

Analyzing the data

REPORTING WITH R MARKDOWN



Amy Peterson

Head of Core Curriculum at DataCamp

Loading packages

```
1 ---
2 title: "Investment Report"
3 date: "`r format(Sys.time(), '%d %B %Y')`"
4 output: html_document
5 ---
6
7 ```{r data, include = FALSE}
8 library(readr)
9
10 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/
    repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372/
    investment_annual_summary.csv")
11 investment_services_projects <- read_csv("https://assets.datacamp.com/production/
    repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/
    investment_services_projects.csv")
12 ```
13
```

Loading packages

```
1  ---
2  title: "Investment Report"
3  date: "`r format(Sys.time(), '%d %B %Y')`"
4  output: html_document
5  ---
6
7  ```{r data, include = FALSE}
8  library(readr)
9  library(dplyr)
10
11  investment_annual_summary <- read_csv("https://assets.datacamp.com/production/  

repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372/  

investment\_annual\_summary.csv")
12  investment_services_projects <- read_csv("https://assets.datacamp.com/production/  

repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/  

investment\_services\_projects.csv")
13  ```
```

Filtering for projects in Indonesia

```
29 ```{r}
30 indonesia_investment_projects <- investment_services_projects %>%
31   filter(country == "Indonesia")
32
33 indonesia_investment_projects
34 ```
```

```
indonesia_investment_projects <- investment_services_projects %>%
  filter(country == "Indonesia")
```

```
indonesia_investment_projects
```

```
## # A tibble: 38 x 13
##   date_disclosed      country ifc_country_code sector project_name
##   <dtm>              <chr>    <chr>          <chr> <chr>
## 1 2018-04-27 00:00:00 Indone~ INS          other SSIA Ind Est
## 2 2018-04-25 00:00:00 Indone~ INS          Infra~ PT Bajraday~
## 3 2018-01-10 00:00:00 Indone~ INS          Agrib~ Nabati Indo~
## 4 2017-11-14 00:00:00 Indone~ INS          Finan~ MBK Loan 20~
## 5 2017-07-05 00:00:00 Indone~ INS          Finan~ IIF USD Loan
## 6 2017-04-12 00:00:00 Indone~ INS          Finan~ Indosurya F~
## 7 2017-02-21 00:00:00 Indone~ INS          Healt~ Quantum
## 8 2016-12-22 00:00:00 Indone~ INS          Finan~ BTPN MSME L~
## 9 2016-12-13 00:00:00 Indone~ INS          Finan~ Radana Fina~
## 10 2016-09-20 00:00:00 Indone~ INS          Manuf~ PT Aneka Ga~
## # ... with 28 more rows, and 8 more variables: project_number <dbl>,
## #   company_name <chr>, status <chr>, risk_management_investment <dbl>,
## #   guarantee_investment <dbl>, loan_investment <dbl>, equity_investment <dbl>,
## #   total_investment <dbl>
```

Filtering for projects in Indonesia in 2012

```
29 ```{r}
30 indonesia_investment_projects_2012 <- investment_services_projects %>%
31   filter(country == "Indonesia",
32          date_disclosed >= "2011-07-01",
33          date_disclosed <= "2012-06-30")
34
35 indonesia_investment_projects_2012
36 ```
```

```
indonesia_investment_projects_2012 <- investment_services_projects %>%
  filter(country == "Indonesia",
         date_disclosed >= "2011-07-01",
         date_disclosed <= "2012-06-30")

indonesia_investment_projects_2012
```

```
## # A tibble: 6 x 13
##   date_disclosed      country ifc_country_code sector project_name
##   <dtm>              <chr>    <chr>          <chr>  <chr>
## 1 2012-04-27 00:00:00 Indone~ INS           Agrib~ FHP Indones~
## 2 2012-04-03 00:00:00 Indone~ INS           Finan~ LMS Toll Pr~
## 3 2012-02-27 00:00:00 Indone~ INS           Finan~ CIMB Niaga ~
## 4 2011-12-16 00:00:00 Indone~ INS           Oil, ~ BTPN Loan II
## 5 2011-11-17 00:00:00 Indone~ INS           Infra~ Medco Power~
## 6 2011-10-03 00:00:00 Indone~ INS           Finan~ Wintermar G~
## # ... with 8 more variables: project_number <dbl>, company_name <chr>,
## #   status <chr>, risk_management_investment <dbl>, guarantee_investment <dbl>,
## #   loan_investment <dbl>, equity_investment <dbl>, total_investment <dbl>
```

Including code results in text

```
29   ```{r}
30   indonesia_investment_projects_2012 <- investment_services_projects %>%
31     filter(country == "Indonesia",
32            date_disclosed >= "2011-07-01",
33            date_disclosed <= "2012-06-30")
34
35   indonesia_investment_projects_2012_total <- indonesia_investment_projects_2012 %>%
36     summarize(sum_total_investment = sum(total_investment, na.rm = TRUE))
37   ```
```

