana are also first generation students?

- 1020 students in Indiana are also first generation students.

State	First Generation Student
Indiana	1020

- ▶ What percentage of African American/Black students are male versus female? (round to the nearest whole number – no decimals).

- 3% are male whereas 6% are female.

Ethnicity	% of Gender
Black/African American	
Female	6%
Male	3%

Using Pivot Tables, answer the following questions:

- ▶ What is the average class size among those who have a CORE 40 Technical Diploma? (round to the nearest whole number – no decimals)
 - Average class size among those who have a CORE 40 Technical Diploma is 465.

<i>Diploma Type</i>	<i>Average High School Class Size</i>
CORE 40 Technical Diploma	465

Put together a short presentation that highlights what you are seeing between those who came in via the Common App or Apply IU app, specifically think about :

- ▶ Are there geographic differences or similarities between those who enroll via the Common App versus the Apply IU app?
 - There is almost an equal number of students who enroll via the Common the Apply IU app.
 - Indiana state has a significantly larger number of students compared to other states.

State	Apply IU App	Common App	Total
Alabama	1	1	2
Arizona		1	1
California	1	2	3
Colorado		1	1
Florida		1	1
Georgia		2	2
Hawaii	1		1
Idaho		1	1
Illinois	30	73	103
Indiana	1814	1663	3477
Iowa		1	1
Kansas	2	2	4
Kentucky	2		2
Maryland		1	1
Michigan	3	12	15
Minnesota	1	2	3
Mississippi	1		1
Missouri	5	5	10
New Jersey		1	1
New York	1	2	3
North Carolina		1	1
Ohio	11	19	30
Ontario	1		1
Pennsylvania		3	3
Tennessee		1	1
Texas		1	1
Vermont		1	1
Virginia		2	2
Wisconsin	5	2	7
Total	1879	1801	3680

Put together a short presentation that highlights what you are seeing between those who came in via the Common App or Apply IU app, specifically think about :

► Any differences/similarities/relationship between SAT scores and GPA?

- In the realm of GPA and SAT scores, similarities between SAT and GPA are evident.
- Particularly, the percentage of applicants using Common App and IU applications shows remarkable similarity.

GPA & SAT score Difference/Similarities vs Admission Mode

<i>Admission Mode</i>	<i>% Count of GPA score</i>	<i>% Count of SAT Score</i>
Apply IU App	51.1%	50.7%
Common App	48.9%	49.3%
Total	100.0%	100.0%

the

Put together a short presentation that highlights what you are seeing between those who came in via the Common App or Apply IU app, specifically think about :

- ▶ Are there other ways to group or segment the data that would make it more meaningful? Other data points you wish you had available?
 - I observed a significant gender disparity in enrollment: 2122 female students compared to 1558 males.

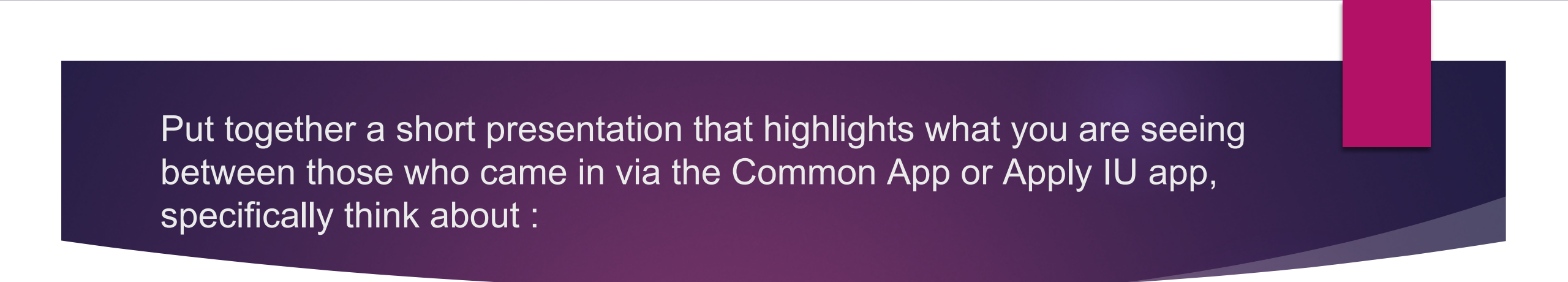
Gender Ratio by Admission Mode		
<i>Admission Mode</i>	<i>Female</i>	<i>Male</i>
Apply IU App	1162	717
Common App	960	841
Total	2122	1558

