Final Group Project
Business Deck

Group 4. Members:

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Executive Summary

	Objective	Hypothesis	Outcomes	Recommendations/ Conclusions
Part A	To explore the relationship between share size and season	**Null Hypothesis:** Peterbu Farm should sell more small size product during the summer-fall in North Region **Alternative Hypothesis**: Peterbu Farm should not sell more small size product during the summer-fall in North Region	We **ACCEPTED** the Null Hypothesis with enough evidence	When we look at the chart of Shares Sold in North Region, we can realize most sales are from small size during the summer-fall.
Part B – Redwood	To explore the relationship between payment method and pledge amount	**Null Hypothesis:** Different payment method has an impact on the pledge amount **Alternative Hypothesis**: Different payment method has no impact on the pledge amount	We **ACCEPTED** the Null Hypothesis with enough evidence	Focus more on promoting current donor in using Payment Method E, which can decrease the cost of maintaining other payment methods.
Part B - Video	To explore the relationship between contract amount and city	**Null Hypothesis:** San Francisco has the highest total contract amount **Alternative Hypothesis**: San Francisco does not have the highest total contract amount	We **ACCEPTED** the Null Hypothesis with enough evidence	1. Provide refer programme to attract more clients in San Francisco 2. Provide promotion to increase the number of client in another city
Part C	To explore and identify which service spend the highest number of hours	**Null Hypothesis:** The service with the highest number of hours is the hardware upgrades **Alternative Hypothesis:** The service with the highest number of hours is not the hardware upgrades	We **ACCEPTED** the Null Hypothesis with enough evidence	The backup service dataset showed that service the highest number of hours is the hardware upgrades
Part D	To explore and identify which city has the highest value of paid services.	**Null Hypothesis:** The city with the highest value of paid services in NC is Georgetown **Alternative Hypothesis:** The city with the highest value of paid services in NC is not Georgetown	We **REJECTED** the null hypothesis with enough data to support	The city in NC that has demonstrated the highest value of paid services in NC is Granger with $10,850.50. The Georgetown city is the third highest one, with a result of $8,160.50

Part A-Problem Definition and Hypothesis

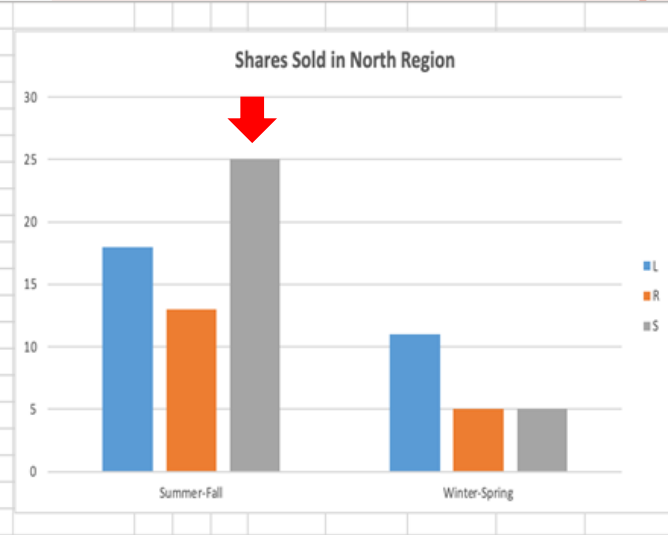| Objective	To explore the relationship between share size and season
Hypothesis	Null Hypothesis: Peterbu Farm should sell more small size product during the summer-fall in North Region Alternative Hypothesis: Peterbu Farm should not sell more small size product during the summer-fall in North Region
Outcome	We **ACCEPTED** the Null Hypothesis with enough evidence
Recommendations/ Conclusions	When we look at the chart of Shares Sold in North Region, we can realize most sales are from small size during the summer-fall.

Part A: Data Evidence

The small size product of vegetable and fruit & vegetable are most in the summer-fall.

From this bar chart, the small size sell the best during the summer-fall

Part A: Conclusion

Peterbu Farm should care about the season to sell their products. In the summer-fall, the small size is more popular. Also, during the summer-fall, vegetables and fruits are the best-selling products.

Thus, it is important to decide which size of product should produce more, in case to gain more unnecessary size of products.

