

Adding a table of contents

REPORTING WITH R MARKDOWN



Amy Peterson

Curriculum Manager at DataCamp

Table of contents

```
1 ---  
2 title: "Investment Report"  
3 output:  
4 | html_document:  
5 | | toc: true  
6 date: "`r format(Sys.time(), '%d %B %Y')`"  
7 ---
```

Investment Report

08 May 2020

- Datasets
 - Investment Annual Summary
 - Investment Projects from the 2012 to 2018 Fiscal Years
 - Investment Projects in 2018

TOC depth

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_depth: 2  
7 date: "`r format(Sys.time(), '%d %B %Y')`"  
8 ---  
9  
10 ````{r setup, include = FALSE}  
11 knitr::opts_chunk$set(fig.align = 'center', echo = TRUE)  
12 ````  
13  
14 ````{r data, include = FALSE}  
15 library(readr)  
16 library(dplyr)  
17 library(ggplot2)  
18  
19 investment_annual_summary <- read_csv("https://assets.datacamp.com/  
production/repositories/5756/datasets/  
d0251f26117bbcfc0ea96ac276555b9003f4f7372/investment_annual_summary.csv")  
20 investment_services_projects <- read_csv("https://assets.datacamp.com/  
production/repositories/5756/datasets/  
bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/  
investment_services_projects.csv")  
21 ````  
22  
23  
24 ## Datasets  
25  
26 ### Investment Annual Summary  
27 The `investment_annual_summary` dataset provides a summary of the
```

Investment Report

08 May 2020

- Datasets

Datasets

Investment Annual Summary

Number sections

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_depth: 2  
7     number_sections: true  
8 date: "`r format(Sys.time(), '%d %B %Y')`"  
9 ---
```

Investment Report

08 May 2020

- 0.1 Datasets
 - 0.1.1 Investment Annual Summary
 - 0.1.2 Investment Projects from the 2012 to 2018 Fiscal Years
 - 0.1.3 Investment Projects in 2018

Number sections

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_depth: 2  
7     number_sections: true  
8 date: "`r format(Sys.time(), '%d %B %Y')`"  
9 ---  
10 ````{r setup, include = FALSE}  
11 knitr::opts_chunk$set(fig.align = 'center', echo = TRUE)  
12 ````  
13  
14 ````{r data, include = FALSE}  
15 library(readr)  
16 library(dplyr)  
17 library(ggplot2)  
18  
19 investment_annual_summary <- read_csv("https://assets.datacamp.com/  
20 production/repositories/5756/datasets/  
21 d0251f26117bbcf0ea96ac276555b9003f4f7372/investment_annual_summary.csv")  
22 investment_services_projects <- read_csv("https://assets.datacamp.com/  
23 production/repositories/5756/datasets/  
24 bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/investment_services_projects.csv")  
25  
26  
27 ## Datasets  
28  
29 ### Investment Annual Summary
```

Investment Report

08 May 2020

- 0.1 Datasets
 - 0.1.1 Investment Annual Summary
 - 0.1.2 Investment Projects from the 2012 to 2018 Fiscal Years
 - 0.1.3 Investment Projects in 2018

TOC float

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float: true  
7     toc_depth: 3  
8 date: "`r format(Sys.time(), '%d %B %Y')`"  
9 ---
```

investment_report.Rmd

1 ---
2 title: "Investment Report"
3 output:
4 html_document:
5 toc: true
6 toc_float: true
7 toc_depth: 3
8 date: "`r format(Sys.time(), '%d %B %Y')`"
9 ---
10 |
11 ``{r setup, include = FALSE}
12 knitr::opts_chunk\$set(fig.align = 'center', echo = TRUE)
13 ``
14
15 ``{r data, include = FALSE}
16 library(readr)
17 library(dplyr)
18 library(ggplot2)
19
20 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/d0251f26117bbcfc0ea96ac276555b9003f4f7372/
investment_annual_summary.csv")
21 investment_services_projects <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/
investment_services_projects.csv")
22
23
24 ## Datasets
25
26 ### Investment Annual Summary
27 The `investment_annual_summary` dataset provides a summary of the dol

