# Assignment_2

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2023-12-31

## Assignment 2

1. Add 2 + 2

```
2 + 2
```

```
## [1] 4
```

2. Create a list `dat` that goes from 1 to 10
3. View `dat`
4. Find the mean of `dat`

```
# dat <- c(1, 2, 3, 4, 5, 6, 7, 8, 9, 10) #this also works # nolint
(dat <- seq(1, 10, 1))
```

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

```
mean(dat)
```

```
## [1] 5.5
```

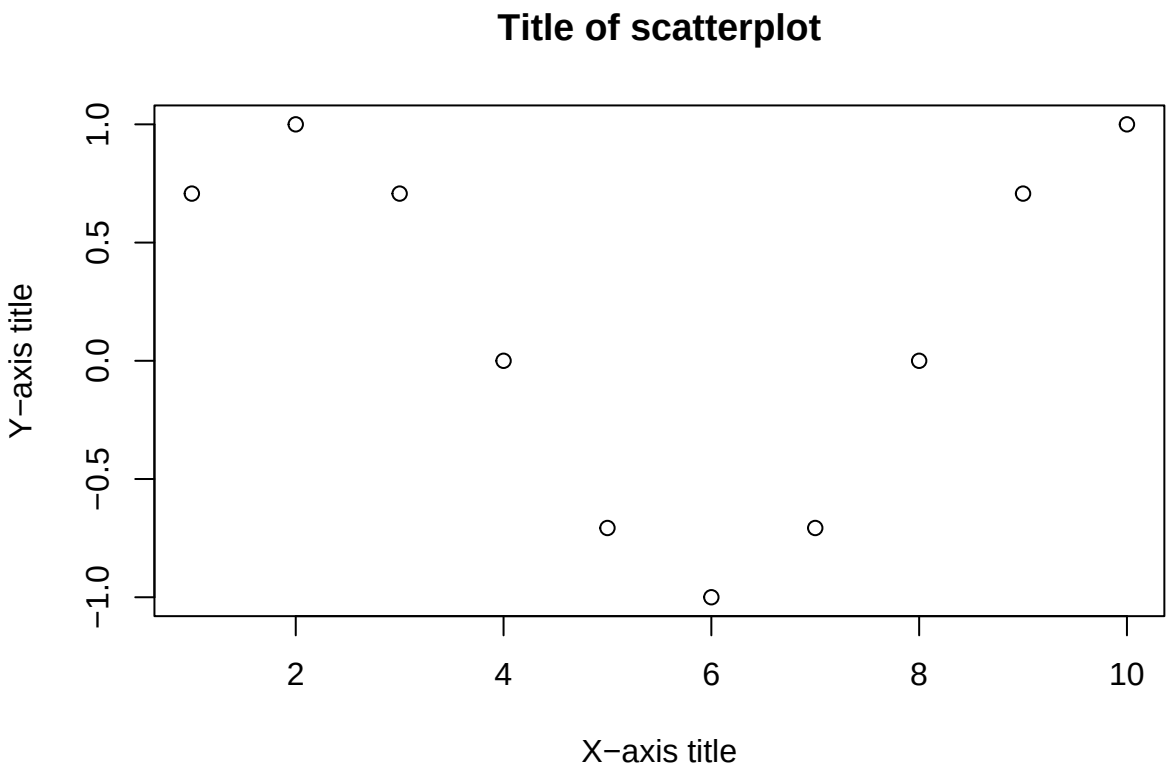
5. Create another list called `dat2` that takes the sine of each individual element of dat multiplied by $\frac{\pi}{2}$.

```
dat2 <- sin(dat * (pi / 4))
dat2
```

