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Module 5 Exercise: Data Frames, Statistical Analysis, and Histograms

i. **The entire R code used when finding the minimum weight of an adult cat in (1)**

```
animal<-read.csv("AnimalData.csv")
adultCat<-subset(animal, animal$Animal.Type=="Cat" & animal$Age.Intake>1)
min(adultCat$Weight)
```

ii. **The answer obtained in (1)**

5

iii. **The entire R code used when finding the maximum weight of an adult cat in (2)**

```
max(adultCat$Weight)
```

iv. **The answer obtained in (2)**

13.5

v. **The entire R code used when finding the mean(average) weight of an adult cat in (3)**

```
mean(adultCat$Weight)
```

vi. **The answer obtained in (3)**

8.806122

vii. **The entire R code used when finding the standard deviation of weights of adult cats in (4)**

```
sd(adultCat$Weight)
```

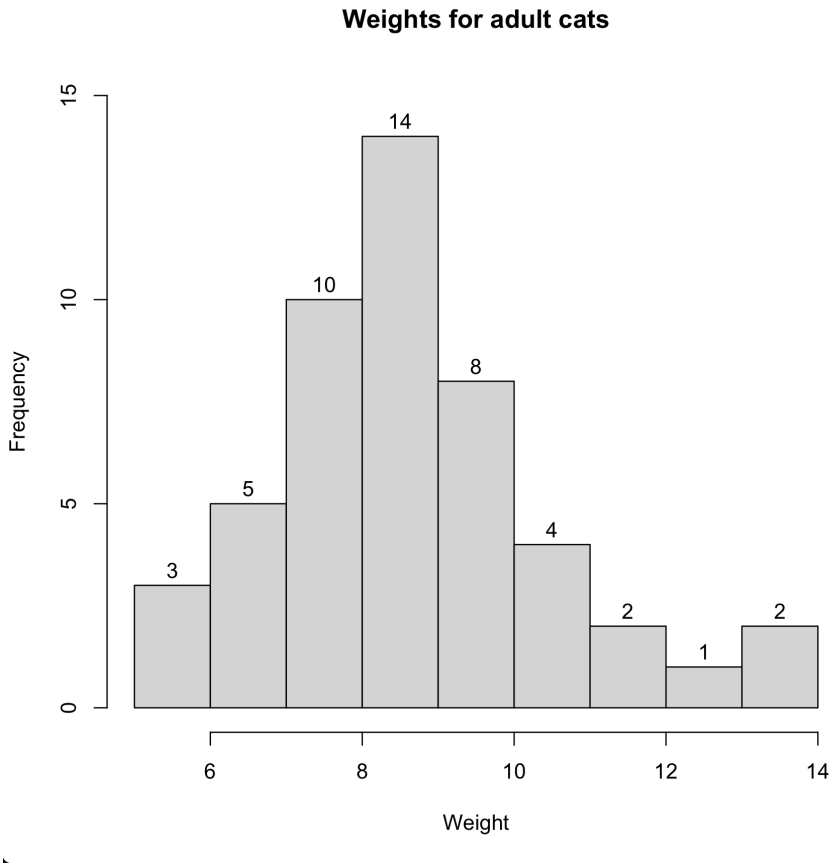
viii. **The answer obtained in (4)**

1.857884

ix. **The entire R code used when creating the histogram of adult cat weights in (5)**

```
cwh<-hist(adultCat$Weight, main="Weights for adult cats", xlab="Weight",
ylab="Frequency", plot=FALSE)
plot(cwh, ylim=c(0,max(cwh$counts)+1), main="Weights for adult cats", xlab="Weight",
ylab="Frequency")
text(cwh$mids, cwh$counts, labels=cwh$counts, adj=c(0.5,-0.5))
```

x. Screenshot of the histogram created in (5)



xi. The entire R code used when finding the minimum weight of an adult dog in (6)

```
adultDog<-subset(animal, animal$Animal.Type=="Dog" & animal$Age.Intake>1)
min(adultDog$Weight)
```

xii. The answer obtained in (6)

3.3

xiii. The entire R code used when finding the maximum weight of an adult dog in (7)

```
max(adultDog$Weight)
```

xiv. The answer obtained in (7)