Knit HTML

TOC float: collapsed

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float:  
7       collapsed: false  
8     toc_depth: 3  
9 date: "`r format(Sys.time(), '%d %B %Y')`"  
10 ---
```

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float:  
7       collapsed: false  
8     toc_depth: 3  
9 date: "`r format(Sys.time(), '%d %B %Y')`"  
10 ---  
11 ```{r setup, include = FALSE}  
12 knitr::opts_chunk$set(fig.align = 'center', echo = TRUE)  
13 ...  
14 ...  
15 ...  
16 ...  
17 library(readr)  
18 library(dplyr)  
19 library(ggplot2)  
20 ...  
21 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/  
repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372/  
investment_annual_summary.csv")  
22 investment_services_projects <- read_csv("https://assets.datacamp.com/production/  
repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/  
investment_services_projects.csv")  
23 ...  
24 ...  
25 ## Datasets  
26 ...  
27 ### Investment Annual Summary  
28 The `investment_annual_summary` dataset provides a summary of the doll
```

Knit HTML

TOC float: smooth scroll

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float:  
7       collapsed: false  
8       smooth_scroll: false  
9     toc_depth: 3  
10    date: "`r format(Sys.time(), '%d %B %Y')`"  
11 ---
```

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float:  
7       collapsed: false  
8       smooth_scroll: false  
9     toc_depth: 3  
10    date: "`r format(Sys.time(), '%d %B %Y')`"  
11 ---  
12 ```{r setup, include = FALSE}  
13 knitr::opts_chunk$set(fig.align = 'center', echo = TRUE)  
14 ...  
15 |  
16 ```{r data, include = FALSE}  
17 library(readr)  
18 library(dplyr)  
19 library(ggplot2)  
20  
21 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/  
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investment_annual_summary.csv")  
22 investment_services_projects <- read_csv("https://assets.datacamp.com/production/  
repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/  
investment_services_projects.csv")  
23 ...  
24  
25 ## Datasets  
26 ### Investment Annual Summary
```

Knit HTML

Summary

- `toc`
 - `toc_depth`
 - HTML default: 3
 - PDF default: 2
 - `number_sections`
- HTML
- `toc_float`
 - `collapsed`
 - `smooth_scroll`

Creating a report with a parameter

REPORTING WITH R MARKDOWN



Amy Peterson

Curriculum Manager at DataCamp

Parameters

- Create reports for different countries
- Add inputs to the YAML header

Adding a parameter

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float: true  
7 date: `r format(Sys.time(), '%d %B %Y')`  
8 params:  
9   country: Indonesia  
10 ---
```

Reviewing the code

```
42   ```{r indonesia-investment-projects}
43   indonesia_investment_projects <- investment_services_projects %>%
44     filter(country == "Indonesia")
45
46   ggplot(indonesia_investment_projects, aes(x = date_disclosed, y =
47     total_investment, color = status)) +
48     geom_point() +
49     labs(
50       title = "Investment Services Projects in Indonesia",
51       x = "Date Disclosed",
52       y = "Total IFC Investment in Dollars in Millions"
53     )
54   ``
```

Reviewing the code

```
42  ```{r country-investment-projects}
43  country_investment_projects <- investment_services_projects %>%
44    filter(country == "Indonesia")
45
46 ggplot(country_investment_projects, aes(x = date_disclosed, y =
47   total_investment, color = status)) +
48   geom_point() +
49   labs(
50     title = "Investment Services Projects in Indonesia",
51     x = "Date Disclosed",
52     y = "Total IFC Investment in Dollars in Millions"
53   )
54 ````
```

Reviewing the code

```
42   ```{r country-investment-projects}
43   country_investment_projects <- investment_services_projects %>%
44     | filter(country == "Indonesia")
45
46   ggplot(country_investment_projects, aes(x = date_disclosed, y =
47     total_investment, color = status)) +
48     | geom_point() +
49     | labs(
50       |   title = "Investment Services Projects in Indonesia",
51       |   x = "Date Disclosed",
52       |   y = "Total IFC Investment in Dollars in Millions"
53     )
```

Reviewing the code

```
42   ```{r country-investment-projects}
43   country_investment_projects <- investment_services_projects %>%
44     | filter(country == params$country)
45
46   ggplot(country_investment_projects, aes(x = date_disclosed, y =
47     total_investment, color = status)) +
48     geom_point() +
49     labs(
50       title = "Investment Services Projects in Indonesia",
51       x = "Date Disclosed",
52       y = "Total IFC Investment in Dollars in Millions"
53     )
54   ``
```

Reviewing the code

