Untitled

Warning: this document contains 4 failing validations.

We can validate data inside of specialized code chunks. The **pointblank** makes this possible by loading it, as above. We'll perform some simple validations using `small_table`.

```
small_table
```

```
## # A tibble: 13 x 8
##    date_time           date          a b            c     d e     f
##    <dttm>              <date>     <int> <chr>    <dbl> <dbl> <lgl> <chr>
##  1 2016-01-04 11:00:00 2016-01-04     2 1-bcd-345     3 3423. TRUE  high
##  2 2016-01-04 00:32:00 2016-01-04     3 5-egh-163     8 10000. TRUE low
##  3 2016-01-05 13:32:00 2016-01-05     6 8-kdg-938     3 2343. TRUE  high
##  4 2016-01-06 17:23:00 2016-01-06     2 5-jdo-903    NA 3892. FALSE mid
##  5 2016-01-09 12:36:00 2016-01-09     8 3-ldm-038     7  284. TRUE  low
##  6 2016-01-11 06:15:00 2016-01-11     4 2-dhe-923     4 3291. TRUE  mid
##  7 2016-01-15 18:46:00 2016-01-15     7 1-knw-093     3  843. TRUE  high
##  8 2016-01-17 11:27:00 2016-01-17     4 5-boe-639     2 1036. FALSE low
##  9 2016-01-20 04:30:00 2016-01-20     3 5-bce-642     9  838. FALSE high
## 10 2016-01-20 04:30:00 2016-01-20     3 5-bce-642     9  838. FALSE high
## 11 2016-01-26 20:07:00 2016-01-26     4 2-dmx-010     7  834. TRUE  low
## 12 2016-01-28 02:51:00 2016-01-28     2 7-dmx-010     8  108. FALSE low
## 13 2016-01-30 11:23:00 2016-01-30     1 3-dka-303    NA 2230. TRUE  high
```

We can perform validation checks on that table with **pointblank** step functions (inside code chunks where `validate = TRUE`). The results will be initially hidden in the rendered HTML document but can be revealed.

2 validations failed.

```
<div class="panel-body" style="padding-left: 18px; padding-top: 18px; padding-right: 18px; padding-botto
  <div class="panel panel-success">

<div style="display:inline-flex;width:100%;">
  <div style="margin-top:2px;padding-left:5px;background:#FAFAFA;"><svg height="1.5em" viewBox="0 0 32
  <div style="padding-left:2px;padding-right:2px;padding-top:2px;padding-bottom:4px;margin-top:2px;backg
    <code style="background-color:#FAFAFA;padding-left:0;">col_exists(small_table, columns = vars(a, b,
  </div>
</div>

<div style="display:inline-flex;width:100%;">
  <div style="margin-top:2px;padding-left:5px;background:#FAFAFA;"><svg height="1.5em" viewBox="0 0 32
  <div style="padding-left:2px;padding-right:2px;padding-top:2px;padding-bottom:4px;margin-top:2px;backg
    <code style="background-color:#FAFAFA;padding-left:0;">rows_distinct(small_table, vars(d, e))</code
  </div>
</div>
<hr style="margin-top:10px;margin-bottom:0;border:1px solid #EBCCD1;"/>
<div class="panel-body" style="padding-left:13px;padding-top:15px;padding-right:13px;padding-bottom:15p
  <code style="background-color:#FAFAFA;padding-left:0;overflow-x:scroll;">## Error: Exceedance of fail
```

The `rows_distinct()` validation failed beyond the absolute threshold level (1).

* failure level (2) >= failure threshold (1)

```
</div>
<hr style="margin-top:0;margin-bottom:0;border:1px solid #EBCCD1;"/>


<div style="display:inline-flex;width:100%;">
  <div style="margin-top:2px;padding-left:5px;background:#FAFAFA;"><svg height="1.5em" viewBox="0 0 32 :
  <div style="padding-left:2px;padding-right:2px;padding-top:2px;padding-bottom:4px;margin-top:2px;backg
    <code style="background-color:#FAFAFA;padding-left:0;">col_vals_gt(small_table, vars(d), 1000)</cod
  </div>
</div>
<hr style="margin-top:10px;margin-bottom:0;border:1px solid #EBCCD1;"/>
<div class="panel-body" style="padding-left:13px;padding-top:15px;padding-right:13px;padding-bottom:15p:
  <code style="background-color:#FAFAFA;padding-left:0;overflow-x:scroll;">## Error: Exceedance of fail
```

The `col_vals_gt()` validation failed beyond the absolute threshold level (1).

* failure level (6) >= failure threshold (1)

```
</div>
<hr style="margin-top:0;margin-bottom:0;border:1px solid #EBCCD1;"/>


</div>
```

We could also use **pointblank**'s `stop_if_not()` function to generate some predicate-based validation statements.

