

DRAFTY

Dance with millions of HTML elements

Challenge

Challenge

- ◆ Drafty table has a large number of rows

4002 in currently active sheet

Challenge

- ◆ Drafty table has a large number of rows

4002 in currently active sheet

- ◆ Rows need to be rendered server-side

For SEO reasons

Challenge

- ◆ Drafty table has a large number of rows

4002 in currently active sheet

- ◆ Rows need to be rendered server-side

For SEO reasons

- ◆ Table will frequently be re-rendered



Filtering



Sorting



Column Resizing

Demo

Drafty Professors Sheet

Server-Side-Rendering

<template>

The HTML Content Template ([<template>](#)) element is a mechanism for holding HTML that is not to be rendered immediately when a page is loaded but may be instantiated subsequently during runtime using JavaScript.



Database

Server-Side-Rendering

<template>

The HTML Content Template ([<template>](#)) element is a mechanism for holding HTML that is not to be rendered immediately when a page is loaded but may be instantiated subsequently during runtime using JavaScript.



Database



HTML Template element

Client-Side-Rendering



HTML Template element



Model Layer



View Layer

Client-Side-Rendering



HTML Template element



Page Load

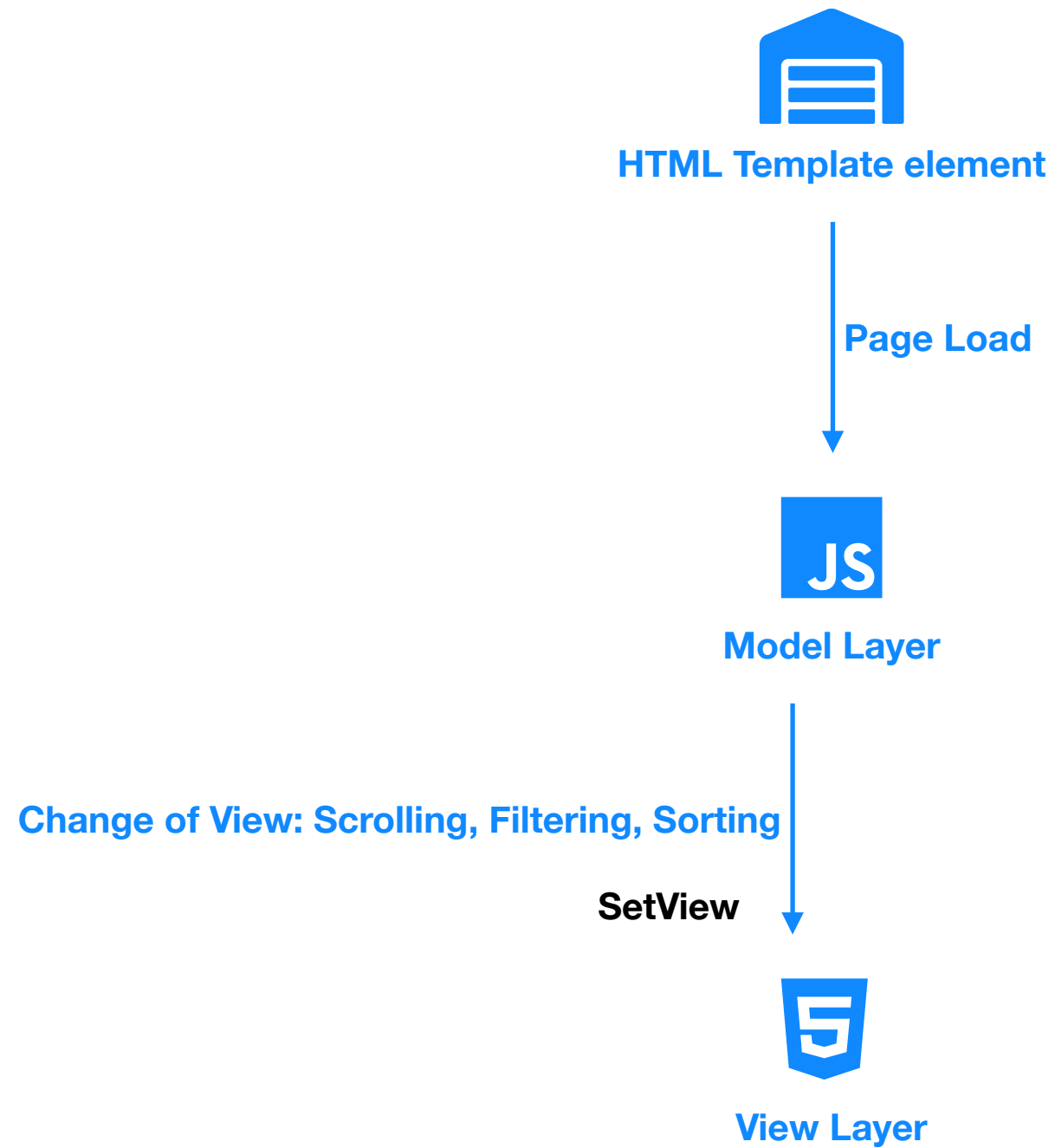


Model Layer

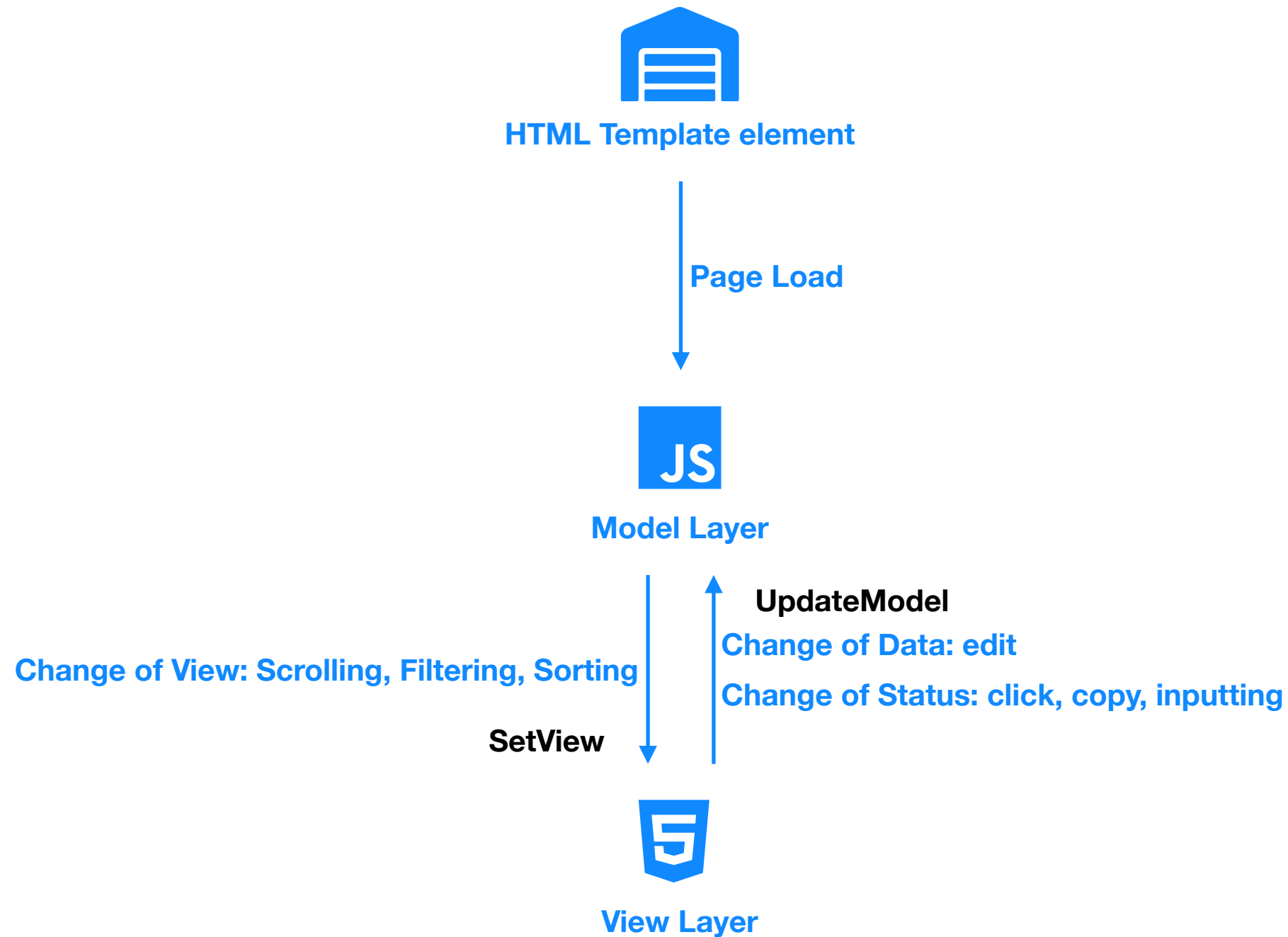


View Layer

Client-Side-Rendering



Client-Side-Rendering



Set View



Model Layer



View Layer

{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }
{ data }

Data Collection



Set View

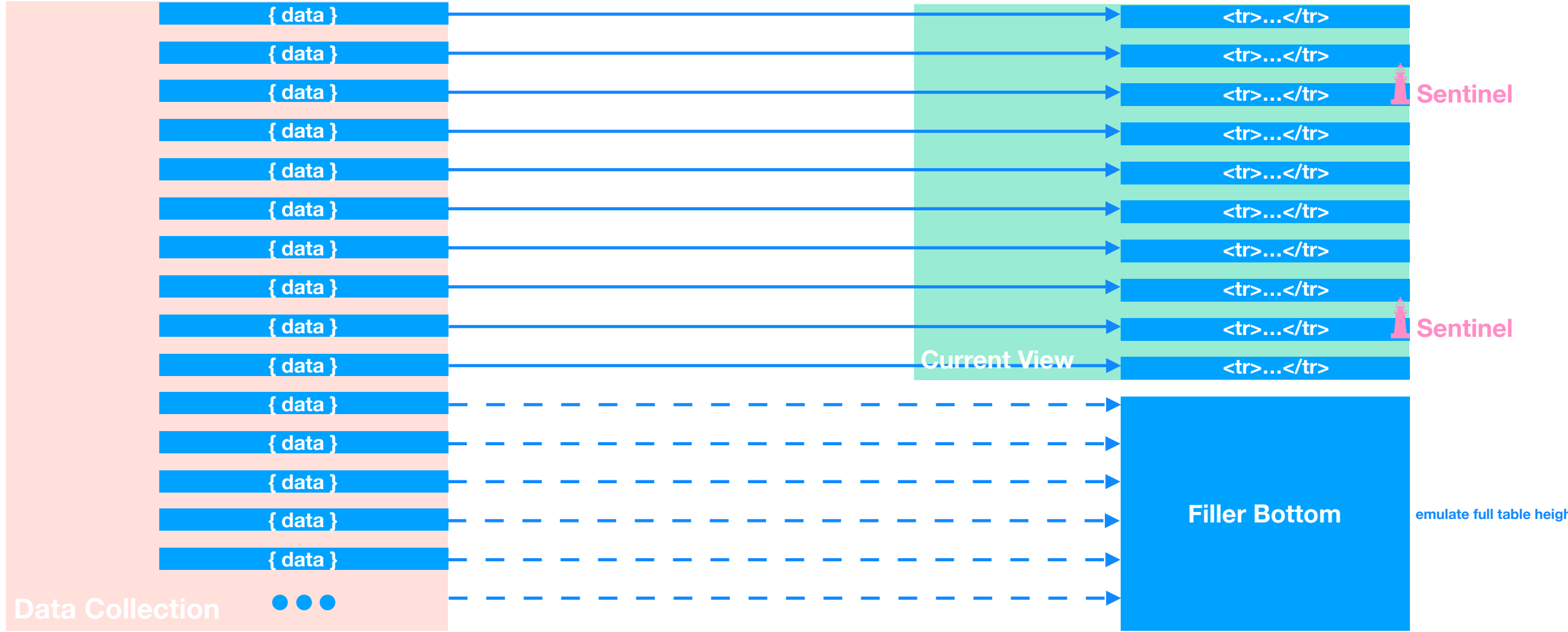


Model Layer



View Layer

One to One Mapping



Set View

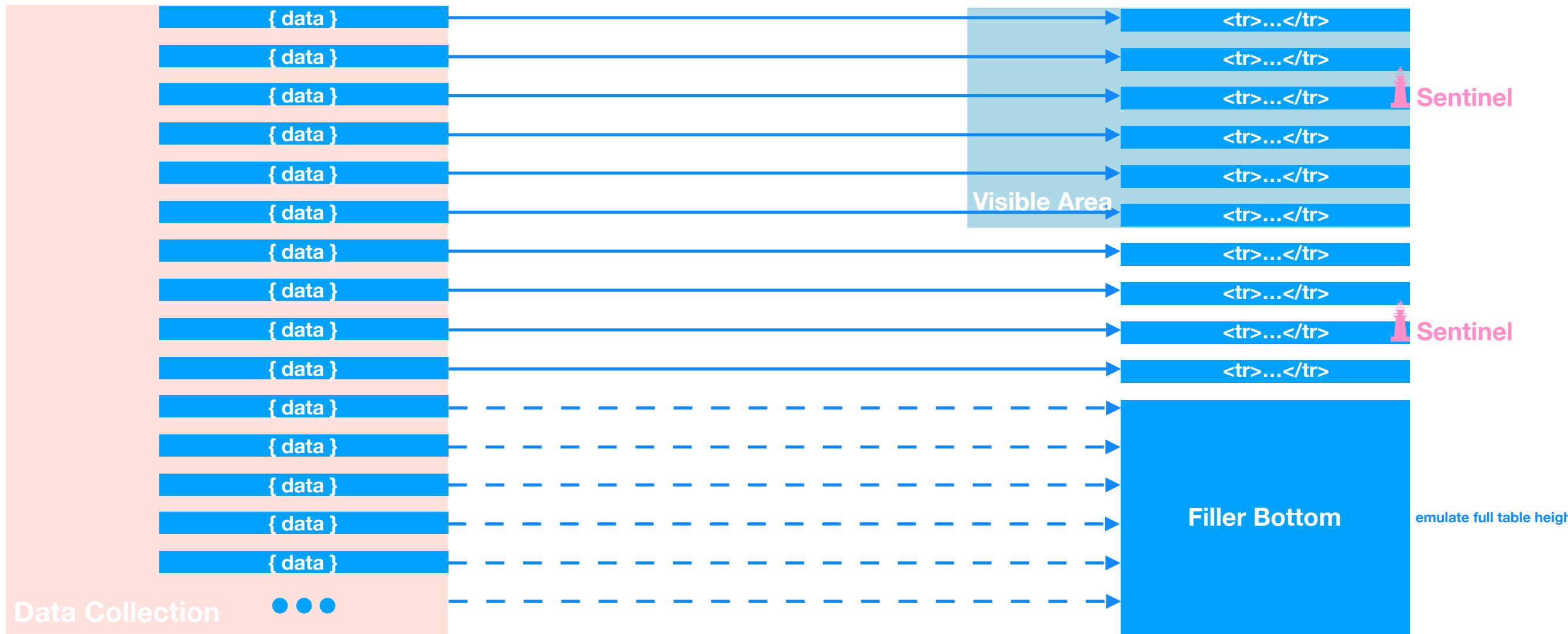


Model Layer



View Layer

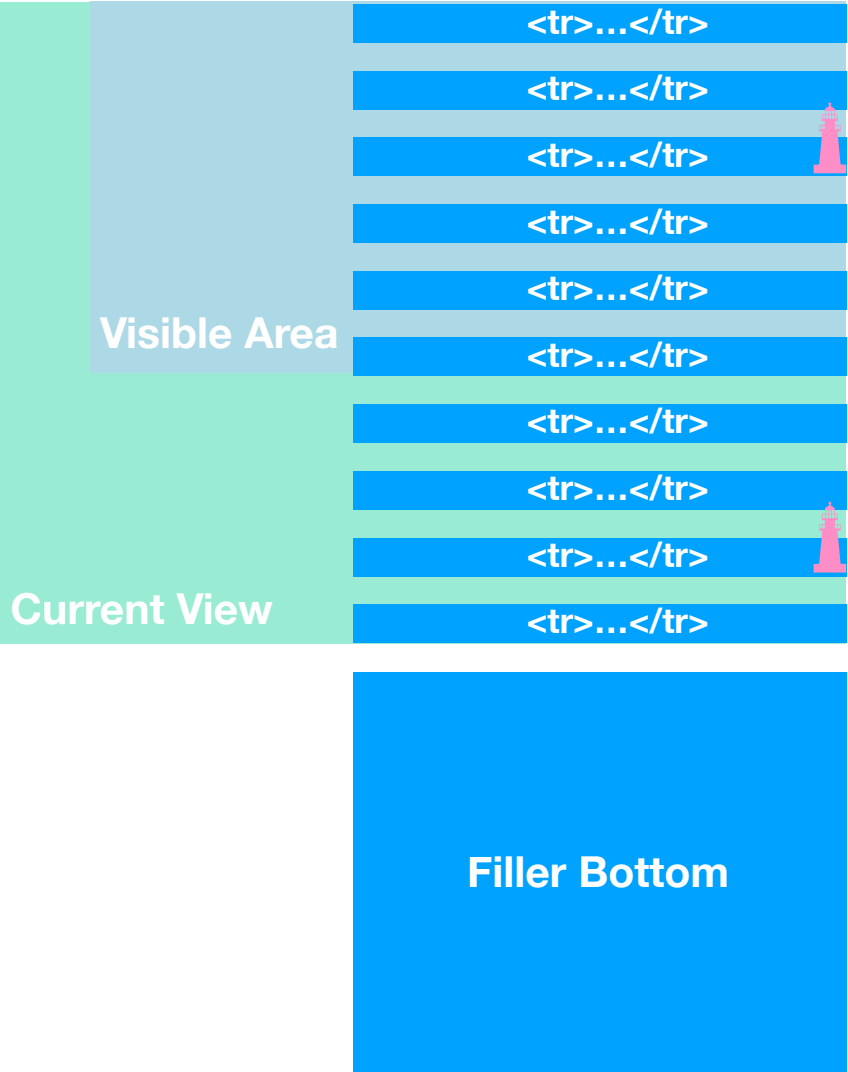
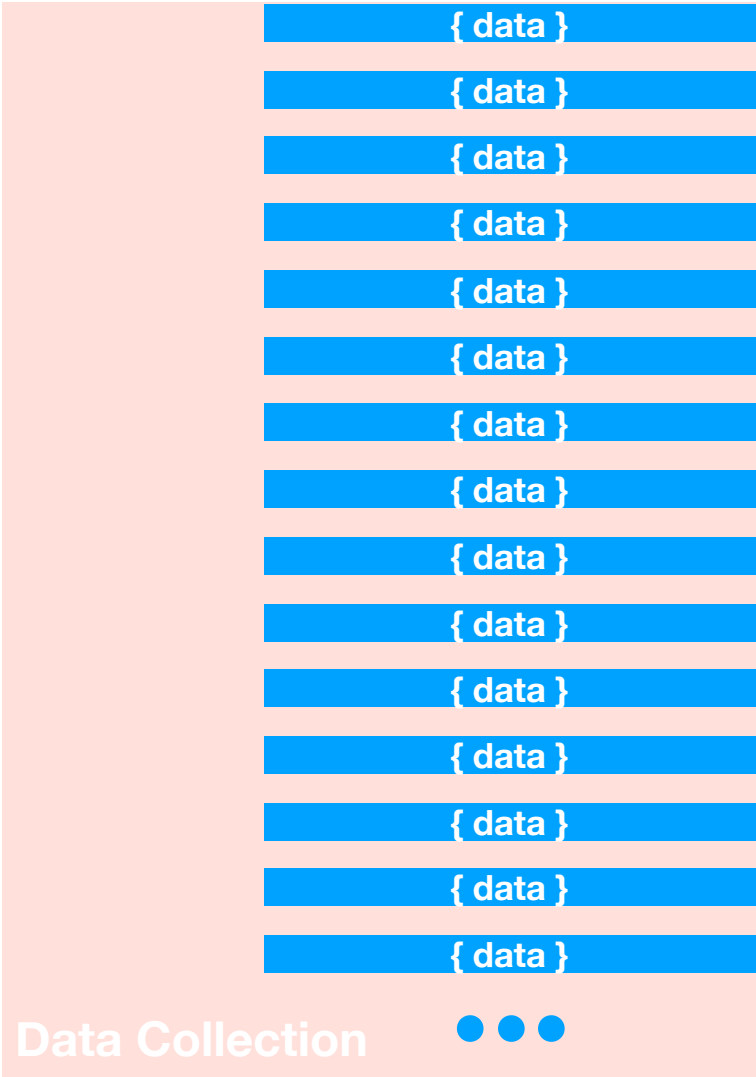
One to One Mapping