131

xv. The entire R code used when finding the mean(average) weight of an adult dog in (8)

```
mean(adultDog$Weight)
```

xvi. The answer obtained in (8)

36.11647

xvii. The entire R code used when finding the standard deviation of weights of adult dogs in (9)

```
sd(adultDog$Weight)
```

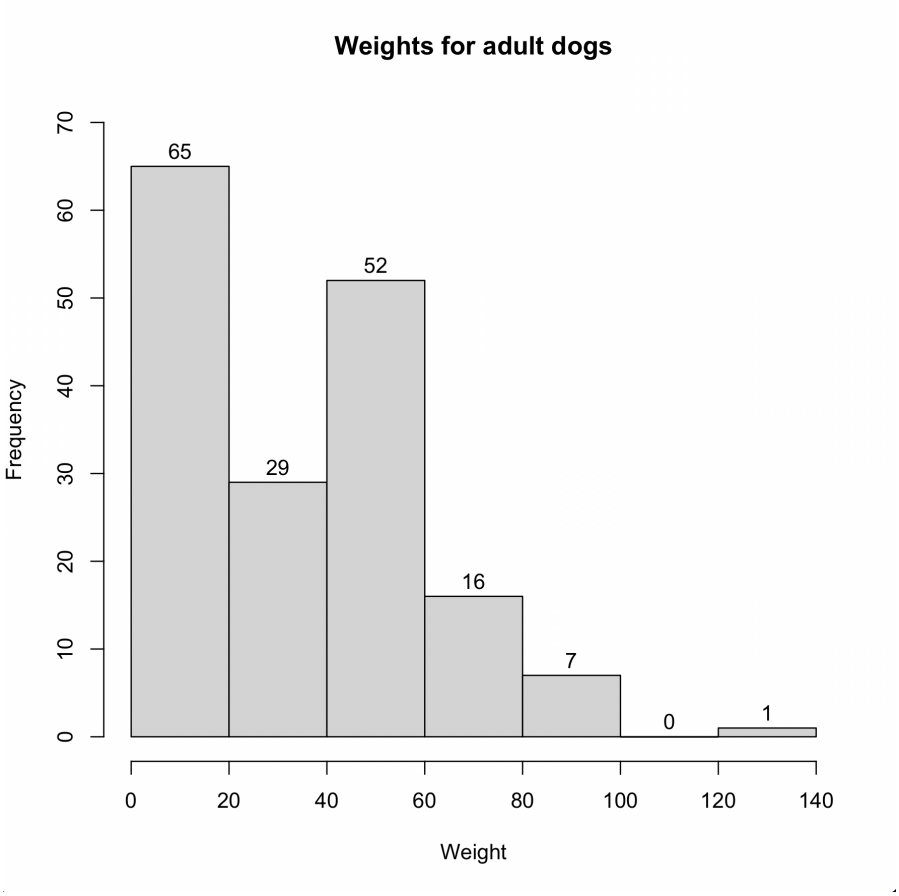
xviii. The answer obtained in (9)

24.51038

xix. The entire R code used when creating the histogram of adult dog weights in (10)

```
dwh<-hist(adultDog$Weight, main="Weights for adult dogs", xlab="Weight",
ylab="Frequency", plot=FALSE)
plot(dwh, ylim=c(0,max(dwh$counts)+5), main="Weights for adult dogs", xlab="Weight",
ylab="Frequency")
text(dwh$mids, dwh$counts, labels=dwh$counts, adj=c(0.5,-0.5))
```

xx. Screenshot of the histogram created in (10).



xxi. Whether the distribution of cat weights and dog weights are more normal or skewed

Cat Weights: The mean of the cat weights is 8.806122, which is closer to the middle value (min+max)/2 = (5+13.5)/2 = 18.5/2 = 9.25
Also, the cat weights have a lower standard deviation value of 1.857884.
Both these points indicate that the values in a dataset are closer to the mean, suggesting that the distribution of cat weights is more normal.

Dog Weights: The mean of the dog weights is 36.11647, which is closer to the minimum value of 3.3, suggests that the plot shifts towards the left, or is left-skewed (positive-skewed).
Also, the dog weights have a higher standard deviation value of 8.806122.
Both these points indicate that the distribution of dog weights is more skewed.