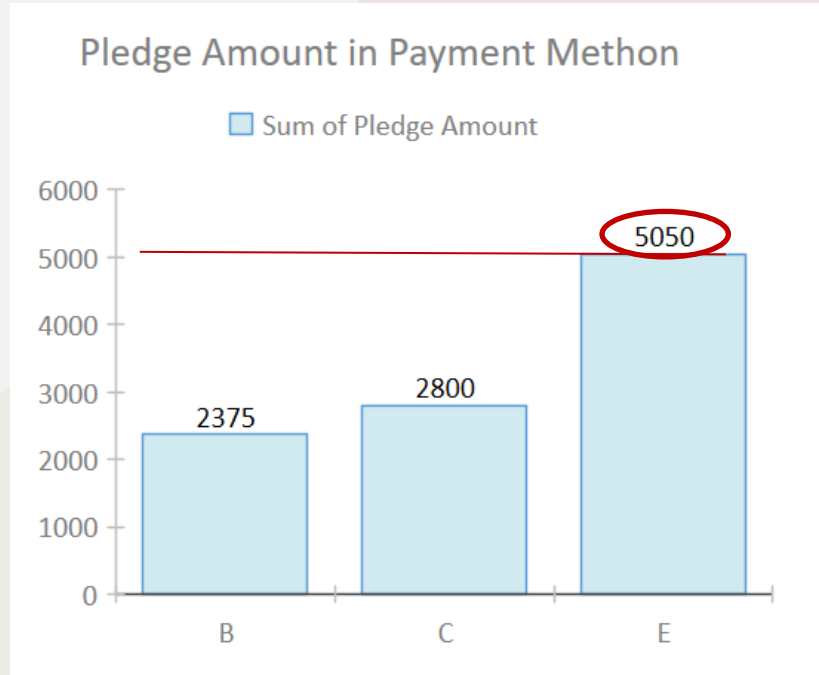# Part B-Problem Definition and Hypothesis (Redwood Dataset)

The Redwood zoo relies heavily on donations to fund both permanent exhibits and temporary displays, especially those involving exotic animals. The zoo has a database to track information about donors, their pledges, and the status of funds.

Objective	To explore the relationship between payment method and pledge amount
Hypothesis	Null Hypothesis: Different payment method has an impact on the pledge amount Alternative Hypothesis: Different payment method has no impact on the pledge amount
Outcome	We **ACCEPTED** the Null Hypothesis with enough evidence
Recommendations/ Conclusions	Focus more on promoting current donor in using Payment Method E, which can decrease the cost of maintaining other payment methods.

Part B: Data Evidence (Redwood Dataset)

- Nearly half of the pledge amount is received by Payment Method E (49.39%)

Payment Method	PledgeTotalO
B	$2,375.00
C	$2,800.00
E	$5,050.00

Pledge Amount in Payment Methon

☐ Sum of Pledge Amount

Method	Value
B	2375
C	2800
E	5050

Part B-Problem Definition and Hypothesis (Video Dataset)

The company specializes in digital photography and offers customers the option of storing edited videos on DVD. There is an Access database named Videos to store data about clients.
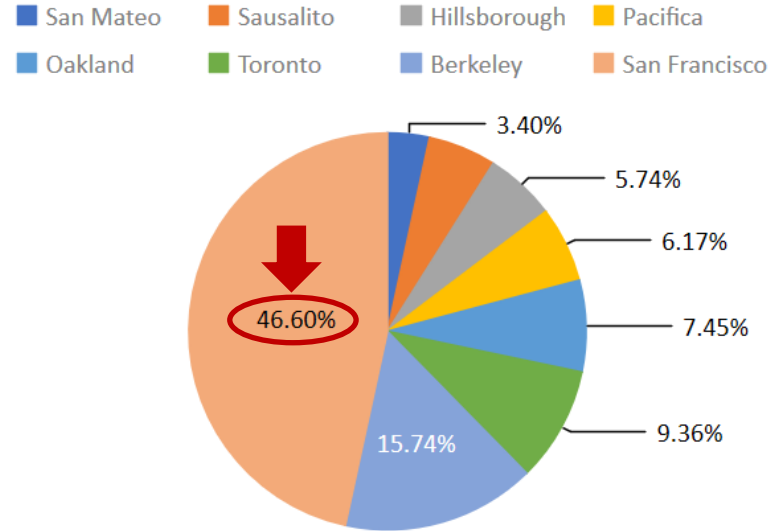
Objective	To explore the relationship between contract amount and city
Hypothesis	Null Hypothesis: San Francisco has the highest total contract amount Alternative Hypothesis: San Francisco does not have the highest total contract amount
Outcome	We **ACCEPTED** the Null Hypothesis with enough evidence
Recommendations/ Conclusions	Nearly half of the contract amount from San Francisco. 1. Provide refer programme to attract more clients in San Francisco 2. Provide promotion to increase the number of client in another city

Part B: Data Evidence (Video Dataset)

- Nearly half of the contract amount from San Francisco.