```
42   ```{r country-investment-projects}
43   country_investment_projects <- investment_services_projects %>%
44     | filter(country == params$country)
45
46   ggplot(country_investment_projects, aes(x = date_disclosed, y =
47     total_investment, color = status)) +
48     | geom_point() +
49     | labs(
50       |   title = "Investment Services Projects in Indonesia",
51       |   x = "Date Disclosed",
52       |   y = "Total IFC Investment in Dollars in Millions"
53     )
54   ````
```

Reviewing the code

```
42   ```{r country-investment-projects}
43   country_investment_projects <- investment_services_projects %>%
44     | filter(country == params$country)
45
46   ggplot(country_investment_projects, aes(x = date_disclosed, y =
47     total_investment, color = status)) +
48     | geom_point() +
49     | labs(
50       |   title = "Investment Services Projects",
51       |   x = "Date Disclosed",
52       |   y = "Total IFC Investment in Dollars in Millions"
53     )
54   ````
```

Reviewing the text

```
39  ### Investment Projects in Indonesia
40  The `investment_services_projects` dataset provides information
   about each investment project in Indonesia from 2012 to 2018.
   Information listed includes the project name, company name,
   sector, project status, and investment amounts.
```

Reviewing the text

```
39  ### Investment Projects in `r params$country`  
40  The `investment_services_projects` dataset provides information  
about each investment project in `r params$country` from 2012 to  
2018. Information listed includes the project name, company name,  
sector, project status, and investment amounts.
```

Reviewing the YAML header

```
1 ---  
2 title: "Investment Report"  
3 output:  
4   | html_document:  
5   |   | toc: true  
6   |   | toc_float: true  
7 date: "`r format(Sys.time(), '%d %B %Y')`"  
8 params:  
9   | country: Indonesia  
10 ---
```

```
1 ---  
2 title: "Investment Report for Projects in `r params$country`"  
3 output:  
4   | html_document:  
5   |   | toc: true  
6   |   | toc_float: true  
7 date: "`r format(Sys.time(), '%d %B %Y')`"  
8 params:  
9   | country: Indonesia  
10 ---
```

Knitting the report

```
1 ---  
2 title: "Investment Report for Projects in `r params$country`"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float: true  
7 date: "`r format(Sys.time(), '%d %B %Y')`"  
8 params:  
9   country: Turkey  
10 ---
```

Datasets

Investment Report for Projects in Turkey

08 May 2020

Datasets

Investment Annual Summary

The `investment_annual_summary` dataset provides a summary of the dollars in millions provided to each region for each fiscal year, from 2012 to 2018.

```
ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions, color = region))  
+  
  geom_line() +  
  labs(  
    title = "Investment Annual Summary",  
    x = "Fiscal Year",  
    y = "Dollars in Millions"  
)
```

Knitting a new report

```
1 ---  
2 title: "Investment Report for Projects in `r params$country`"  
3 output:  
4   | html_document:  
5   |   | toc: true  
6   |   | toc_float: true  
7 date: "`r format(Sys.time(), '%d %B %Y')`"  
8 params:  
9   | country: Philippines  
10 ---
```

Datasets

Investment Report for Projects in Philippines

08 May 2020

Datasets

Investment Annual Summary

The `investment_annual_summary` dataset provides a summary of the dollars in millions provided to each region for each fiscal year, from 2012 to 2018.

```
ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions, color = region))  
+  
  geom_line() +  
  labs(  
    title = "Investment Annual Summary",  
    x = "Fiscal Year",  
    y = "Dollars in Millions"  
  )
```

Multiple parameters

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Amy Peterson

Curriculum Manager at DataCamp

Fiscal year

- 2012 to 2018 fiscal years
- July 1st (previous year) - June 30th (year of interest)

Adding a parameter for fiscal year

```
1 ---  
2 title: "Investment Report for Projects in `r params$country`"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float: true  
7 date: "`r format(Sys.time(), '%d %B %Y')`"  
8 params:  
9   country: Indonesia  
10  fy: 2012  
11 ---
```

Adding parameters to define fiscal year

```
1 ---  
2 title: "Investment Report for Projects in `r params$country`"  
3 output:  
4   html_document:  
5     toc: true  
6     toc_float: true  
7 date: "`r format(Sys.time(), '%d %B %Y')`"  
8 params:  
9   country: Indonesia  
10  year_start: 2011-07-01  
11  year_end: 2012-06-30  
12  fy: 2012  
13 ---
```

Reviewing the code

