



## AGENDA

- INTRODUCTION
- PROBLEM STATEMENT
- OBJECTIVES
- METHODOLOGY
- DESCRIPTIVE STATISTICS
- DATA VISUALIZATION
- RESULTS
- CONCLUSIONS & RECOMMENDATIONS

## Introduction

- What is H-1B visa?
- Possible ways
  - Marry a American citizen(Citizenship)
  - Lottery (Green Card)
  - Refugee (Green Card)
  - Work(visa)

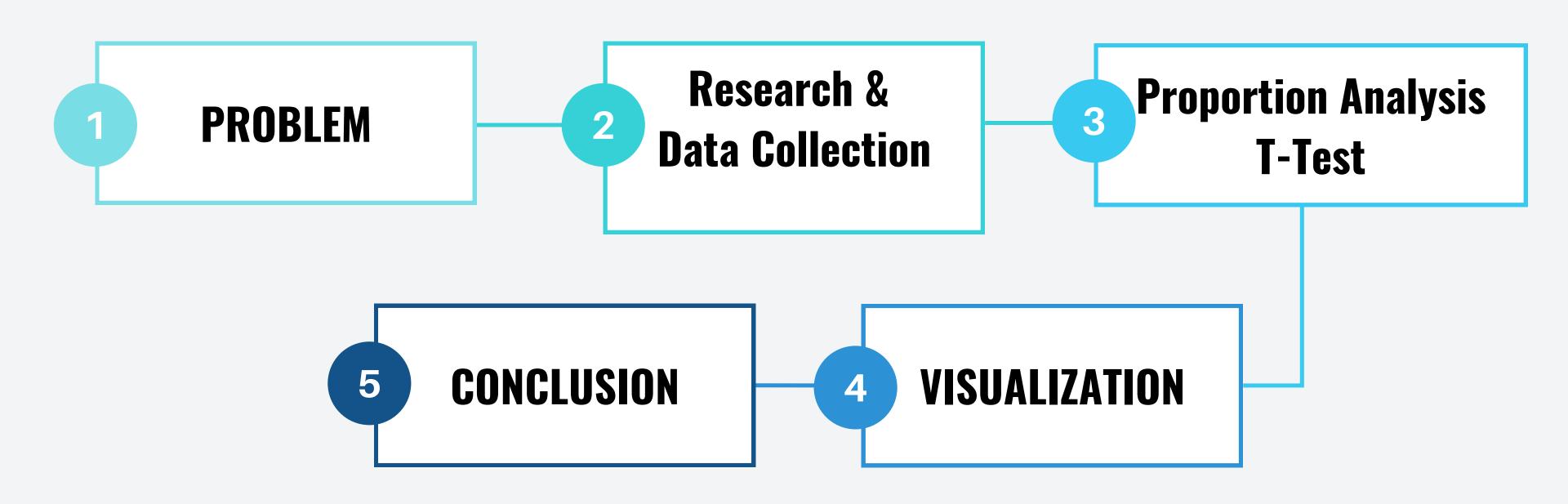
## Problem Statement

- Is it possible that non- stem major has a higher chance to receive H-1b visa compare to stem major?
- Visa is highly competitive
  - 1 million students came to the United States to study from more than 200 countries.

# Objective

- To test out the hypothesis that if Non-STEM majors could have a higher probability of receiving H-1B visa than STEM majors.
- To identify which industry that provide the highest probability of receiving the H-1B visa.
- Provide suggestions for incoming international student when they are picking their major.

