Madhu_Lab1

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2. Hello World!

```
print("Hello World!")
```

Here's an R code chunk that prints the text 'Hello world!'

```
## [1] "Hello World!"
```

```
print("Madhu Jagdale")
```

(a) Modify the code chunk below to print your name

```
## [1] "Madhu Jagdale"
```

3. Creating sequences

```
1:10  # Numbers 1 to 10
```

Using Colon operator

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```
127:132 # Numbers 127 to 132
```

```
## [1] 127 128 129 130 131 132
```

```
seq(1,10,1) # Numbers 1 to 10
```

Using seq function: seq(from, to, by)

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```
seq(1,10,2) # Odd numbers from 1 to 10
```

```
## [1] 1 3 5 7 9
```

```
seq(2,10,2) # Even numbers from 2 to 10
```

```
## [1]  2  4  6  8 10
```

```
3:12
```

(a) Use : to output the sequence of numbers from 3 to 12

```
##  [1]  3  4  5  6  7  8  9 10 11 12
```

```
seq(3,30,3)
```

(b) Use seq() to output the sequence of numbers from 3 to 30 in increments of 3

```
##  [1]  3  6  9 12 15 18 21 24 27 30
```

```
print("Hi")
```

```
## [1] "Hi"
```

```
x<- 3:12
y<- seq(3,30,3)
x*y
```

(c) Save the sequence from (a) as a variable x, and the sequence from (b) as a variable y. Output their product x*y

```
##  [1]   9  24  45  72 105 144 189 240 297 360
```

4. Cars data

```
head(cars)
```

```
##   speed dist
## 1     4    2
## 2     4   10
## 3     7    4
## 4     7   22
## 5     8   16
## 6     9   10
```

```
attach(cars)
speed
```

By Using the attach() command, which will allow us to access the speed and dist columns of cars as though they were vectors in our workspace.

```
##  [1]  4  4  7  7  8  9 10 10 10 11 11 12 12 12 12 13 13 13 13 14 14 14 14 15 15
## [26] 15 16 16 17 17 17 18 18 18 18 19 19 19 20 20 20 20 20 22 23 24 24 24 24 25
```

```
dist
```

```
##  [1]   2  10   4  22  16  10  18  26  34  17  28  14  20  24  28  26  34  34  46
## [20]  26  36  60  80  20  26  54  32  40  32  40  50  42  56  76  84  36  46  68
## [39]  32  48  52  56  64  66  54  70  92  93 120  85
```

```
mean(speed)
```

(a) Calculate the average and standard deviation of speed and distance.

```
## [1] 15.4
```

```
mean(dist)
```

```
## [1] 42.98
```

```
sd(speed)
```

```
## [1] 5.287644
```

```
sd(dist)
```