Including code results in text

```
29 ```{r}
30 indonesia_investment_projects_2012 <- investment_services_projects %>%
31   filter(country == "Indonesia",
32          date_disclosed >= "2011-07-01",
33          date_disclosed <= "2012-06-30")
34
35 indonesia_investment_projects_2012_total <- indonesia_investment_projects_2012 %>%
36   summarize(sum_total_investment = sum(total_investment, na.rm = TRUE))
37 ```
38
39 The total investment amount of all projects in Indonesia in the 2012 fiscal year
40 was `r indonesia_investment_projects_2012_total` million dollars.
```

```
indonesia_investment_projects_2012 <- investment_services_projects %>%
  filter(country == "Indonesia",
         date_disclosed >= "2011-07-01",
         date_disclosed <= "2012-06-30")

indonesia_investment_projects_2012_total <- indonesia_investment_projects
_2012 %>%
  summarize(sum_total_investment = sum(total_investment, na.rm = TRUE))
```

The total investment amount for all projects in Indonesia in the 2012 fiscal year was 435 million dollars.

Multiple code chunks

```

25   ### Investment Projects in Indonesia
26
27   The `investment_services_projects` dataset provides information about each investment
    project from 2012 to 2018. Information listed includes the project name, company name,
    sector, project status, and investment amounts.
28
29   ```{r}
30   indonesia_investment_projects_2012 <- investment_services_projects %>%
31     filter(country == "Indonesia",
32            date_disclosed >= "2011-07-01",
33            date_disclosed <= "2012-06-30")
34
35   indonesia_investment_projects_2012
36   ```
37
38   ### Investment Projects in Indonesia in 2012
39   ```{r}
40   indonesia_investment_projects_2012 <- investment_services_projects %>%
41     filter(country == "Indonesia",
42            date_disclosed >= "2011-07-01",
43            date_disclosed <= "2012-06-30")

```


Naming code chunks

```
25   ### Investment Projects in Indonesia
26
27   The `investment_services_projects` dataset provides information about each investment
    project from 2012 to 2018. Information listed includes the project name, company name,
    sector, project status, and investment amounts.
28
29   ```{r indonesia-investment-projects}
30   indonesia_investment_projects_2012 <- investment_services_projects %>%
31     filter(country == "Indonesia",
32            |
33            |
34            |
35            |
36            date_disclosed >= "2011-07-01",
37            |
38            |
39            |
40            |
41            date_disclosed <= "2012-06-30")
42
43   ```
```

```
38   ### Investment Projects in Indonesia in 2012
39   ```{r indonesia-investment-projects-2012}
40   indonesia_investment_projects_2012 <- investment_services_projects %>%
41     filter(country == "Indonesia",
42            |
43            |
44            |
45            |
46            date_disclosed >= "2011-07-01",
47            |
48            |
49            |
50            |
51            date_disclosed <= "2012-06-30")
```

Let's practice!
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Adding plots