```
61  ```{r country-investment-projects-2012}
62  country_investment_projects_2012 <- investment_services_projects %>%
63    filter(country == params$country,
64           date_disclosed >= "2011-07-01",
65           date_disclosed <= "2012-06-30")
66
67 ggplot(country_investment_projects_2012, aes(x = date_disclosed, y =
68       total_investment, color = status)) +
69   geom_point() +
70   labs(
71     title = "Investment Services Projects",
72     x = "Date Disclosed",
73     y = "Total IFC Investment in Dollars in Millions"
74   )
75 ````
```

Reviewing the code

```
61  ```{r country-investment-projects-2012}
62  country_investment_projects_2012 <- investment_services_projects %>%
63  | filter(country == params$country,
64  | | | date_disclosed >= params$year_start,
65  | | | date_disclosed <= params$year_end)
66
67 ggplot(country_investment_projects_2012, aes(x = date_disclosed, y =
68   total_investment, color = status)) +
69   geom_point() +
70   labs(
71     title = "Investment Services Projects",
72     x = "Date Disclosed",
73     y = "Total IFC Investment in Dollars in Millions"
74   )
```

```

# Reviewing the code

```
61 ```{r country-investment-projects-2012}
62 country_investment_projects_2012 <- investment_services_projects %>%
63 filter(country == params$country,
64 date_disclosed >= params$year_start,
65 date_disclosed <= params$year_end)
66
67 ggplot(country_investment_projects_2012, aes(x = date_disclosed, y =
68 total_investment, color = status)) +
69 geom_point() +
70 labs(
71 title = "Investment Services Projects",
72 x = "Date Disclosed",
73 y = "Total IFC Investment in Dollars in Millions"
74)
75 ````
```

# Reviewing the code

```
61 ```{r country-annual-investment-projects}
62 country_annual_investment_projects <- investment_services_projects %>%
63 filter(country == params$country,
64 date_disclosed >= params$year_start,
65 date_disclosed <= params$year_end)
66
67 ggplot(country_annual_investment_projects, aes(x = date_disclosed, y
68 = total_investment, color = status)) +
69 geom_point() +
70 labs(
71 title = "Investment Services Projects",
72 x = "Date Disclosed",
73 y = "Total IFC Investment in Dollars in Millions"
74)
75 ````
```

# Reviewing the text

```
59 ### Investment Projects in `r params$country` in 2012
60 The `investment_services_projects` dataset was filtered below to focus on
information about each investment project from the 2012 fiscal year, and
is referred to as `country_annual_investment_projects`.
```

# Reviewing the text

```
59 ### Investment Projects in `r params$country` in `r params$fy`
60 The `investment_services_projects` dataset was filtered below to focus on
information about each investment project from the `r params$fy` fiscal
year, and is referred to as `country_annual_investment_projects`.
```

# Reviewing the YAML header

```
1 ---
2 title: "Investment Report for Projects in `r params$country`"
3 output:
4 html_document:
5 toc: true
6 toc_float: true
7 date: "`r format(Sys.time(), '%d %B %Y')`"
8 params:
9 country: Indonesia
10 year_start: 2011-07-01
11 year_end: 2012-06-30
12 fy: 2012
13 ---
```

# Knitting the report

```
1 ---
2 title: "Investment Report for Projects in `r params$country`"
3 output:
4 html_document:
5 toc: true
6 toc_float: true
7 date: "`r format(Sys.time(), '%d %B %Y')`"
8 params:
9 country: Turkey
10 year_start: 2012-07-01
11 year_end: 2013-06-30
12 fy: 2013
13 ---
```