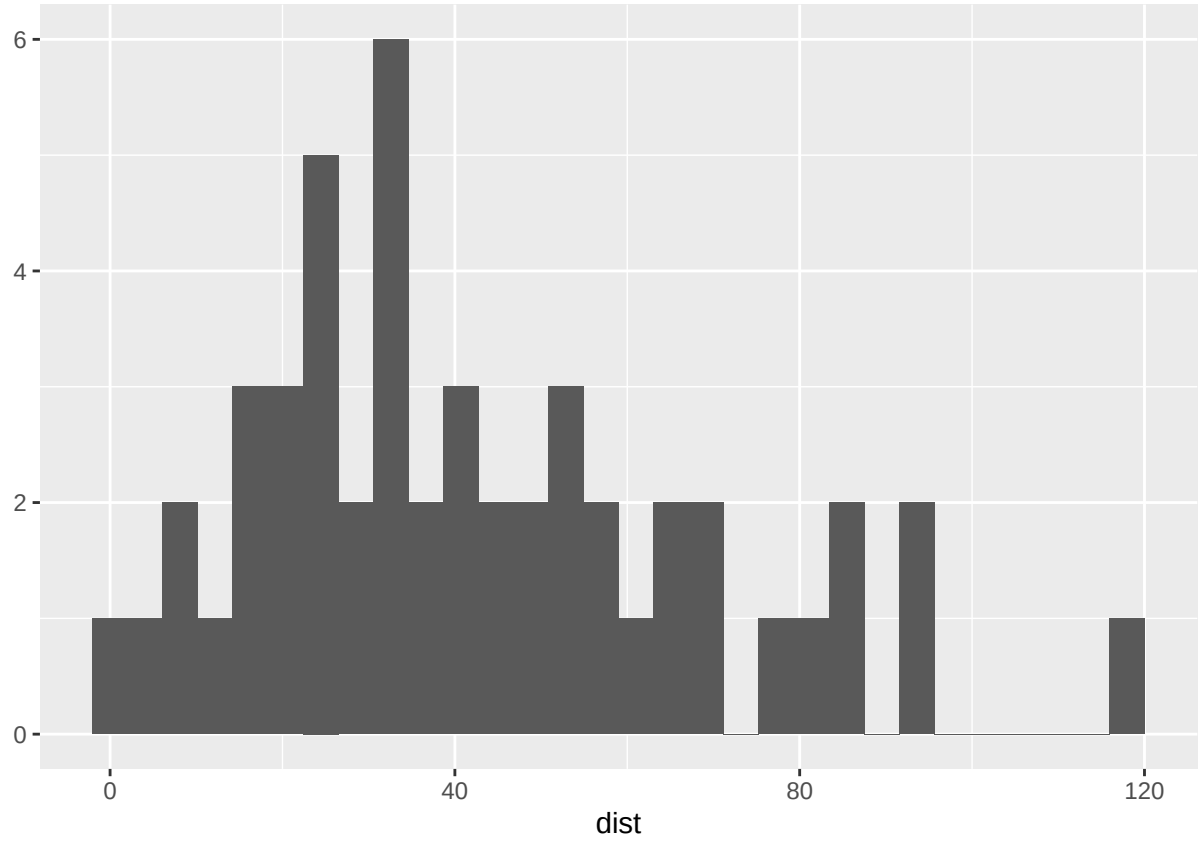
```
## [1] 25.76938
```

5. Histogram and Scatterplot

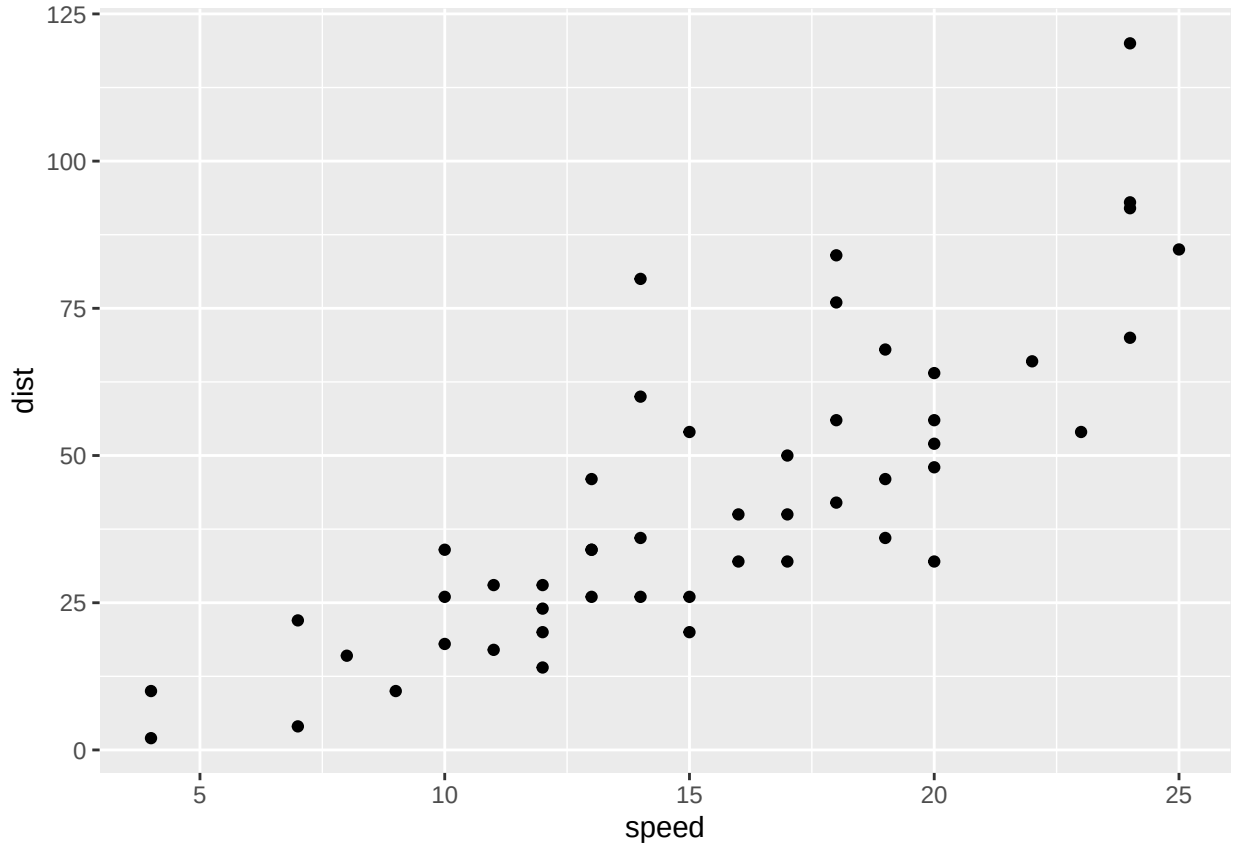
```
library(ggplot2)
qplot(dist) # Histogram of stopping distance
```

(a) Produce a histogram of stopping distance using the qplot function.

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```




```
library(ggplot2)
ggplot(cars,aes(x=speed,y=dist))+geom_point()  #Scatterplot of dist against speed.
```



(b)Use the qplot(x,y) function to create a scatterplot of dist against speed.