Put together a short presentation that highlights what you are seeing between those who came in via the Common App or Apply IU app, specifically think about :

► Are there geographic differences/similarities between those who enroll via the Common App versus the Apply IU app?

- Both admission modes have a similar number of students enrolled.
- There is an almost equal ratio between both admission modes concerning ethnicity.
- Whites are the most enrolled group.
- Native Hawaiians and American Indians are the least enrolled groups.

<i>Ethnicity</i>	<i>Apply IU App</i>	<i>Common App</i>	<i>Total</i>
American Indian/Alaska Native		2	2
Asian	80	113	193
Black/African American	183	152	335
Hispanic/Latino	283	237	520
Native Hawaiian/Pacific Island		1	1
NR-Alien	25	10	35
Two or More Races	121	89	210
White	1185	1192	2377
Total	1877	1796	3673



Put together a short presentation that highlights what you are seeing between those who came in via the Common App or Apply IU app, specifically think about :

- ▶ Explain your recommendations and reasoning.
 - In many states, admissions are very low. There is a need to increase awareness about the admission process and methods.
 - According to the data, females enroll in larger numbers through admission modes compared to men. It is essential to address this discrepancy and take necessary actions.
 - In the future, balancing the enrollment across different admission methods should also be done, as these two admission methods currently have almost equal numbers of students enrolled..

Write a paragraph or two to summarize your findings. Address and think about the following as you are putting your summary together.

► What do you see in the data? What relationships, if any, do you see?

- These home countries have the highest enrolled students, so we must focus on them.
- There is a significant lack of admissions from non-white ethnicities.

Home Country	Apply IU App	Common App	Total
Marion	515	442	957
Hamilton	153	189	342
Hendricks	194	145	339
Johnson	151	84	235
Lake	94	101	195
Hancock	54	60	114
Elkhart	51	49	100

Ethnicity	Apply IU App	Common App	Total
White	1185	1192	2377
Hispanic/Latino	283	237	520
Black/African American	183	152	335
Two or More Races	121	89	210
Asian	80	113	193
NR-Alien	25	10	35
American Indian/Alaska Native		2	2
Native Hawaiian/Pacific Island		1	1

Write a paragraph or two to summarize your findings. Address and think about the following as you are putting your summary together.

- ▶ What limitations do you have in the dataset? What other questions would you have that you would pose back to the client as a result of this analysis?

- **LIMITATIONS:**

- Missing and duplicate values may impact analysis completeness.
- A balanced representation across categories is crucial for unbiased results.
- Ensuring accurate and transparent data collection is essential for robust analysis.

- **QUESTIONS:**

- Can you elaborate on the data collection process to address reliability concerns?
- How do you plan to address uneven category distribution for a more accurate analysis?

Write a paragraph or two to summarize your findings. Address and think about the following as you are putting your summary together.

- ▶ Ultimately, what would be your final takeaways and recommendations to the client based on this preliminary analysis?

- **FINAL TAKEAWAYS AND RECOMMENDATION:**

- Address missing and duplicate values for a more robust dataset.
- Develop strategies for even admissions distribution for accuracy.
- Evaluate and exclude irrelevant fields for focused analysis.
- Explore additional fields to enrich analysis depth.
- Establish clear channels for client expectations.
- Encourage ongoing refinement for data reliability.