

df |>

cat1	cat2	x
a	j	1
a	j	2
a	k	3
b	j	4
b	k	5
b	k	6
c	j	7
c	j	8
c	k	9

group_by(cat1, cat2) |>

cat1	cat2	x
a	j	1
a	j	2
a	k	3
b	j	4
b	k	5
b	k	6
c	j	7
c	j	8
c	k	9

summarize(...) |>
ungroup()

cat1	cat2	avg	total	n
a	j	1.5	3	2
a	k	3	3	1
b	j	4	4	1
b	k	5.5	11	2
c	j	7.5	15	2
c	k	9	9	1

```
df |>
  group_by(cat1, cat2) |>
  summarize(
    avg = mean(x),
    total = sum(x),
    n = n()
  ) |>
  ungroup()
```

cat1	cat2	avg	total	n
a	j	1.5	3	2
a	k	3	3	1
b	j	4	4	1
b	k	5.5	11	2
c	j	7.5	15	2
c	k	9	9	1