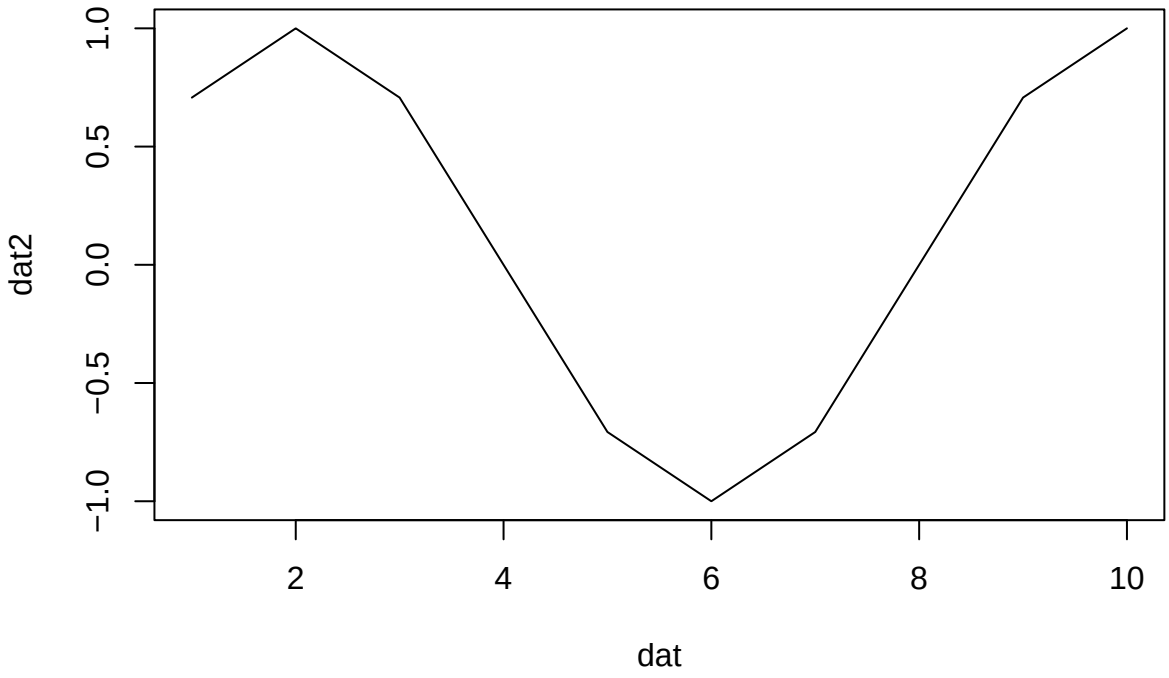
```
##  [1]  7.071068e-01  1.000000e+00  7.071068e-01  1.224647e-16 -7.071068e-01
##  [6] -1.000000e+00 -7.071068e-01 -2.449294e-16  7.071068e-01  1.000000e+00
```

6. View `dat2`
7. Plot `dat2` vs `dat` in a scatterplot
8. Plot `dat2` vs `dat` in a line graph

```
plot(
  x = dat, y = dat2,
  main = "Title of scatterplot",
  xlab = "X-axis title",
  ylab = "Y-axis title"
)
```




```
plot(dat, dat2, type = "l")
```




9. Create a list called `dat3` with 5 A's and 5 B's
10. View `dat3`

```
dat3 <- c("A", "A", "A")
```

11. Find the mean of `dat3`.

```
(dat3 <- c(rep("A", 5), rep("B", 5)))
```

```
##  [1] "A" "A" "A" "A" "A" "B" "B" "B" "B" "B"
```

```
mean(dat3)
```

```
## Warning in mean.default(dat3): argument is not numeric or logical: returning NA
```

```
## [1] NA
```

```
plot(dat3, dat, EVAL = FALSE)
```

13. Using the aggregate function, find the average of dat based on the list of A's and B's.
14. Make the code in [13] assigned to a variable called aggDat
15. View aggDat

```
aggregate(dat, list(dat3), mean)
```

```
##   Group.1 x
## 1       A 3
## 2       B 8
```

```
aggDat <- aggregate(dat, list(dat3), mean)
aggDat
```

```
##   Group.1 x
## 1       A 3
## 2       B 8
```

16. Select the column x in aggDat

```
aggDat$x
```

```
## [1] 3 8
```

17. Make a barplot of aggDat column x with “A” and “B” as the titles of each of the bars.

```
barplot(aggDat$x, names.arg = c("A", "B"))
```