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Amy Peterson

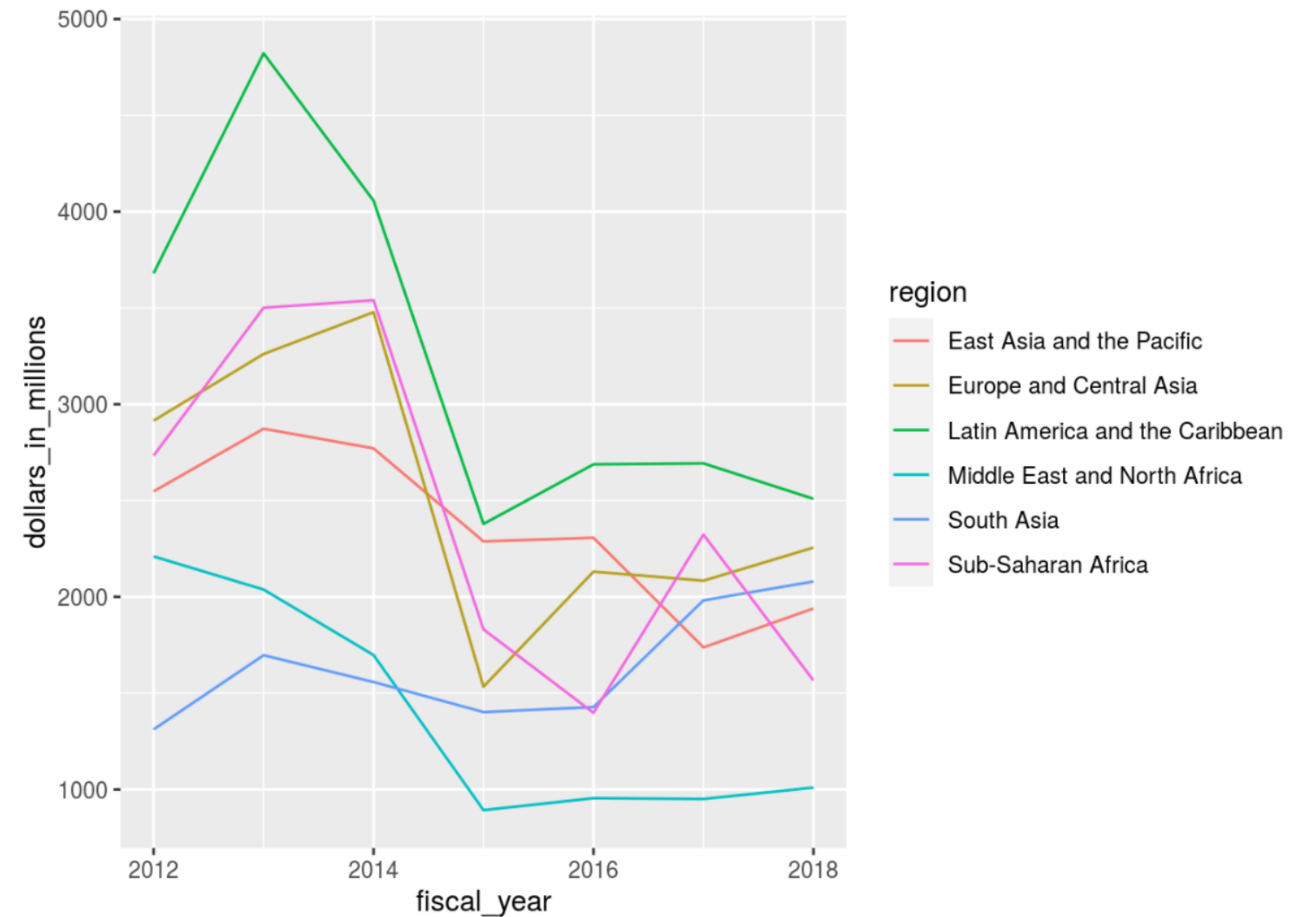
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Loading ggplot2

```
1  ---
2  title: "Investment Report"
3  date: "`r format(Sys.time(), '%d %B %Y')`"
4  output: html_document
5  ---
6
7  ```{r data, include = FALSE}
8  library(readr)
9  library(dplyr)
10 library(ggplot2)
11
12 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372/
investment\_annual\_summary.csv")
13 investment_services_projects <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/
investment\_services\_projects.csv")
14 ```
```

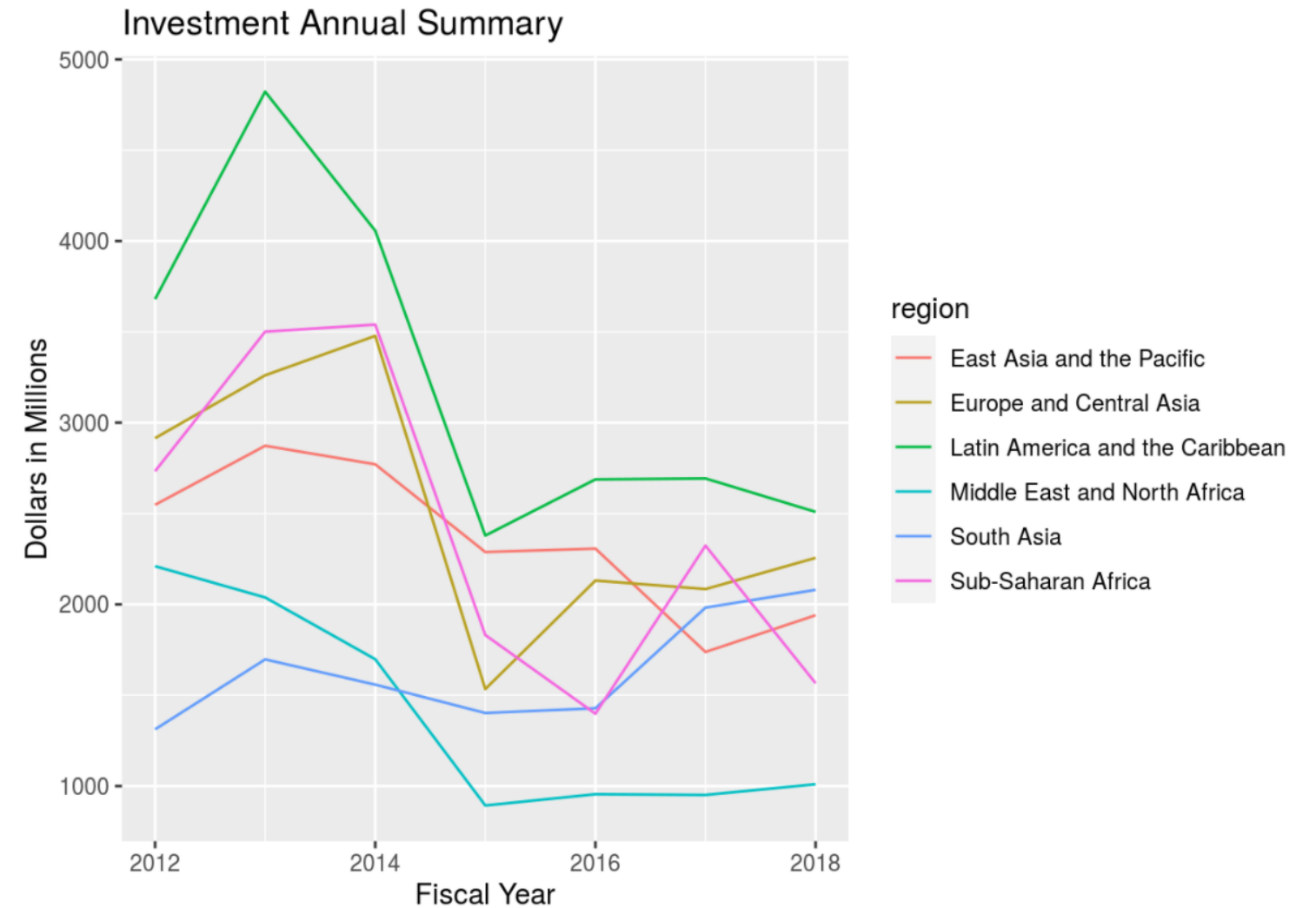
Visualizing the annual summary

```
21 ```{r investment-annual-summary}
22 ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions,
23   color = region)) +
24   geom_line()
```



