Stats 140SL LaTeX Assignment

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Contents

1 Introduction

In this document I will be showcasing my ability to use LaTeX in R while also telling you about my home state of *Arizona* and some other R code.

2 Growing Up

In this section I will talk about growing up in Arizona, specifically my family and my animals.

2.1 My Family

I was born in **Scottsdale** in **1997**. I have *1 older brother* who went to **Northern Arizona University**. He is now a member of the *US Air Force*. Here is a table with more information on my family.

Table 1: My family info

our_names	our_ages	our_sexes
Hayley	21	F
Chase	30	M
Ron	70	M
Suzette	60	F

2.2 My Animals

I owned a bunch of rescue animals growing up. Those animals included:

(i) **a Llama**

(ii) Horses

(iii) Donkeys

(iv) Pigs

(v) A Sheep

(vi) Dogs

(vii) Cats

These are the animals we currently own:

- Two dogs
- Two cats

3 About Arizona

Arizona's state flag is red, blue, and yellow. The state flower is the saguaro. They are both shown below.

4 Some R Code using TLI data (with a splash of Greek)

Let's look at a data set in R that shows the Math scores from Texas Assessment of Academic Skills.

```
##   grade sex disadvg ethnicty tlimth
## 1     6   M     YES HISPANIC     43
## 2     7   M      NO    BLACK     88
## 3     5   F     YES HISPANIC     34
## 4     3   M     YES HISPANIC     65
## 5     8   M     YES    WHITE     75
## 6     5   M      NO    BLACK     74
```

4.1 Some computations

Lets find the average score among women and men. For this I will be showing the R code I used to get these results.

```
womentli <- subset(tli, sex == "F")
mentli <- subset(tli, sex == "M")
paste0("Average score among women: ",mean(womentli$tlimth))
```

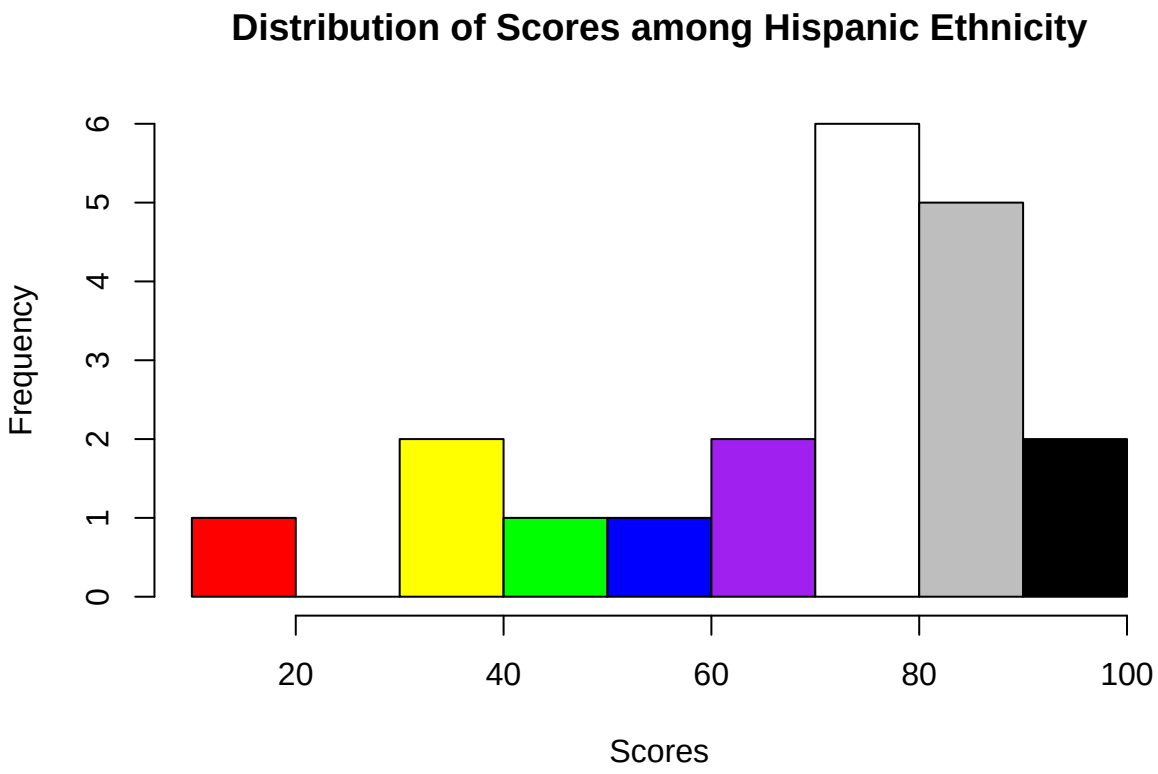
```
## [1] "Average score among women: 75.5490196078431"
```