City	ContractAmtOfSum	%ofContractAmt
Berkeley	$1,850.00	15.74%
Hillsborough	$675.00	5.74%
Oakland	$875.00	7.45%
Pacifica	$725.00	6.17%
San Francisco	$5,475.00	46.60%
San Mateo	$400.00	3.40%
Sausalito	$650.00	5.53%
Toronto	$1,100.00	9.36%

The % of Contract Amount in City

Part B: Conclusion & Recommendations
Redwood and Video Dataset

Redwood Dataset	Video Dataset
• Nearly half of the pledge amount is received by Payment Method E (49.39%) • Focus more on promoting current donors in using Payment Method E, which can decrease the cost of maintaining other payment methods.	• Nearly half of the contract amount from San Francisco. • There are 6 out of 8 cities have lower than 10% of contract amounts 1. Provide refer programme to attract more clients in San Francisco 2. Provide promotion to increase the number of client in another city

Part C-Problem Definition and Hypothesis

Objective	To explore and identify which service spend the highest number of hours
Hypothesis	Null Hypothesis: The service with the highest number of hours is the hardware upgrades Alternative Hypothesis: The service with the highest number of hours is not the hardware upgrades
Outcome	We **ACCEPTED** the Null Hypothesis with enough evidence
Recommendations/ Conclusions	The backup service dataset showed that service the highest number of hours is the hardware upgrades

Part C: Data Evidence

Service Code	Client Number	Service Description	Total Hours	Hours Spent	Hours Remaining
S01	BMS53	Data Destruction	4	2	2
S01	CDS29	Data Destruction	4	0	4
S02	BBF32	Disaster Recovery Review	8	4	4
S02	WEC05	Disaster Recovery Review	8	4	4
S03	BBF32	Hard Copy Backup	5	0	5
S03	BMS53	Hard Copy Backup	4	0	4
S03	CDS29	Hard Copy Backup	4	2	2
S03	SLA77	Hard Copy Backup	4	0	4
S04	HCH10	Hardware Upgrades	16	8	8
S04	WEC05	Hardware Upgrades	16	12	4
S05	KDS21	Server Migration	16	4	12
S06	HCH10	Software Updates	8	4	4
S07	BCC76	Web Hosting Backup	8	4	4
S07	SLA77	Web Hosting Backup	8	6	2
S07	WSC01	Web Hosting Backup	8	2	6

Based on the service requests and service sub-report, we can know the total hours for each services. After doing the calculations, the results prove that the service with the highest number of hours is the hardware. Thus, we have strong evidence to accept the null hypothesis.

Part C: Conclusion

According to the report, we know the company spent most time on hardware upgrade service, compared to other services. Thus, the company should come up a strategy or plan to provide a much more efficient way for customer to upgrade their hardware.

Besides the hardware upgrade service, the company also needs to focus on the service of web hosting backup.

In order to provide a better service experience for their clients, the company needs to create a plan for shortening the service time.
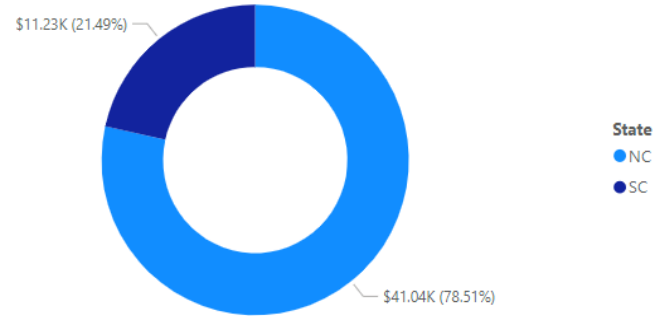
Part D-Problem Definition and Hypothesis