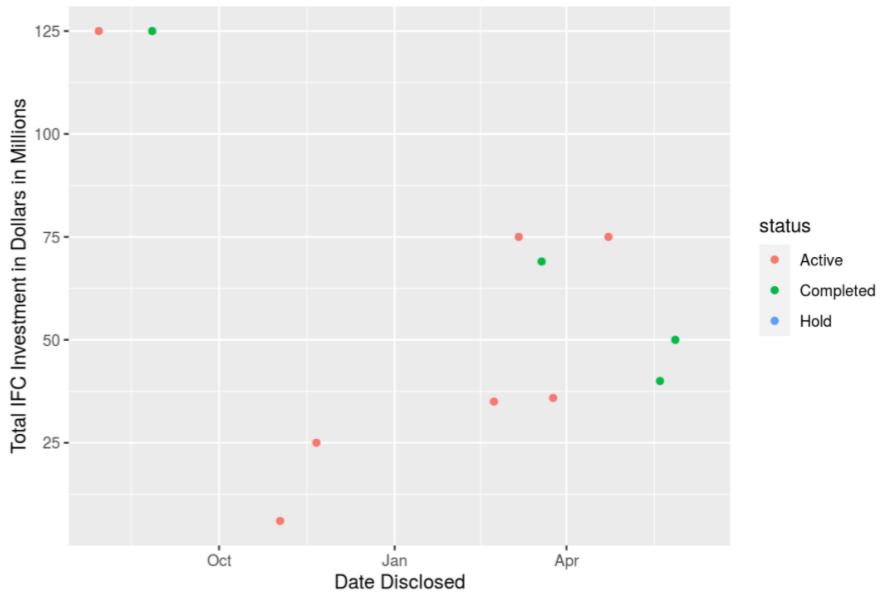
Datasets  
Investment Annual Summary  
Investment Projects from the 2012 to 2018 Fiscal Years  
Investment Projects in Turkey in 2013

## Investment Projects in Turkey in 2013

```
country_annual_investment_projects <- investment_services_projects %>%
 filter(country == params$country) %>%
 filter(date_disclosed >= params$year_start,
 date_disclosed <= params$year_end)

ggplot(country_annual_investment_projects, aes(x = date_disclosed, y = total_investment, color =
status)) +
 geom_point() +
 labs(
 title = "Investment Services Projects",
 x = "Date Disclosed",
 y = "Total IFC Investment in Dollars in Millions"
)
```

Investment Services Projects



# Customizing the report

REPORTING WITH R MARKDOWN



Amy Peterson

Curriculum Manager at DataCamp

# Specifying element style

- ```
15 <style>
16
17
18
19 </style>
```
- color
 - background-color
 - font-family
 - font-size

Document style

```
15 <style>
16 body {
17   color: red;
18 }
19 </style>
```



Investment Report for Projects in Brazil

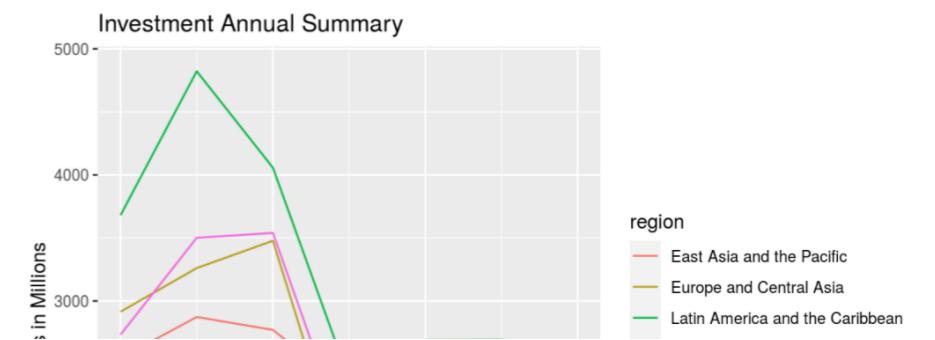
08 May 2020

Datasets

Investment Annual Summary

The `investment_annual_summary` dataset provides a summary of the dollars in millions provided to each region for each fiscal year, from 2012 to 2018.

```
ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions, color = region)) +
  geom_line() +
  labs(
    title = "Investment Annual Summary",
    x = "Fiscal Year",
    y = "Dollars in Millions"
  )
```



Using color hex codes

```
15 <style>
16 body {
17   color: #708090;
18   font-family: Calibri;
19   background-color: #F5F5F5;
20 }
21 </style>
```



