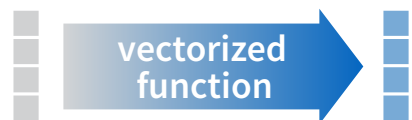


Vectorized Functions

to use with mutate()

```
mutate() transmute()
!()/$./**0()./*-/) 2*0().u
/*-50)/$./&//*-..$-0/)
-/0-)1/*-.*!/#(")/#0/+0/u
```



O sets

```
lag()
lead()
```

Cumulative Aggregates

```
cumall()
cumany()
cummax()
cummean()
cummin()
cumprod()
cumsum()
```

Rankings

```
cume_dist()
dense_rank()
min_rank()
ntile()
percent_rank()
row_number()
```

Math

```
+v-v*v/v^v%/v%%
log()vlog2()vlog10()
<v<=v>v>=v!v==
```

Misc

```
between()
case_when()
coalesce()
if_else()
na_if()
pmax()
pmin()
recode()
recode_factor()
```

Summary Functions

to use with summarise()

```
summarise()
sum()
mean()
median()
IQR()
mad()
sd()
var()
```



Counts

```
n()
distinct()
sum(is.na())
```

Location

```
mean()
median()
```

Logicals

```
mean()
sum()
```

Position/Order

```
first()
last()
nth()
```

Rank

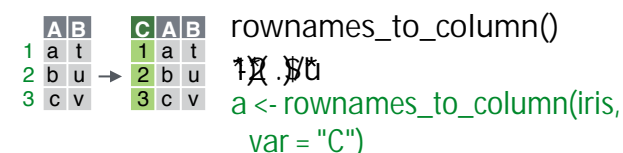
```
quantile()
min()
max()
```

Spread

```
IQR()
mad()
sd()
var()
```

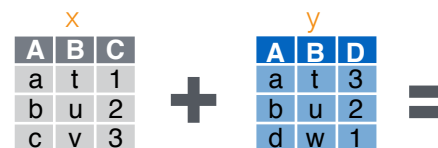
rownames_to_column()

```
rownames_to_column(iris, var = "C")
```

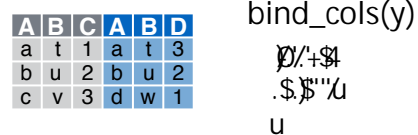


```
column_to_rownames(a, var = "C")
has_rownames()
remove_rownames()
```

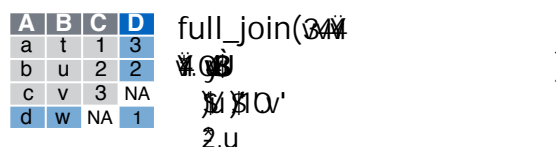
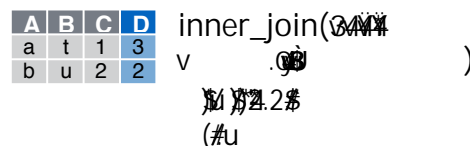
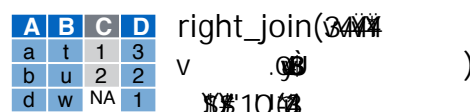
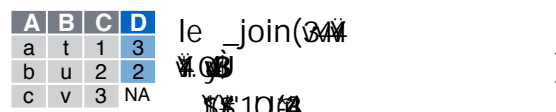
bind_cols()



```
bind_cols(x, y)
```



```
mutating_join(x, y, by = "A")
```

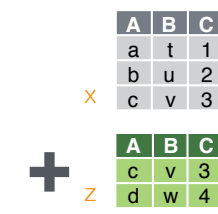


```
left_join(x, y, by = "A")
```

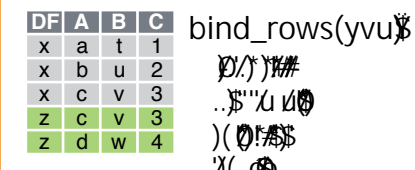
```
left_join(x, y, by = c("C" = "D"))
```

```
suffix()
left_join(x, y, suffix = c("1", "2"))
```

Combine Cases



```
bind_rows(x, z)
```



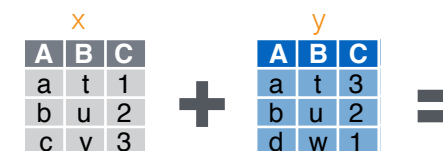
```
intersect(x, y)
```

```
setdiff(x, y)
```

```
union(x, y)
```

```
setequal(x, y)
```

rownames_to_column()



```
filtering_join(x, y, by = "A")
```

```
semi_join(x, y, by = "A")
```

```
anti_join(x, y, by = "A")
```