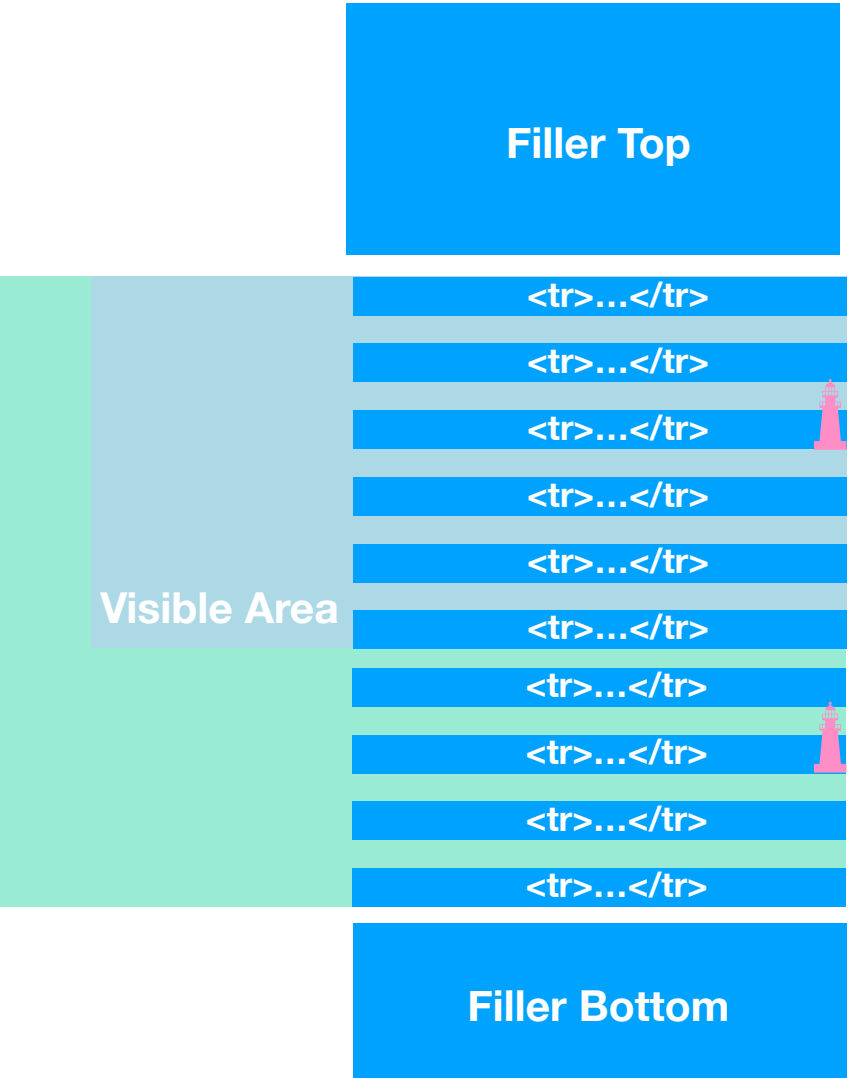
Set View : Scrolling



Model Layer



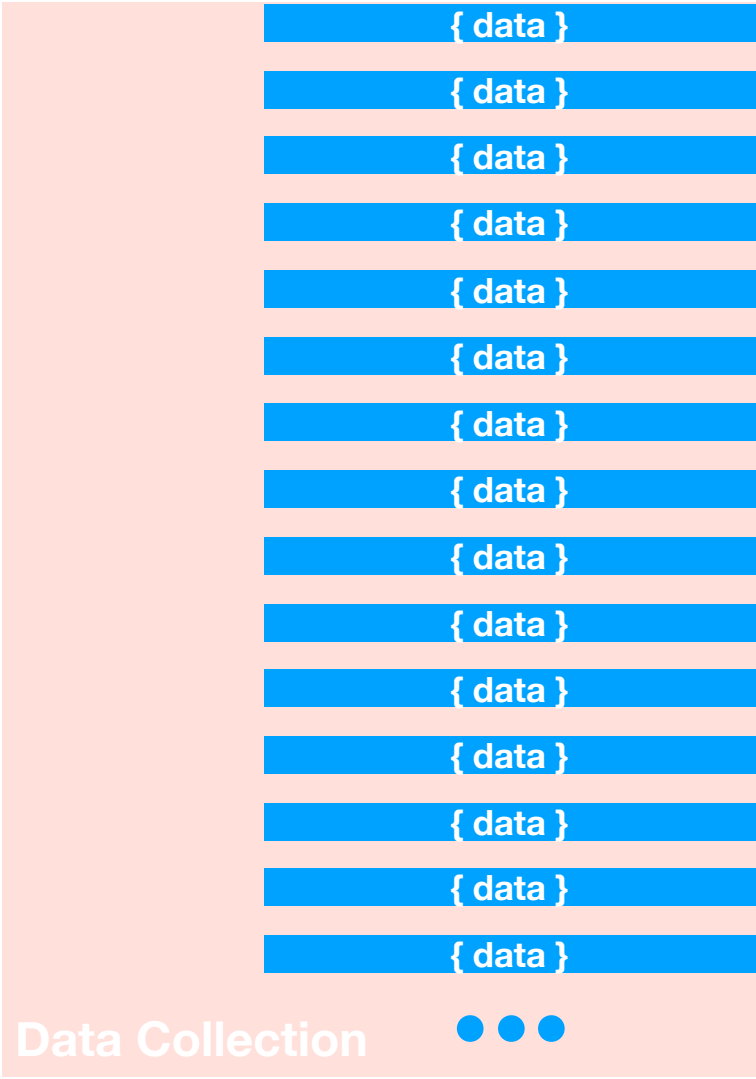
View Layer



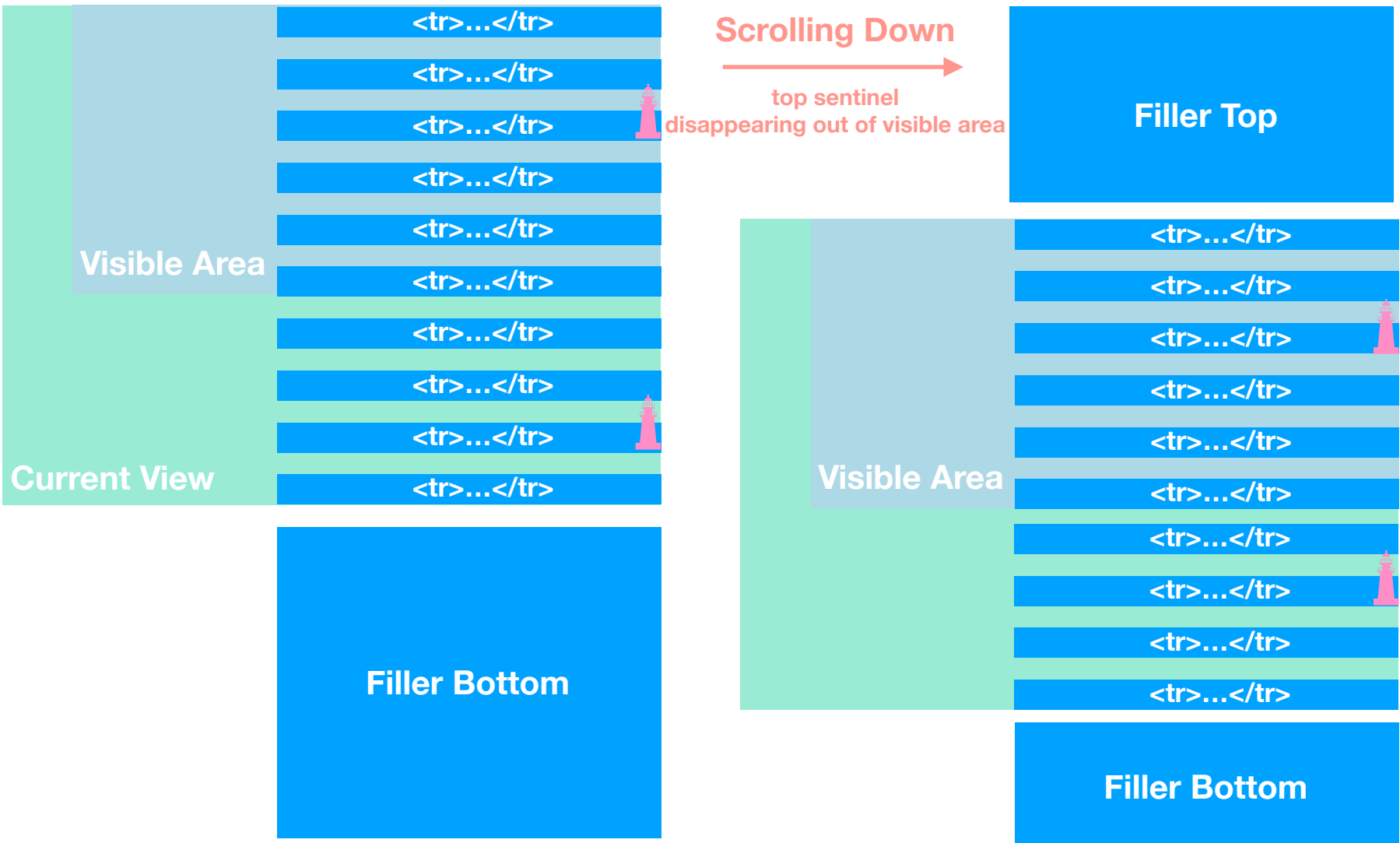
Set View : Scrolling



Model Layer



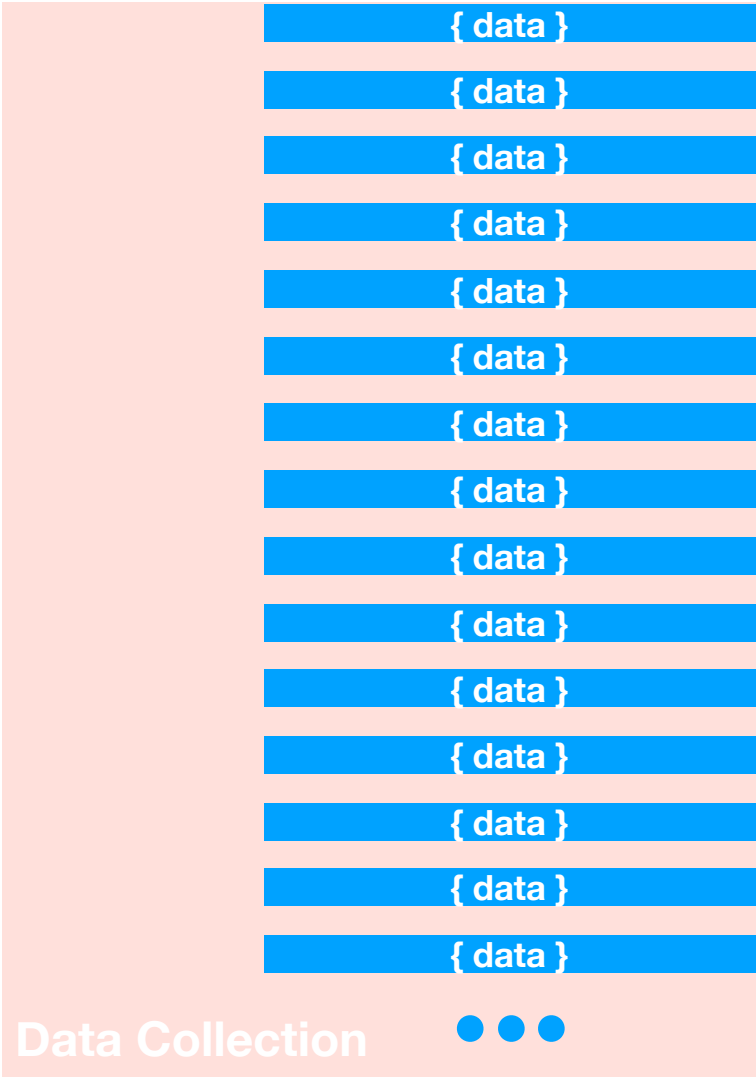
View Layer



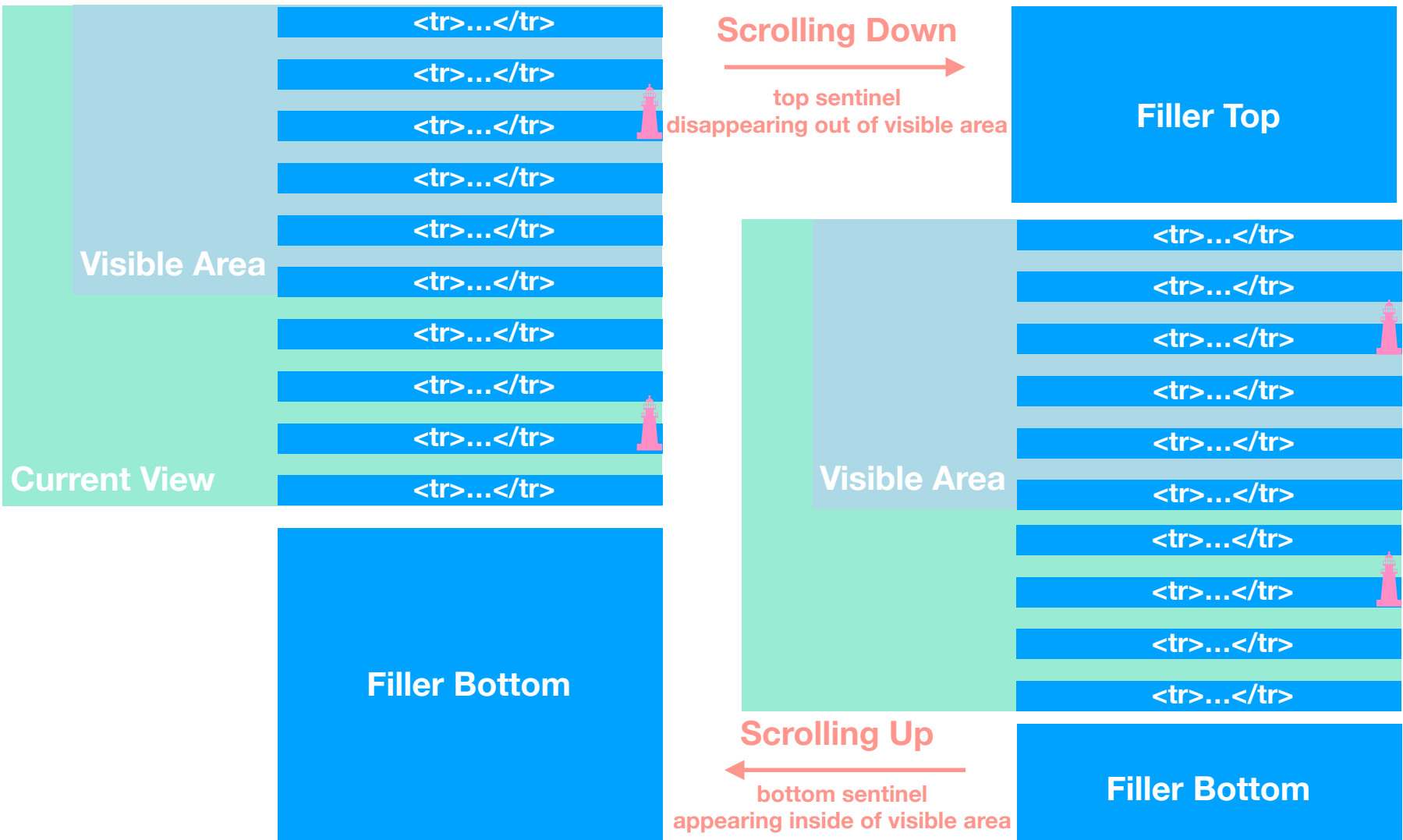
Set View : Scrolling



Model Layer



View Layer



Set View : Filtering



Model Layer



View Layer

1	{ data }
2	{ data }
3	{ data }
4	{ data }
5	{ data }
6	{ data }
7	{ data }
8	{ data }
9	{ data }
10	{ data }
11	{ data }
12	{ data }
13	{ data }
14	{ data }
15	{ data }

Data Collection ● ● ●

Set View : Filtering



Model Layer

1	{ data }
2	{ data }
3	{ data }
4	{ data }
5	{ data }
6	{ data }
7	{ data }
8	{ data }
9	{ data }
10	{ data }
11	{ data }
12	{ data }
13	{ data }
14	{ data }
15	{ data }

Data Collection



1	{ data }
5	{ data }
9	{ data }
13	{ data }
17	{ data }
21	{ data }
25	{ data }
28	{ data }
31	{ data }
37	{ data }
39	{ data }
41	{ data }
44	{ data }
45	{ data }
49	{ data }