Adding plot labels

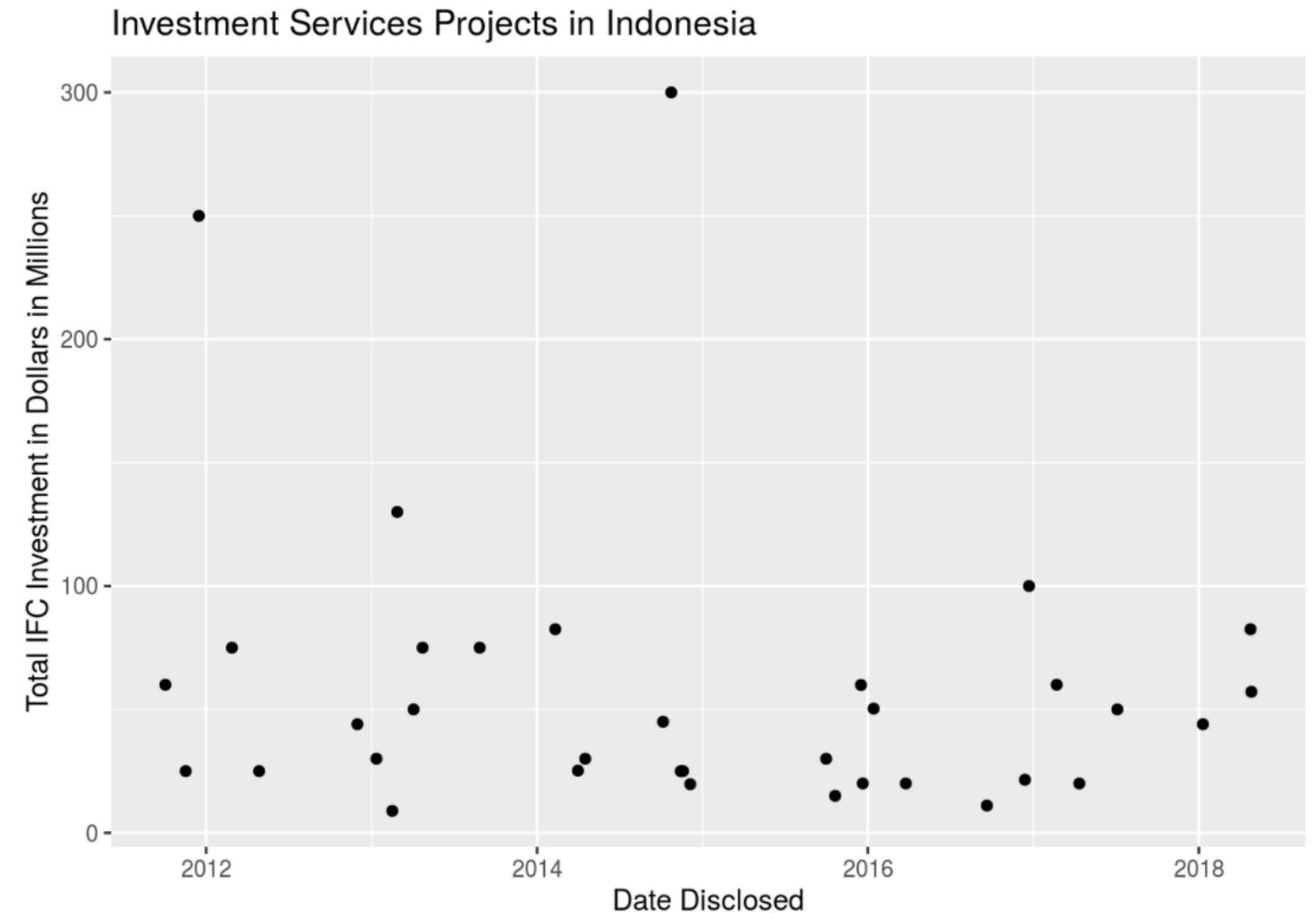
```
21 ```{r investment-annual-summary}
22 ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions,
23   color = region)) +
24   geom_line() +
25   labs(
26     title = "Investment Annual Summary",
27     x = "Fiscal Year",
28     y = "Dollars in Millions"
29   )
30 ```
```