Investment Report for Projects in Brazil

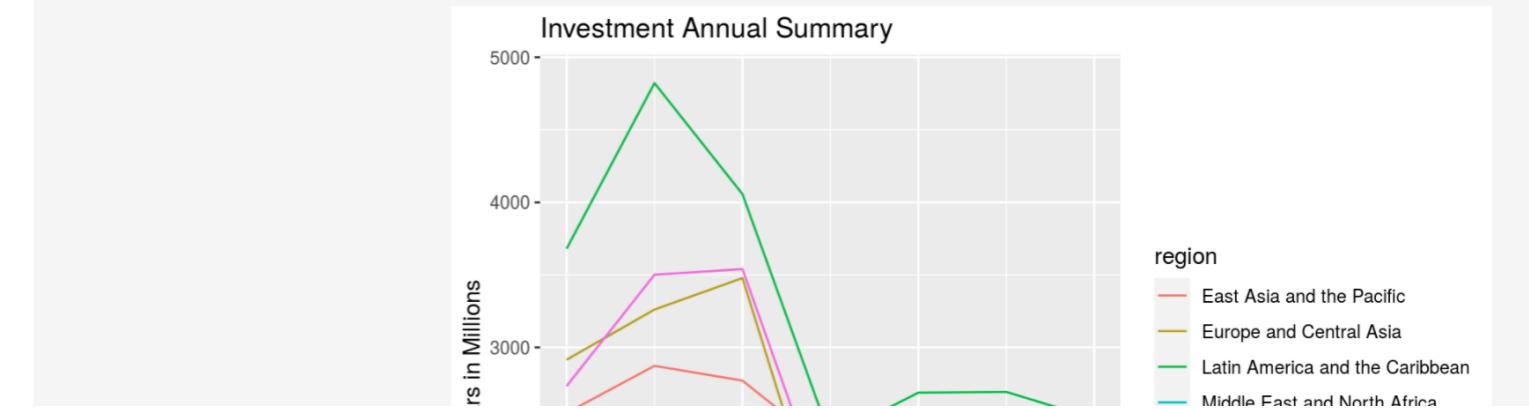
08 May 2020

Datasets

Investment Annual Summary

The `investment_annual_summary` dataset provides a summary of the dollars in millions provided to each region for each fiscal year, from 2012 to 2018.

```
ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions, c
olor = region)) +
  geom_line() +
  labs(
    title = "Investment Annual Summary",
    x = "Fiscal Year",
    y = "Dollars in Millions"
  )
```



Code chunks

```
15 <style>
16 body {
17   color: #708090;
18   font-family: Calibri;
19   background-color: #F5F5F5;
20 }
21 pre {
22   color: #708090;
23   background-color: #F8F8FF;
24 }
25 </style>
```



Investment Report for Projects in Brazil

08 May 2020

Datasets

Investment Annual Summary

The `investment_annual_summary` dataset provides a summary of the dollars in millions provided to each region for each fiscal year, from 2012 to 2018.

```
ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions, color = region)) +
  geom_line() +
  labs(
    title = "Investment Annual Summary",
    x = "Fiscal Year",
    y = "Dollars in Millions"
  )
```



The table of contents

```
15 <style>
16 #TOC {
17   color: #708090;
18   font-family: Calibri;
19   font-size: 16px;
20   border-color: #708090;
21 }
22 body {
23   color: #708090;
24   font-family: Calibri;
25   background-color: #F5F5F5;
26 }
27 pre {
28   color: #708090;
29   background-color: #F8F8FF;
30 }
31 </style>
```

Datasets
Investment Annual Summary
Investment Projects from the 2012 to 2018 Fiscal Years
Investment Projects in Brazil in 2018

Investment Report for Projects in Brazil

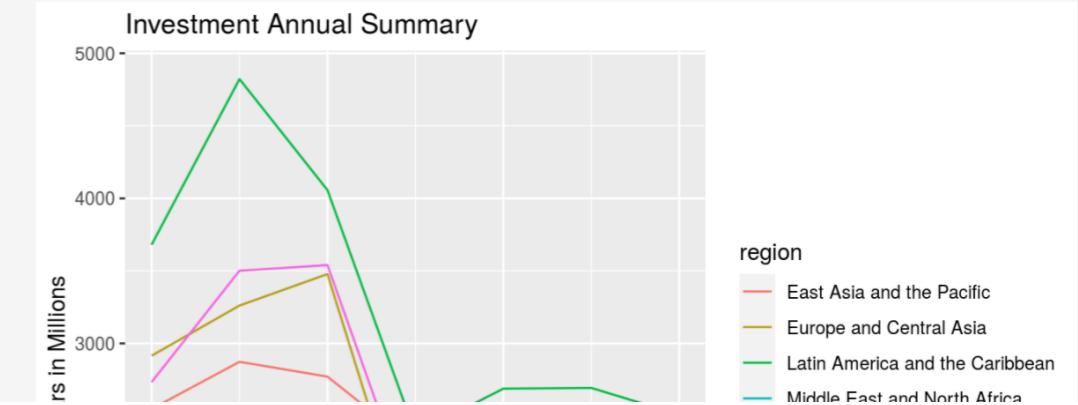
08 May 2020

Datasets

Investment Annual Summary

The `investment_annual_summary` dataset provides a summary of the dollars in millions provided to each region for each fiscal year, from 2012 to 2018.

```
ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions, color = region)) +
  geom_line() +
  labs(
    title = "Investment Annual Summary",
    x = "Fiscal Year",
    y = "Dollars in Millions"
  )
```



