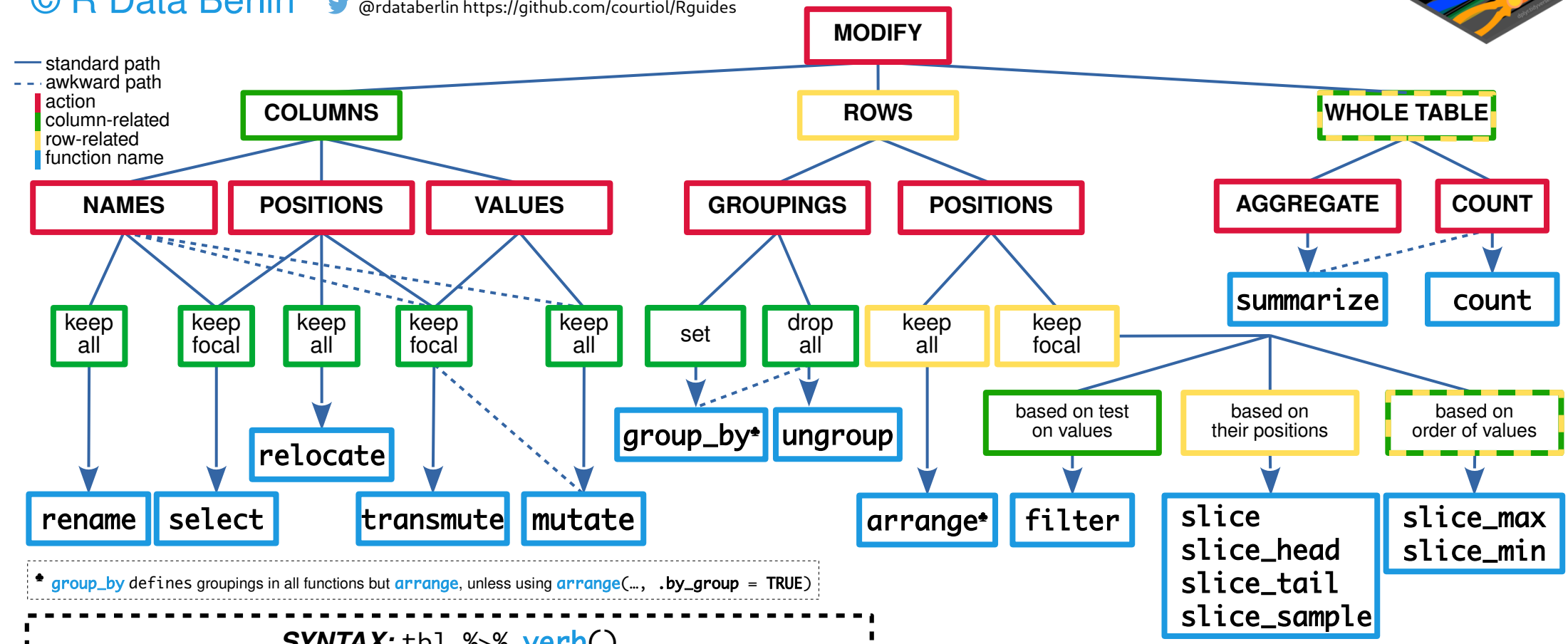
# Data Transformation with **dplyr 1.0** (part 1)

## A guide to 17 modifications applied to one tibble (`tbl`) or data.frame

 @rdataberlin https://github.com/courtiol/Rguides




♠ `group_by` defines groupings in all functions but `arrange`, unless using `arrange(…, .by_group = TRUE)`

### *SYNTAX:* `tbl %>% verb()`

font style varies to tease apart `placeholders` from true **R_commands**

```
tbl %>% rename(new_name_col_X = old_name_col_X)
tbl %>% select(name_col_X, name_col_Y [+ std_op.♦], selection_helper♠)
tbl %>% relocate(    •    , .before[or .after] = name_col_Z/selection_helper♠)
tbl %>% transmute(name_col_Z = fn♥(name_col_X))                    (synonymous)
tbl %>% mutate(name_col_Z = fn♥(name_col_X), [.    •    , .keep = "all"/"used"/"unused"/"none"])
tbl %>% group_by(name_col_X, name_col_Y) %>% verb() %>% ungroup()
tbl %>% arrange(name_col_X, desc(name_col_Y))
tbl %>% filter(fn_test_vectorized(name_col_X), fn_test_vectorized(name_col_Y))
tbl %>% slice(row_indices); tbl %>% slice_head/tail/sample(number_rows_to_keep);
tbl %>% slice_min/max(name_col_X, n = nb_rows_to_keep [or prop = proportion_rows_to_keep])
tbl %>% summarize(name_col_Z = fn♥(name_col_X))
tbl %>% count(); tbl %>% count(name_col_X)
```

♦ standard operators may be used to combine (`c()`, `&`, `|`) or negate elements (`!`)

♠ selection helpers from pkg **tidyselect** may be used to select columns based on:

- column values → `where(fn)`, e.g. `fn = is.numeric`
- column names → `starts_with("text")`, `ends_with("text")`, `contains("text")`, `matches("regex")`, `num_range("text", min:max)`, `all_of(vector_of_text)`, `any_of(vector_of_text)`
- column positions → `everything()`, `last_col()` -> *See guide part 2 for more details*

♥ if the function `fn` does not return a scalar or a nrow-long output, use `list(fn())` to create a list column (i.e. for nesting the content); for creating multiple columns at once `fn` should return a `data.frame` or `tibble` and no name should be defined when calling the **dplyr** verb (i.e. ~~`name_col_Z =`~~; if a name is defined, the output will be nested); to unnest to content of a list column, use one of the functions provided by the pkg **tidyr** (e.g. **`unnest_wider`**)