Visualizing projects in Indonesia

```
35 ```{r indonesia-investment-projects}
36 indonesia_investment_projects <- investment_services_projects %>%
37   filter(country == "Indonesia")
38
39 ggplot(indonesia_investment_projects, aes(x = date_disclosed, y =
40   total_investment)) +
41   geom_point() +
42   labs(
43     title = "Investment Services Projects in Indonesia",
44     x = "Date Disclosed",
45     y = "Total IFC Investment in Dollars in Millions"
46   )
47 ```
```

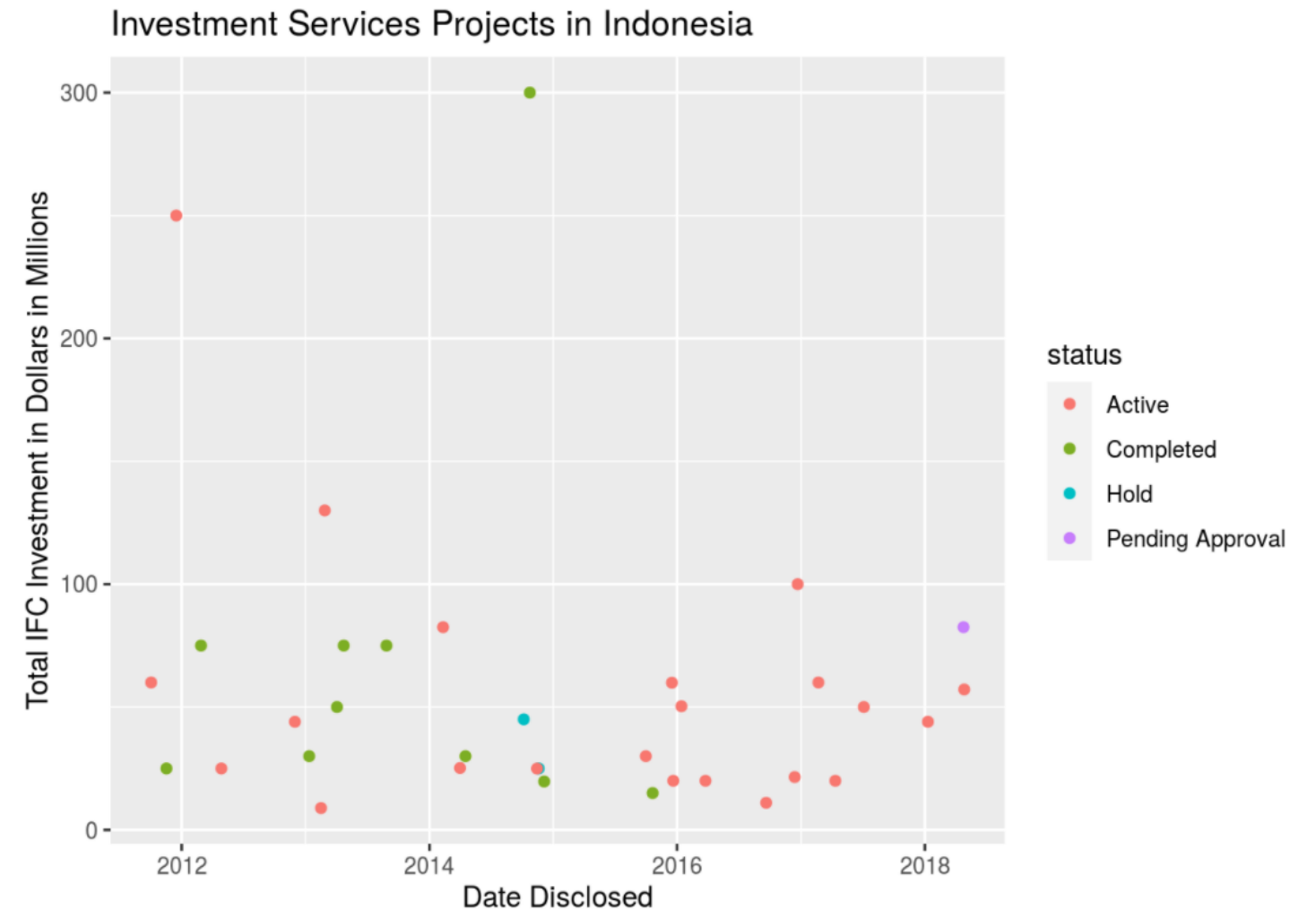
Warning: Removed 3 rows containing missing values (geom_point).