1 validation failed.

```
<div class="panel-body" style="padding-left: 18px; padding-top: 18px; padding-right: 18px; padding-bott
  <div class="panel panel-success">


<div style="display:inline-flex;width:100%;">
  <div style="margin-top:2px;padding-left:5px;background:#FAFAFA;"><svg height="1.5em" viewBox="0 0 32 :
  <div style="padding-left:2px;padding-right:2px;padding-top:2px;padding-bottom:4px;margin-top:2px;backg
    <code style="background-color:#FAFAFA;padding-left:0;">stop_if_not(nrow(small_table) &gt; 10)</code
  </div>
</div>


<div style="display:inline-flex;width:100%;">
  <div style="margin-top:2px;padding-left:5px;background:#FAFAFA;"><svg height="1.5em" viewBox="0 0 32 :
  <div style="padding-left:2px;padding-right:2px;padding-top:2px;padding-bottom:4px;margin-top:2px;backg
    <code style="background-color:#FAFAFA;padding-left:0;">stop_if_not("time" %in% colnames(small_table)
  </div>
</div>
<hr style="margin-top:10px;margin-bottom:0;border:1px solid #EBCCD1;"/>
<div class="panel-body" style="padding-left:13px;padding-top:15px;padding-right:13px;padding-bottom:15p:
  <code style="background-color:#FAFAFA;padding-left:0;overflow-x:scroll;">## Error: '"time" %in% colna
</div>
<hr style="margin-top:0;margin-bottom:0;border:1px solid #EBCCD1;"/>
```

```
</div>
```

Note that with multiple **pointblank** step functions chained together, only the first error encountered will be reported.

1 validation failed.

```
<div class="panel-body" style="padding-left: 18px; padding-top: 18px; padding-right: 18px; padding-botto
  <div class="panel panel-danger">

<div style="display:inline-flex;width:100%;">
  <div style="margin-top:2px;padding-left:5px;background:#FAFAFA;"><svg height="1.5em" viewBox="0 0 32
  <div style="padding-left:2px;padding-right:2px;padding-top:2px;padding-bottom:4px;margin-top:2px;back
    <code style="background-color:#FAFAFA;padding-left:0;">small_table %&gt;%
```

col_exists(columns = vars(a, b, c, d, e, f)) %>% # this passes validation rows_distinct() %>% # this step fails (we see an error message) col_vals_gt(vars(d), 5000) # this also fails (we do not see its error)

```
</div>
<hr style="margin-top:10px;margin-bottom:0;border:1px solid #EBCCD1;"/>
<div class="panel-body" style="padding-left:13px;padding-top:15px;padding-right:13px;padding-bottom:15p
  <code style="background-color:#FAFAFA;padding-left:0;overflow-x:scroll;">## Error: Exceedance of fail
```

The `rows_distinct()` validation failed beyond the absolute threshold level (1).

* failure level (2) >= failure threshold (1)

```
</div>
<hr style="margin-top:0;margin-bottom:0;border:1px solid #EBCCD1;"/>

</div>
```

If all validations in a `validate` chunk do not fail, we can still inspect the validation code.

All validations passed.

```
<div class="panel-body" style="padding-left: 18px; padding-top: 18px; padding-right: 18px; padding-botto
  <div class="panel panel-success">

<div style="display:inline-flex;width:100%;">
  <div style="margin-top:2px;padding-left:5px;background:#FAFAFA;"><svg height="1.5em" viewBox="0 0 32
  <div style="padding-left:2px;padding-right:2px;padding-top:2px;padding-bottom:4px;margin-top:2px;back
    <code style="background-color:#FAFAFA;padding-left:0;">small_table %&gt;%
```

col_is_date("date") %>% col_vals_gt(vars(d), vars(c), na_pass = TRUE)

```
</div>

</div>
```

We can provide a single, agent-based interrogation inside of a `validate` chunk (the reporting is visible once the `Agent Report` button is pressed). For best rendering results, don't place anything else inside the chunk. This acts as standalone reporting and will not result in document-level errors or warnings.

All validations passed.

```
<div class="panel-body" style="padding-left: 18px; padding-top: 18px; padding-right: 18px; padding-botto
  <div class="panel panel-success">

<div style="display:inline-flex;width:100%;">
  <div style="margin-top:2px;padding-left:5px;background:#FAFAFA;"><svg height="1.5em" viewBox="0 0 32 :
  <div style="padding-left:2px;padding-right:2px;padding-top:2px;padding-bottom:4px;margin-top:2px;backg
    <code style="background-color:#FAFAFA;padding-left:0;">small_table %&gt;%
```

create_agent() %>% col_vals_gt(vars(a), 3) %>% col_vals_expr(~ case_when(c > 5 ~ a > 5 & d >= 2000)) %>% interrogate()

```
</div>

</div>
```