Data Collection

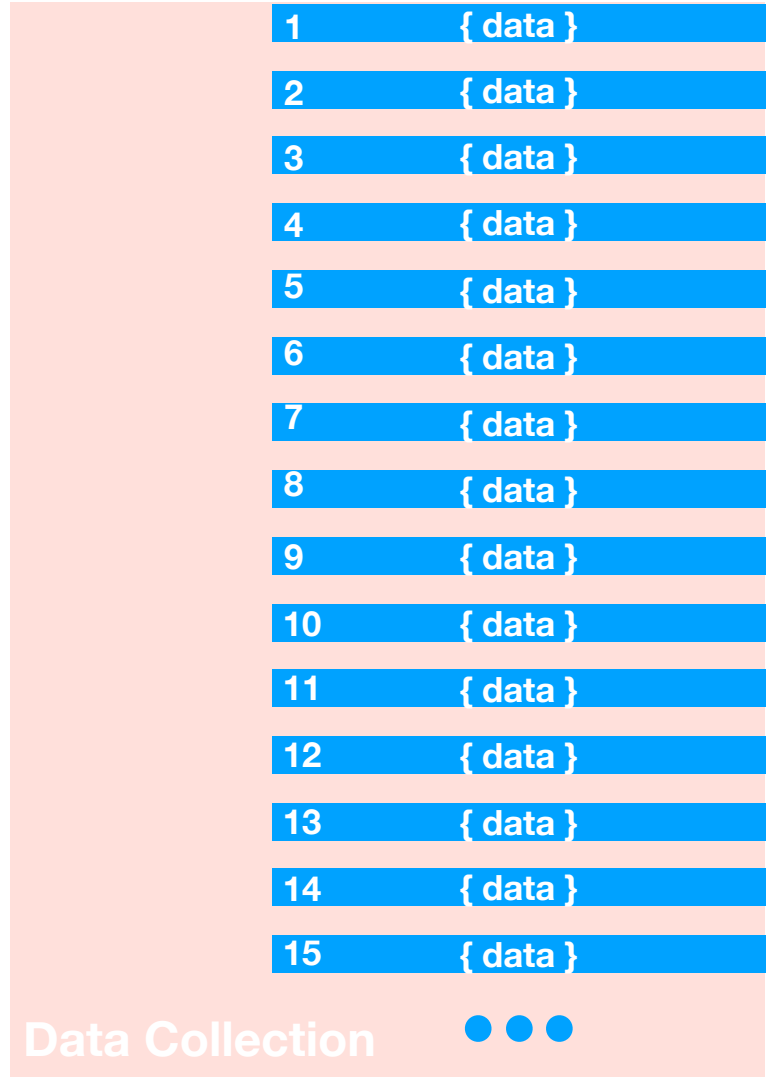


View Layer

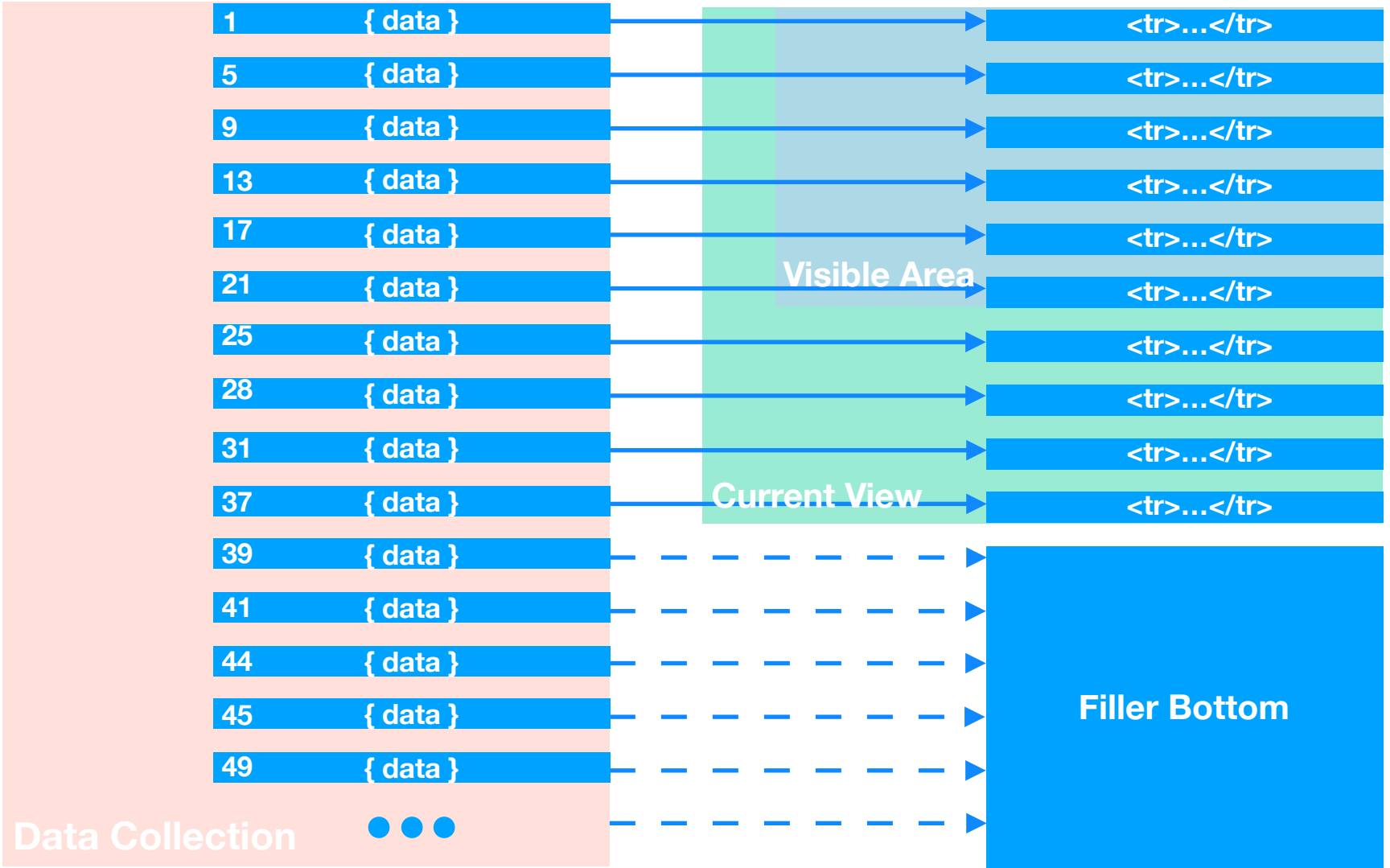
Set View : Filtering



Model Layer



View Layer



Set View : Filtering



Model Layer



View Layer

1	{ data }
5	{ data }
9	{ data }
13	{ data }
17	{ data }
21	{ data }
25	{ data }
28	{ data }
31	{ data }
37	{ data }
39	{ data }
41	{ data }
44	{ data }
45	{ data }
49	{ data }

Data Collection ● ● ●

Set View : Filtering



Model Layer

1	{ data }
5	{ data }
9	{ data }
13	{ data }
17	{ data }
21	{ data }
25	{ data }
28	{ data }
31	{ data }
37	{ data }
39	{ data }
41	{ data }
44	{ data }
45	{ data }
49	{ data }

Data Collection ● ● ●



1	{ data }
2	{ data }
3	{ data }
4	{ data }
5	{ data }
6	{ data }
7	{ data }
8	{ data }
9	{ data }
10	{ data }
11	{ data }
12	{ data }
13	{ data }
14	{ data }
15	{ data }