Visualizing project status

```
35 ```{r indonesia-investment-projects}
36 indonesia_investment_projects <- investment_services_projects %>%
37   filter(country == "Indonesia")
38
39 ggplot(indonesia_investment_projects, aes(x = date_disclosed, y =
40   total_investment, color = status)) +
41   geom_point() +
42   labs(
43     title = "Investment Services Projects in Indonesia",
44     x = "Date Disclosed",
45     y = "Total IFC Investment in Dollars in Millions"
46   )
47 ```
```

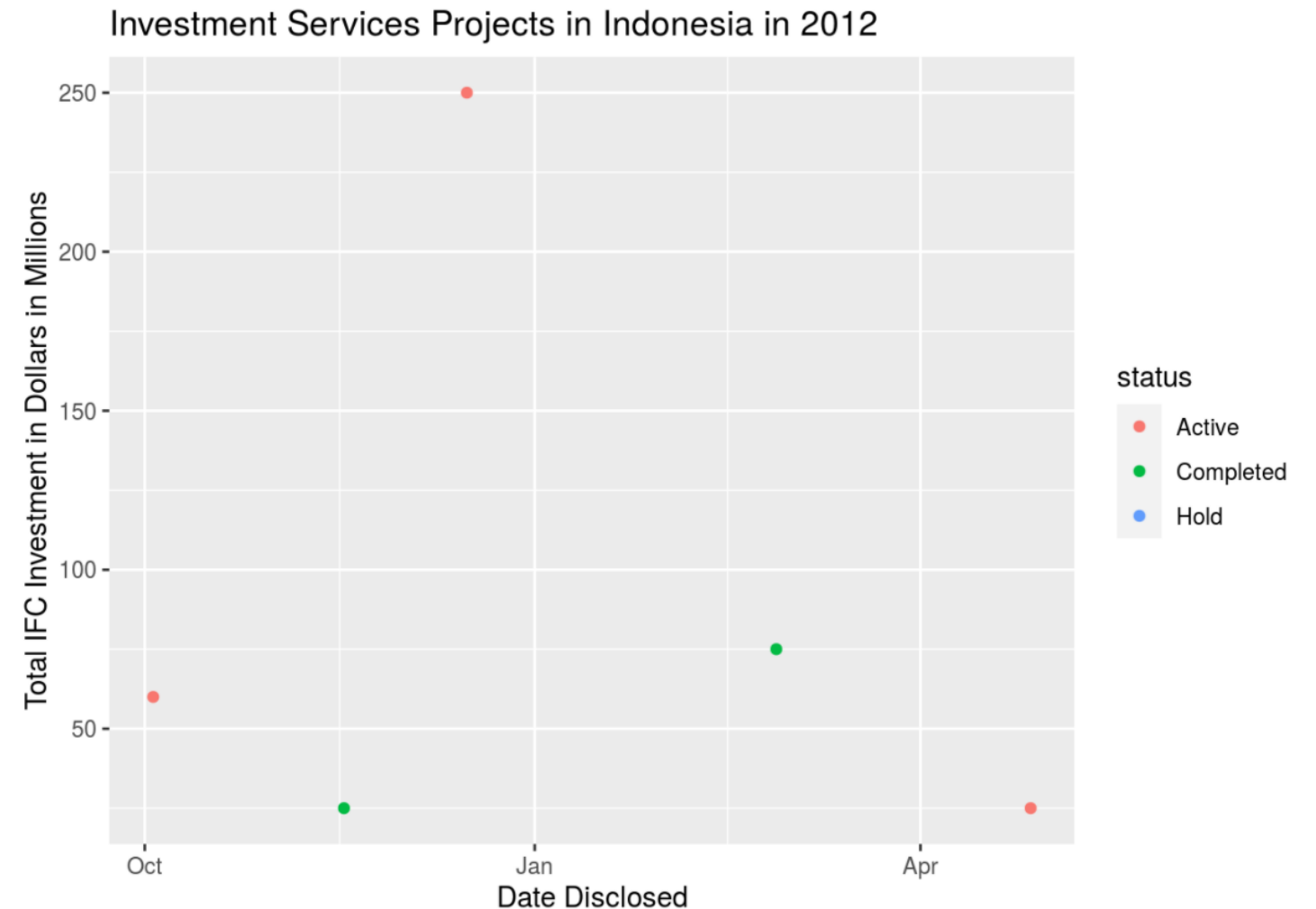
Warning: Removed 3 rows containing missing values (geom_point).



Visualizing projects in Indonesia in 2012

```
50 ```{r indonesia-investment-projects-2012}
51 indonesia_investment_projects_2012 <- investment_services_projects %>%
52   filter(country == "Indonesia",
53          date_disclosed >= "2011-07-01",
54          date_disclosed <= "2012-06-30")
55
56 ggplot(indonesia_investment_projects_2012, aes(x = date_disclosed, y =
57 total_investment, color = status)) +
58   geom_point() +
59   labs(
60     title = "Investment Services Projects in Indonesia in 2012",
61     x = "Date Disclosed",
62     y = "Total IFC Investment in Dollars in Millions"
63   )
64 ```
```

Warning: Removed 1 rows containing missing values (geom_point).