Objective	To explore and identify which city has the highest value of paid services in NC.
Hypothesis	Null Hypothesis: The city with the highest value of paid services in NC is Georgetown Alternative Hypothesis: The city with the highest value of paid services in NC is not Georgetown
Outcome	We **REJECTED** the null hypothesis with enough data to support
Recommendations/ Conclusions	The city in NC that has demonstrated the highest value of paid services in NC is Granger with $10,850.50. The Georgetown city is the third highest one, with a result of $8,160.50

Part D: Data Evidence

City	Total Amount	State
Granger	$10,850.50	NC
Buda	$9,410.65	NC
Georgetown	$8,160.50	NC
Walburg	$6,517.95	NC
Burles	$6,095.55	NC
Total	$41,035.15	

Overview - Total Amount by State

$11.23K (21.49%)
$41.04K (78.51%)
State: NC, SC

Total Amount by City and State
State ● NC

Total amount - (Cities from NC state only)
$6.10K (14.85%)
$10.85K (26.44%)
$6.52K (15.88%)
$9.41K (22.93%)
$8.16K (19.89%)
City: Granger, Buda, Georgetown, Walburg, Burles
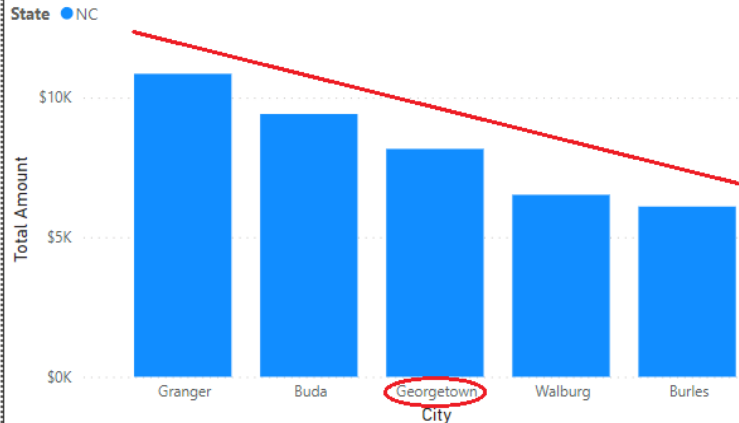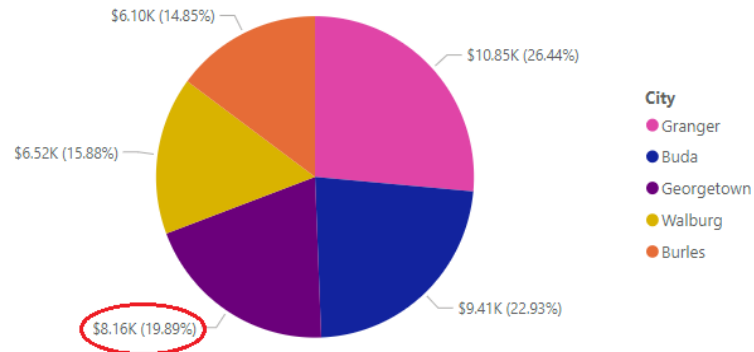
The report was developed using **Power BI** that brings the Total Amount by city in **NC**.

We can clearly see that **Georgetown** is ranked as the **third** city related to the Total of paid Services.

Part D: Conclusion

To sum up, the reports showed that the state of NC represents more than **78%** of the total value of services provided between the two states found in the database/reports (NC and SC). Therefore, the company must analyze whether it will take any steps to expand or adjust its business between the two states, cities or even start its operation in other states or cities in the US.

Recommendations: Part A, B, C, and D

Recommendation 1	Peterbu Farm should care about the season to sell their products. In the summer-fall, the small size is more popular. Also, during the summer-fall, vegetables and fruits are the best-selling products.
Recommendation 2	Redwood Dataset: Focus more on promoting current donor in using Payment Method E, which can decrease the cost of maintaining other payment methods. Video Dataset: 1. Provide refer programme to attract more clients in San Francisco 2. Provide promotion to increase the number of client in another city
Recommendation 3	Company spent most time on hardware upgrade service, compared to other services. In order to provide a better service experience for their clients, the company needs to create a plan for shortening the service time.
Recommendation 4	Comparing the entire distribution of services provided, the Technology Services company should analyze whether it will make any decision to expand or adjust its business between the two states, cities or even start its operation in other US states or cities.

Thank you!