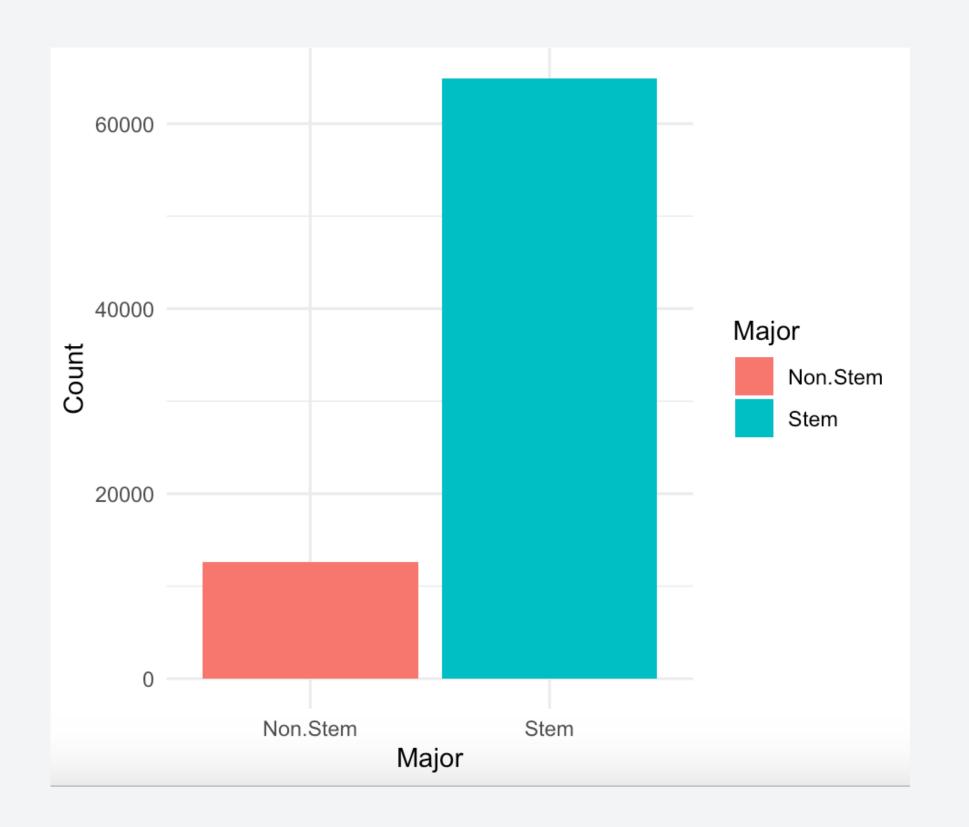
# Methodology



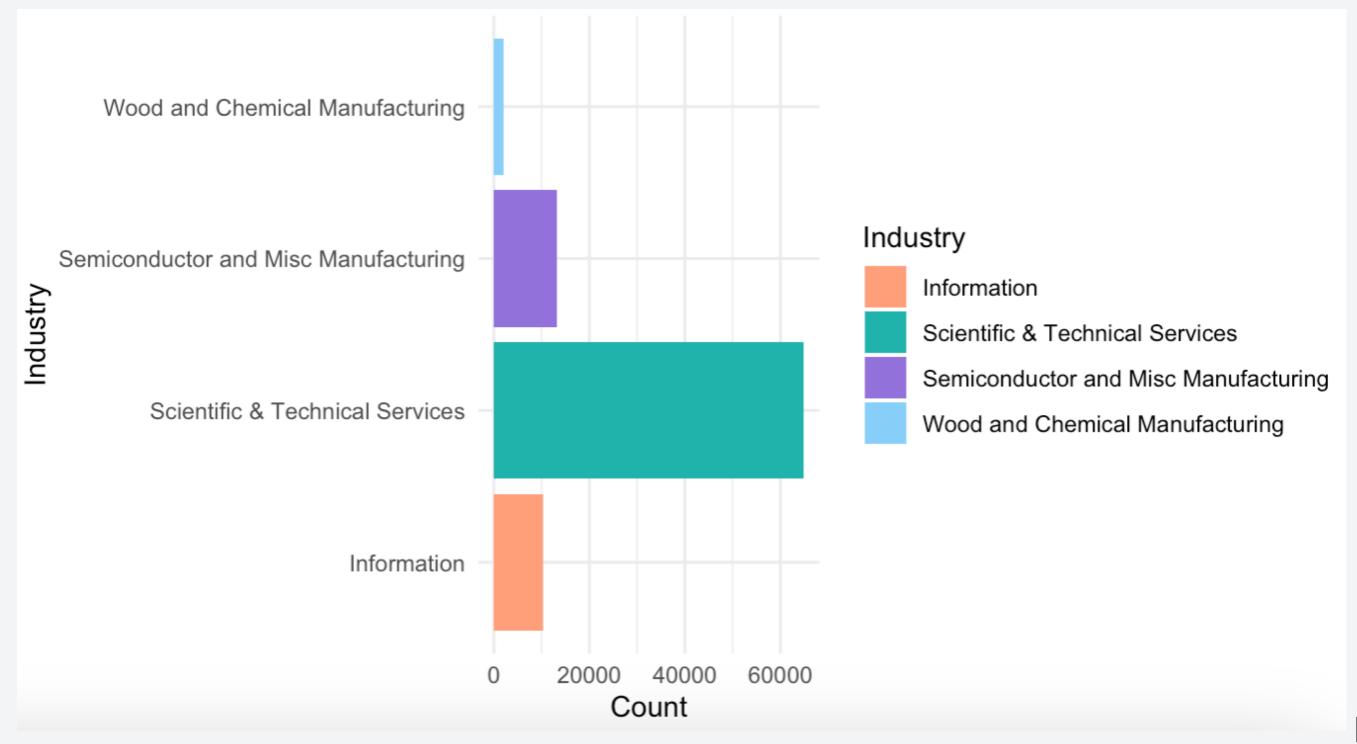
# Descriptive Statistics

```
> summary(data)
     Stem
                 Non.Stem
              Min. : 133.0
Min. : 1939
1st Qu.: 8226
               1st Qu.: 281.0
               Median : 578.5
Median :11782
               Mean : 2040.8
Mean :22607
               3rd Qu.: 1408.0
3rd Qu.:26163
               Max. :12581.0
Max.: 64927
NA's :16
```

# Data Visualization



# Data Visualization 2



# Data Analysis

```
Two Sample t-test

data: Count by Major

t = -3.4093, df = 22, p-value = 0.002515

alternative hypothesis: true difference in means between group Non.Stem and group Stem is n

ot equal to 0

95 percent confidence interval:

-33077.017 -8055.983

sample estimates:

mean in group Non.Stem mean in group Stem

2040.75 22607.25
```

Figure 4

## Results

- Stem major: 90429
- non stem major: 40815
- total: 131244
- Stem major : 90429/131244 = 69%
- non stem major: 40815/131244 = 31%
- Scientific & Technical Services: 64927
- Acceptance rate = 64927/90429 = 71.7%

# Conclusion & Recommendation

#### Conclusion

- Stem Major has a higher probability of receiving H1B visa
- It is possible to calculate the probability with total visa and total applicant

#### Recommendation

- Stem majors has a higher chance: CS& Engineering
- Choose the location of study/work wisely: CA, TX
- Choose larger corporate companies to maximize probabilities: Amazon

## Lessons Learned

#### **Data Collection**

Avoid bias in research, objectively collect data.

#### Data relation with location

- Acceptance rate data varies with location,
- Highest: California, Texas, New York
- Lowest: South Dakota, Alabama, Lousiana

#### Interesting insights

- More than half of H-1B visas is awarded to Indian nationals
- Business Analyst (2022) has a 99.85% H-1B approval rate!

# Challenges

#### **Data Visualization**

- Problem: Code error resulting errors in visualizing through bar chart
- Solution: Edit the code to a simplified version

#### **Data Categorization**

- Problem: Data was stored in charts rather in Excel file
- Solution: Manually categorize them

#### Time

- Problem: Scheduling time conflict
- Solution: Setting clear time frame and action plan through communication

#### Topic

- Problem: Topic Selection
- Solution: Re-identify objectives and collaborate

# THANK 400/