Missing values

```
indonesia_investment_projects_2012
```

```
# A tibble: 6 x 7
  project_name      status risk_manage... guarantee_inv... loan_investment equity_investment total_investment
  <chr>            <chr>      <dbl>         <dbl>         <dbl>         <dbl>         <dbl>
1 FHP Indonesia I  Active      NA           NA           NA           25           25
2 LMS Toll Project Hold      NA           NA           NA           NA           NA
3 CIMB Niaga Sr.   Completed  NA           NA           75           NA           75
4 BTPN Loan II     Active      NA           NA           250          NA           250
5 Medco Power 2011 Completed  NA           NA           NA           25           25
6 Wintermar Group Active      NA           NA           60           NA           60
```

Let's practice!
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Plot options

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Figure dimensions

- `fig.width`
- `fig.height`

Figure dimensions

```
26 ```{r investment-annual-summary, fig.width = 5, fig.height = 3}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
```

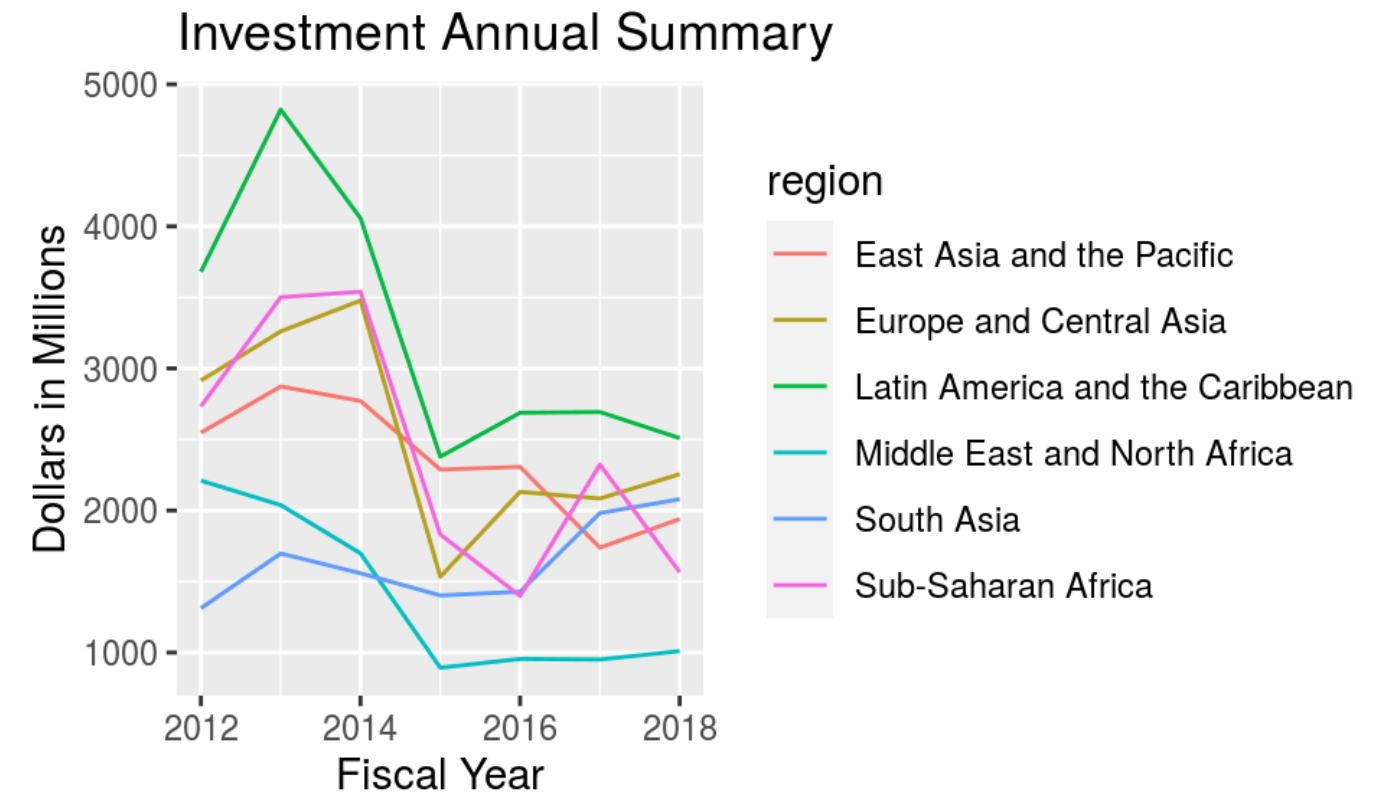
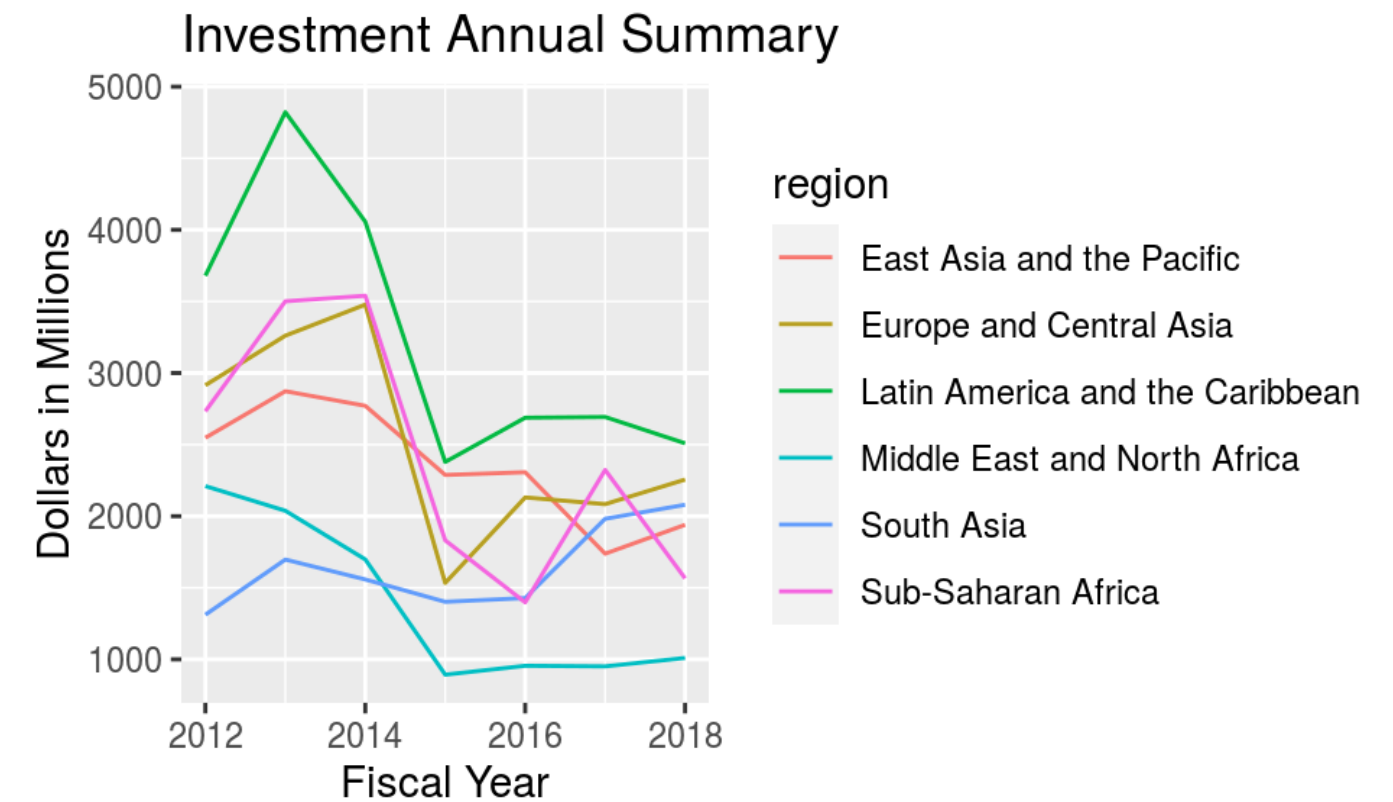