Data Collection ● ● ●

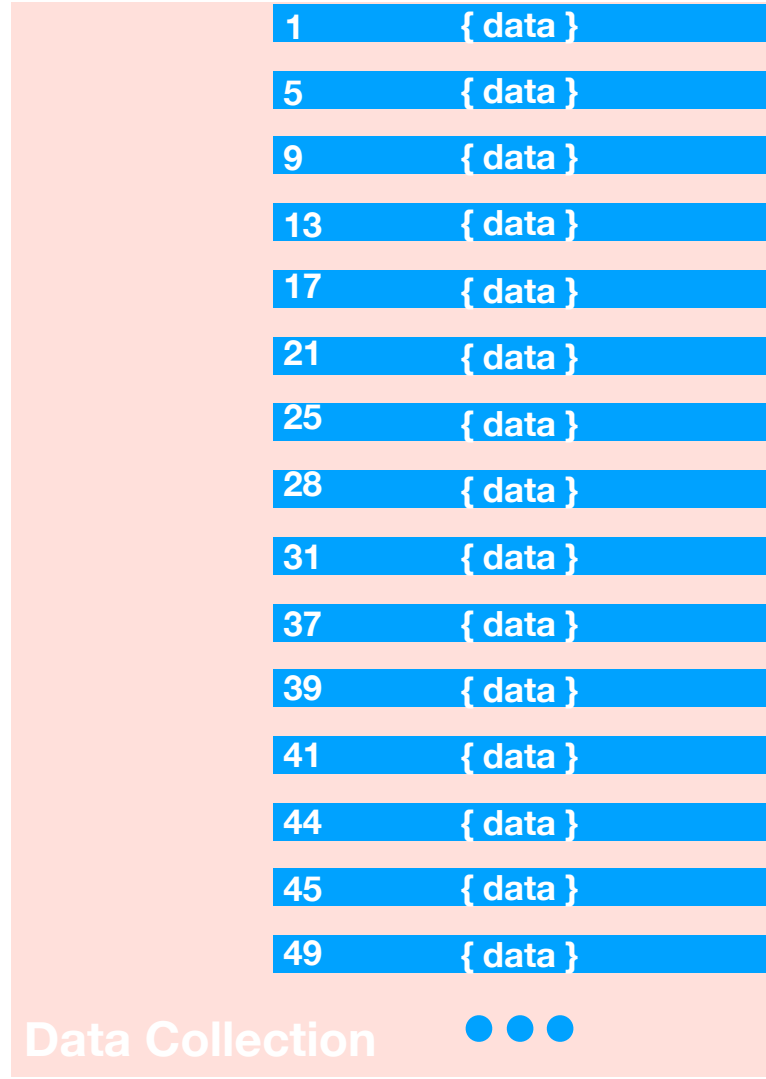


View Layer

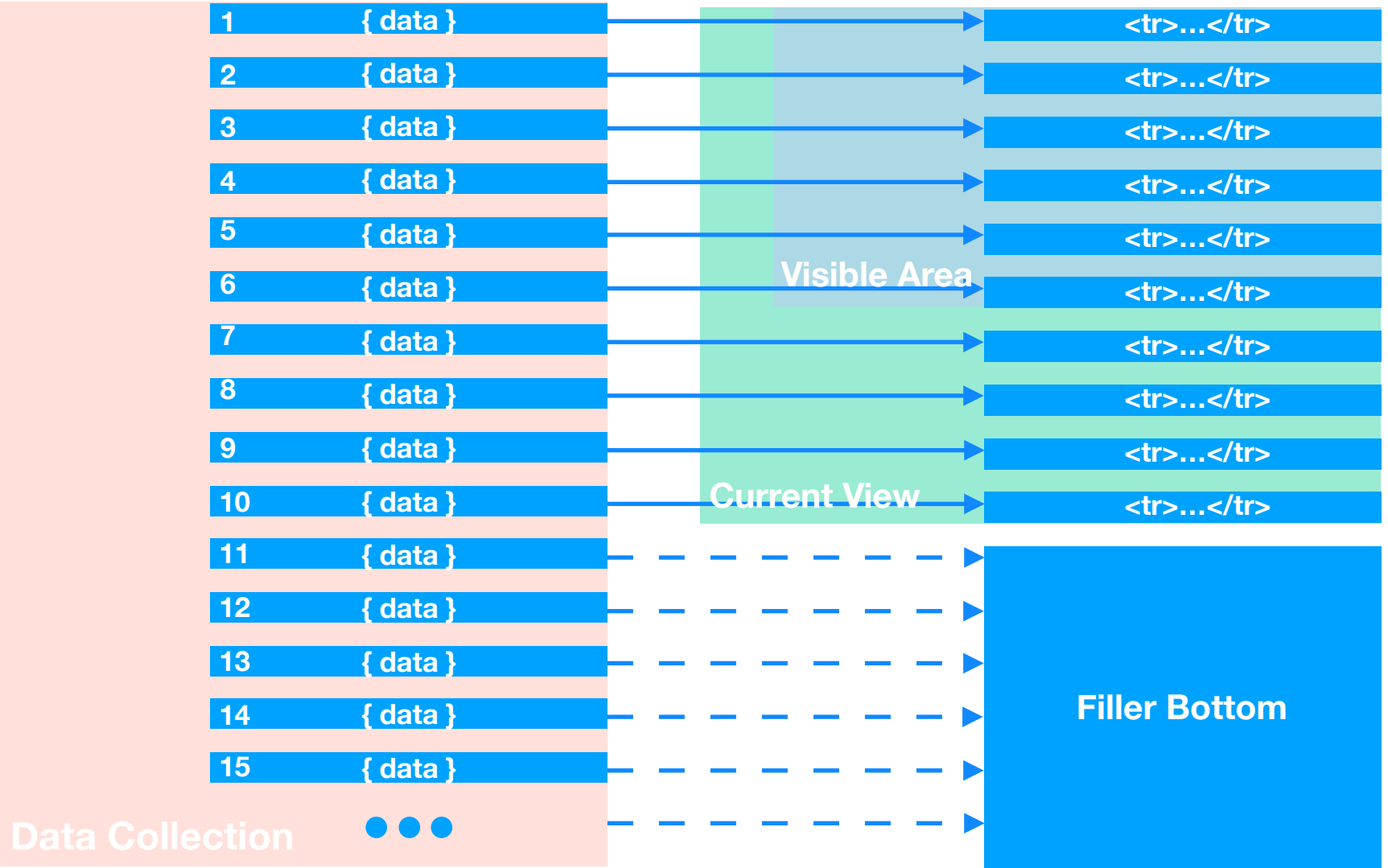
Set View : Filtering



Model Layer



View Layer



Set View : Sorting



Model Layer



View Layer

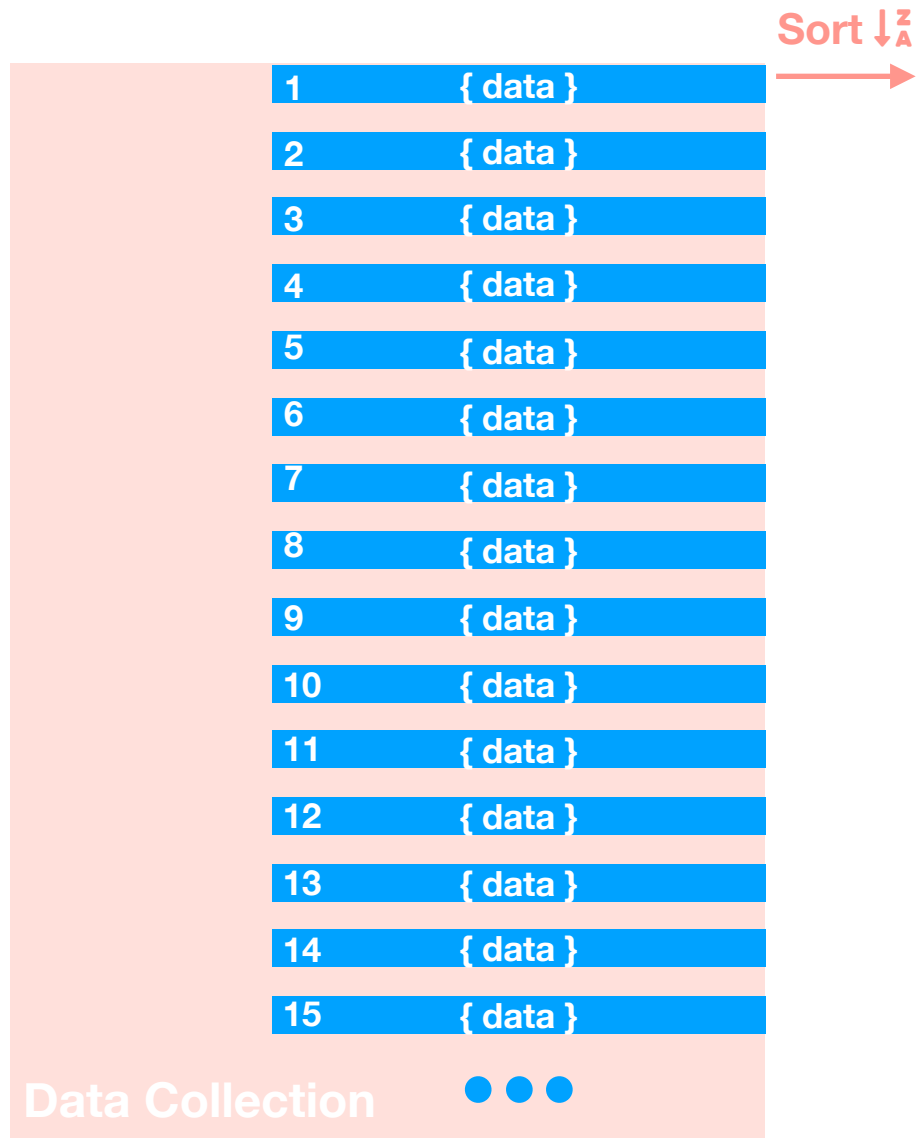
1	{ data }
2	{ data }
3	{ data }
4	{ data }
5	{ data }
6	{ data }
7	{ data }
8	{ data }
9	{ data }
10	{ data }
11	{ data }
12	{ data }
13	{ data }
14	{ data }
15	{ data }