The header

```
22 #header {  
23   color: #800000;  
24   background-color: #F5F5F5;  
25   opacity: 0.6;  
26   font-family: Calibri;  
27   font-size: 20px;  
28 }
```

Datasets
Investment Annual Summary
Investment Projects from the 2012 to 2018 Fiscal Years
Investment Projects in Brazil in 2018

Investment Report for Projects in Brazil

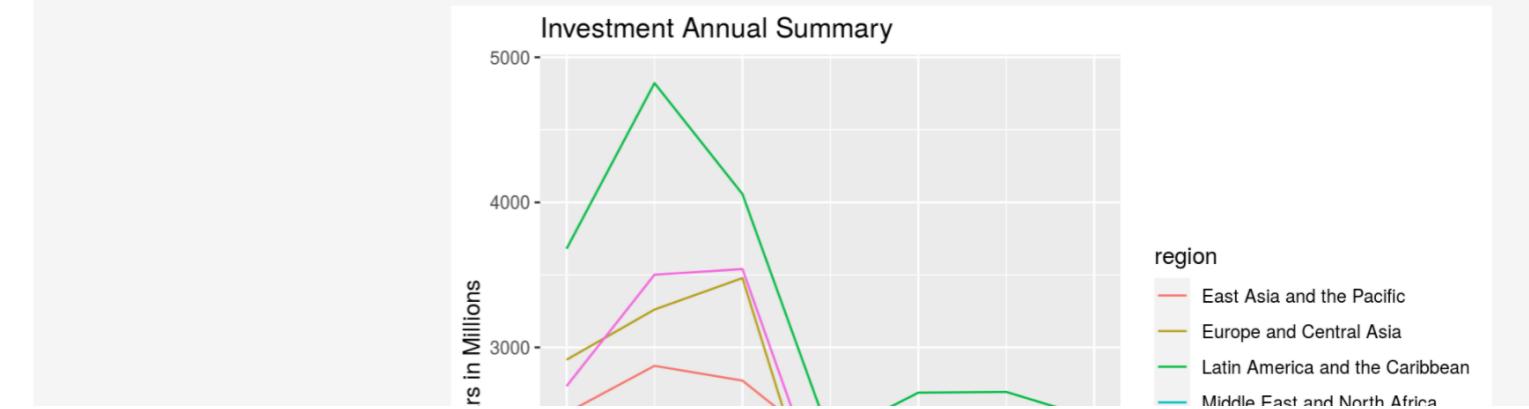
08 May 2020

Datasets

Investment Annual Summary

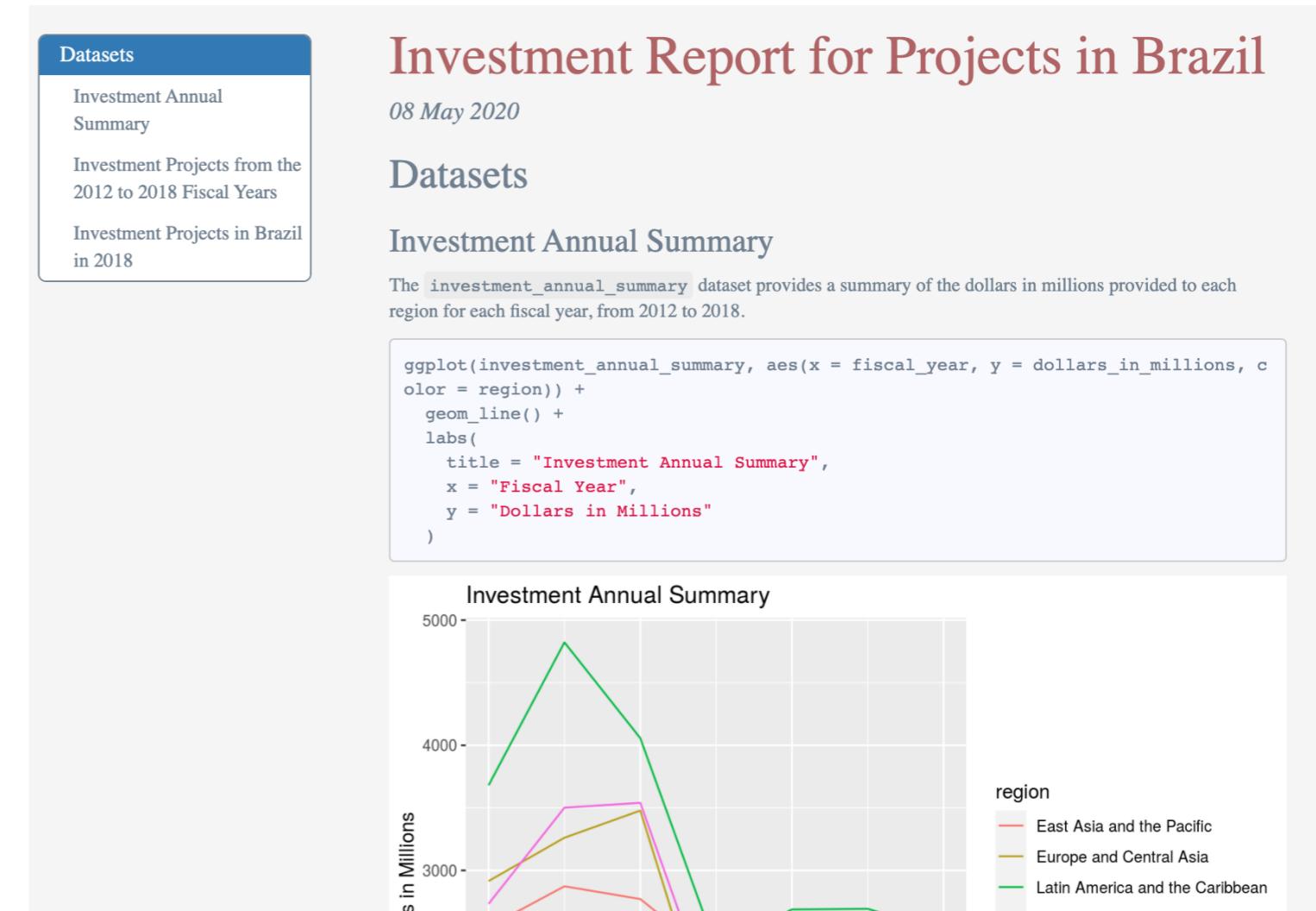
The `investment_annual_summary` dataset provides a summary of the dollars in millions provided to each region for each fiscal year, from 2012 to 2018.

```
ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions, c  
olor = region)) +  
  geom_line() +  
  labs(  
    title = "Investment Annual Summary",  
    x = "Fiscal Year",  
    y = "Dollars in Millions"  
)
```



The title, author, and date

```
22 h1.title {  
23   color: #800000;  
24   background-color: #F5F5F5;  
25   opacity: 0.6;  
26   font-family: Calibri;  
27   font-size: 40px;  
28 }  
29 h4.author {  
30   color: #708090;  
31   font-family: Calibri;  
32 }  
33 h4.date {  
34   color: #708090;  
35   font-family: Calibri;  
36 }
```



CSS file

```
1 ---  
2 title: "Investment Report for Projects in `r params$country`"  
3 output:  
4   html_document:  
5     css: styles.css  
6     toc: true  
7     toc_float: true  
8 date: "`r format(Sys.time(), '%d %B %Y')`"  
9 params:  
10    country: Brazil  
11    year_start: 2017-07-01  
12    year_end: 2018-06-30  
13    fy: 2018  
14 ---
```

investment_report.Rmd	styles.css
	1 #TOC { 2 color: #708090; 3 font-family: Calibri; 4 font-size: 16px; 5 border-color: #708090; 6 } 7 h1.title { 8 color: #F08080; 9 background-color: #F5F5F5; 10 opacity: 0.6; 11 font-family: Calibri; 12 font-size: 20px; 13 } 14 h4.author { 15 color: #708090; 16 font-family: Calibri; 17 background-color: #F5F5F5; 18 } 19 h4.date { 20 color: #708090; 21 font-family: Calibri; 22 background-color: #F5F5F5; 23 } 24 body {