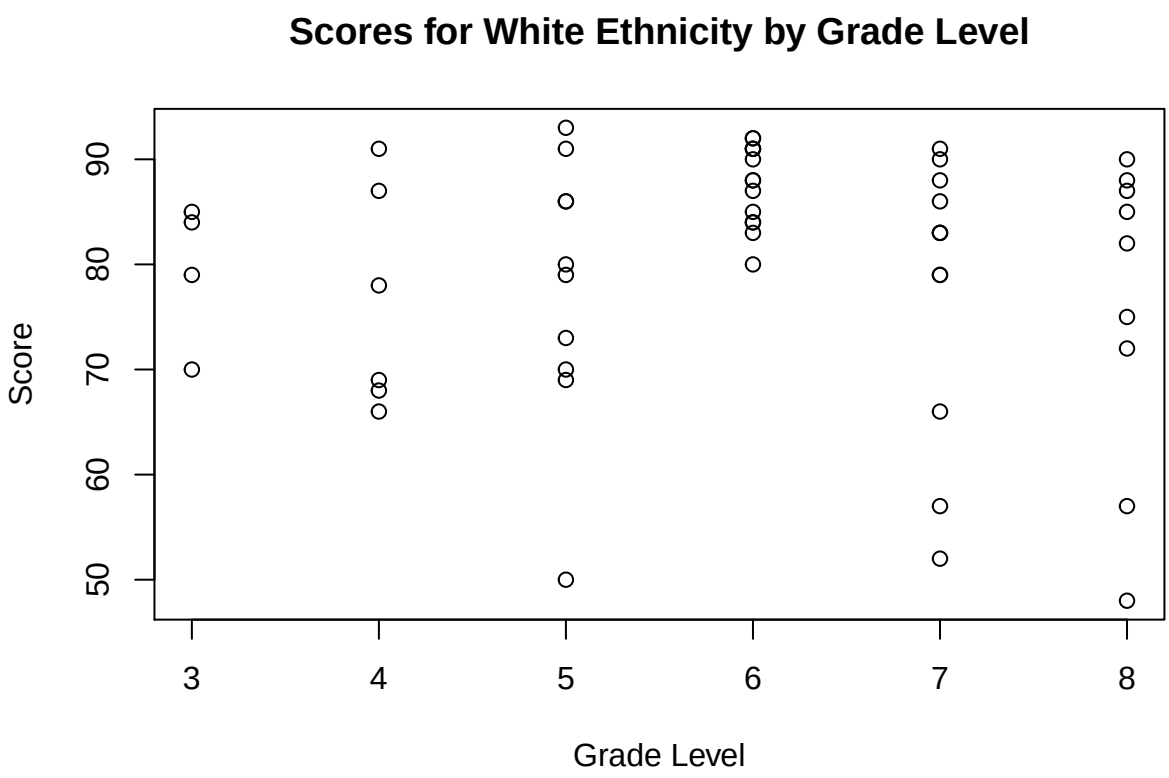
```
paste0("Average score among men: ",mean(mentli$tlimth))
```

```
## [1] "Average score among men: 77.2857142857143"
```

4.2 Some plots

We could also plot a couple different types of graphs to display the distribution of scores for both Hispanic and White ethnicities. For this section, I will not be showing my R code. The plots are shown below


Distribution of Scores among Hispanic Ethnicity
Frequency
0
1
2
3
4
5
6
20
40
60
80
100
Scores



4.3 A nice table

We can also observe the different means and standard deviations based on grade level.

Table 2: Math Score Means and Standard Deviation Based on Grade Level

Grade Level	Mean	SD
3	69.4	19.66
4	75.13	10.56
5	75.13	16.53
6	82.26	11.37
7	80.78	11.38
8	71.36	15.95

4.4 Math and Greek

Trigonometric functions can be expressed using identities that involve one another. For example

$$\sin(\theta) = \pm\sqrt{(1 - \cos^2\theta)}$$

However some are more complicated, such as

$$\sec(\theta) = \pm\frac{\csc(\theta)}{\sqrt{\csc^2(\theta) - 1}}$$

.

4.4.1 And a matrix

Finally, Ill be making a matrix with my favorite numbers along the diagonal.

$$\begin{matrix} 6 & 0 & 0 & 0 \\ 0 & 27 & 0 & 0 \\ 0 & 0 & 15 & 0 \\ 0 & 0 & 0 & 7 \end{matrix} \tag{1}$$