Data Collection ● ● ●

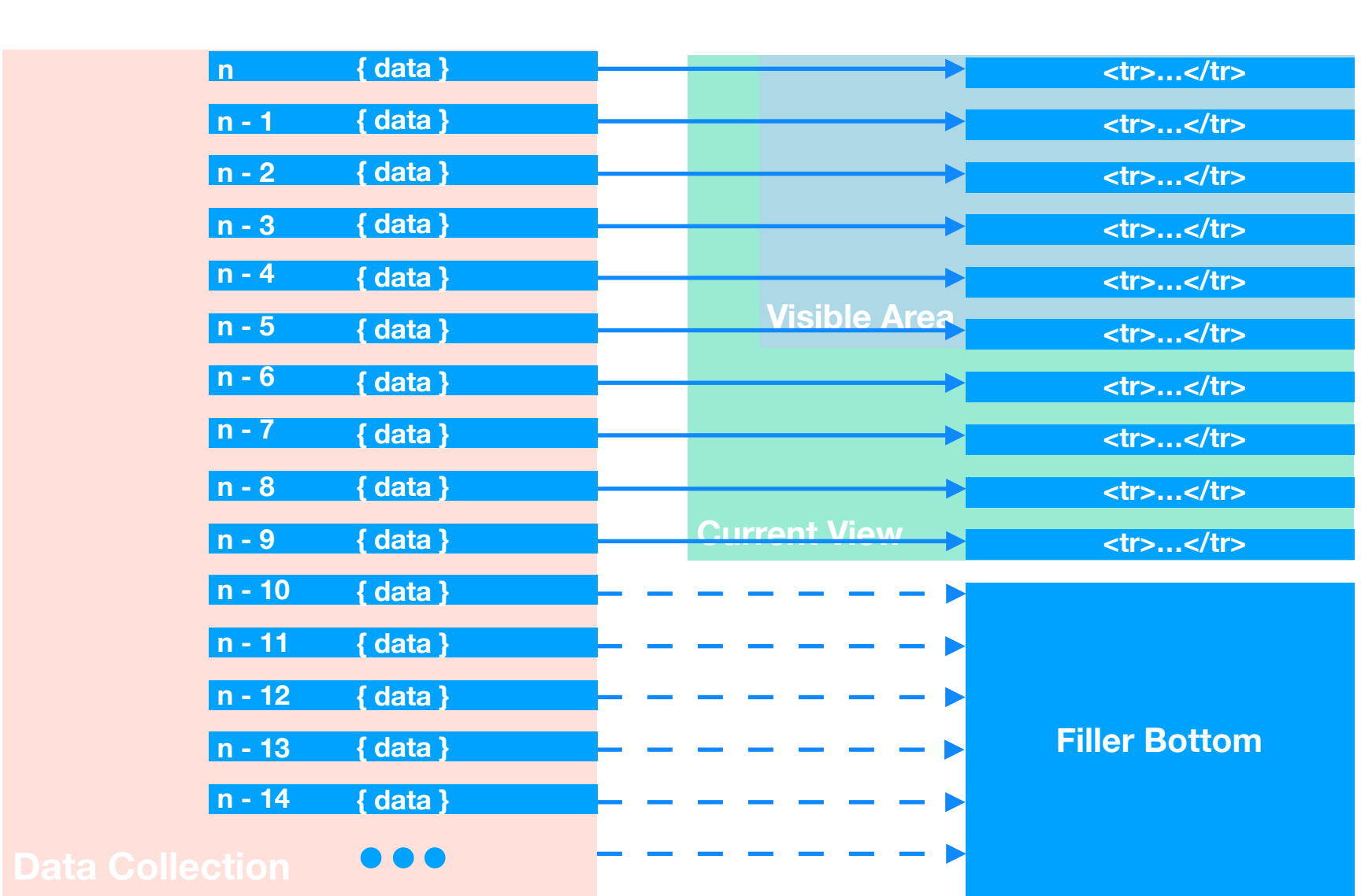
Set View : Sorting



Model Layer



View Layer



Set View : Sorting



Model Layer

1	{ data }
2	{ data }
3	{ data }
4	{ data }
5	{ data }
6	{ data }
7	{ data }
8	{ data }
9	{ data }
10	{ data }
11	{ data }
12	{ data }
13	{ data }
14	{ data }
15	{ data }

Data Collection

Sort ↓

n	{ data }
n - 1	{ data }
n - 2	{ data }
n - 3	{ data }
n - 4	{ data }
n - 5	{ data }
n - 6	{ data }
n - 7	{ data }
n - 8	{ data }
n - 9	{ data }
n - 10	{ data }
n - 11	{ data }
n - 12	{ data }
n - 13	{ data }
n - 14	{ data }

Data Collection



View Layer

Visible Area	<tr>...</tr>
	<tr>...</tr>
	<tr>...</tr>
	<tr>...</tr>
	<tr>...</tr>
	<tr>...</tr>
	<tr>...</tr>
	<tr>...</tr>
	<tr>...</tr>
	<tr>...</tr>
Current View	<tr>...</tr>
Filler Bottom	

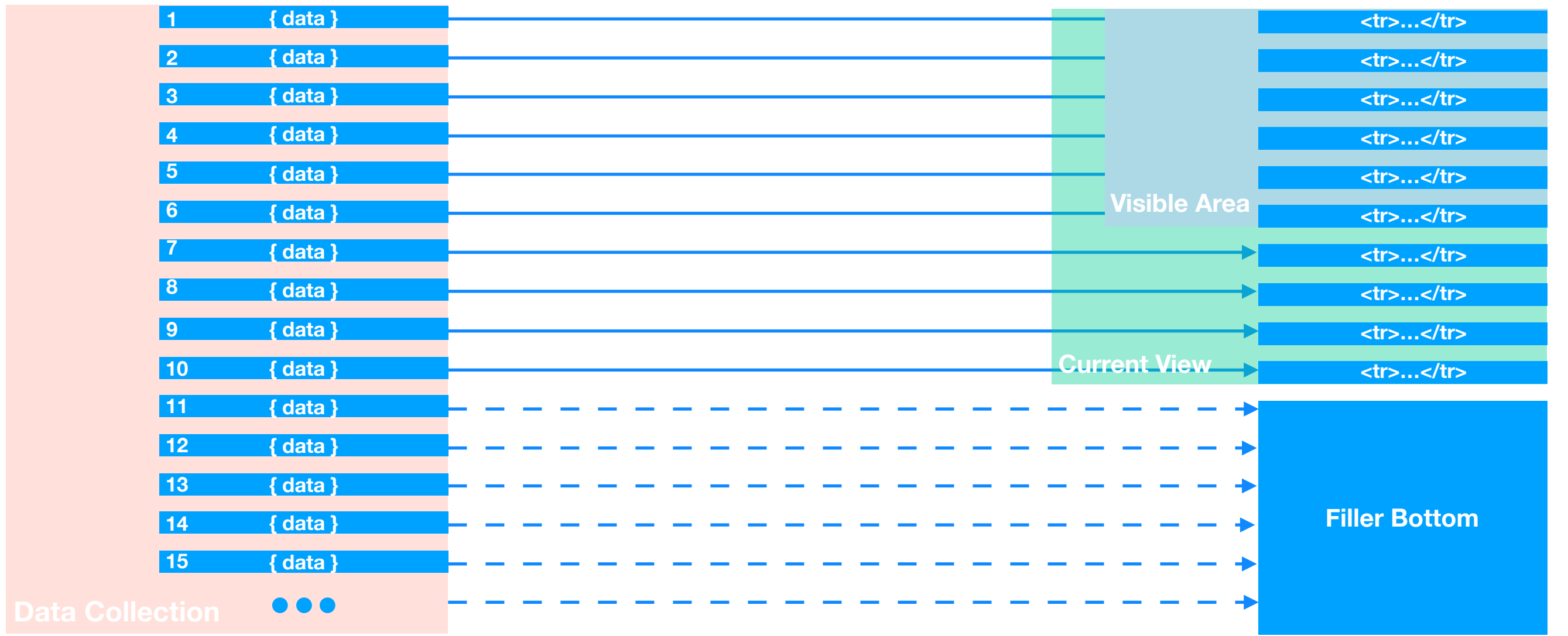
Set View : Sorting



Model Layer



View Layer



Challenge Revisited

Challenge Revisited

- ◆ Drafty table has a large number of rows

Challenge Revisited

- ◆ Drafty table has a large number of rows

Only a small subset of table rows are rendered

Challenge Revisited

- ◆ Drafty table has a large number of rows

Only a small subset of table rows are rendered

- ◆ Rows need to be rendered server-side

Challenge Revisited

- ◆ Drafty table has a large number of rows

Only a small subset of table rows are rendered

- ◆ Rows need to be rendered server-side

All table row are present inside `<template>` element

Challenge Revisited

- ◆ Drafty table has a large number of rows

Only a small subset of table rows are rendered

- ◆ Rows need to be rendered server-side

All table row are present inside `<template>` element

- ◆ Table will frequently be re-rendered

Challenge Revisited

- ◆ Drafty table has a large number of rows

Only a small subset of table rows are rendered

- ◆ Rows need to be rendered server-side

All table row are present inside `<template>` element

- ◆ Table will frequently be re-rendered

Operate on Model Layer, while updates reflected in View Layer

Thank You

Any Feedbacks?