Figure dimensions

```
26 ```{r investment-annual-summary, fig.dim = c(5, 3)}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
```



Output dimensions

- `out.width`
- `out.height`

Output dimensions

```
26 ```{r investment-annual-summary, out.width = '50%'}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
```

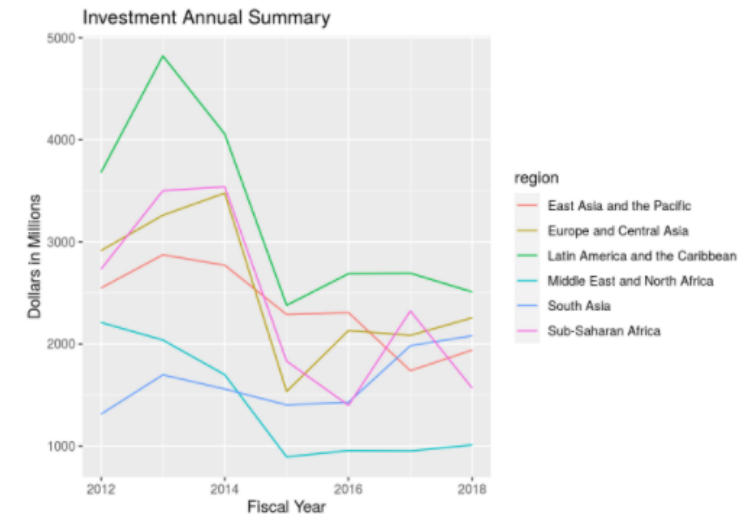


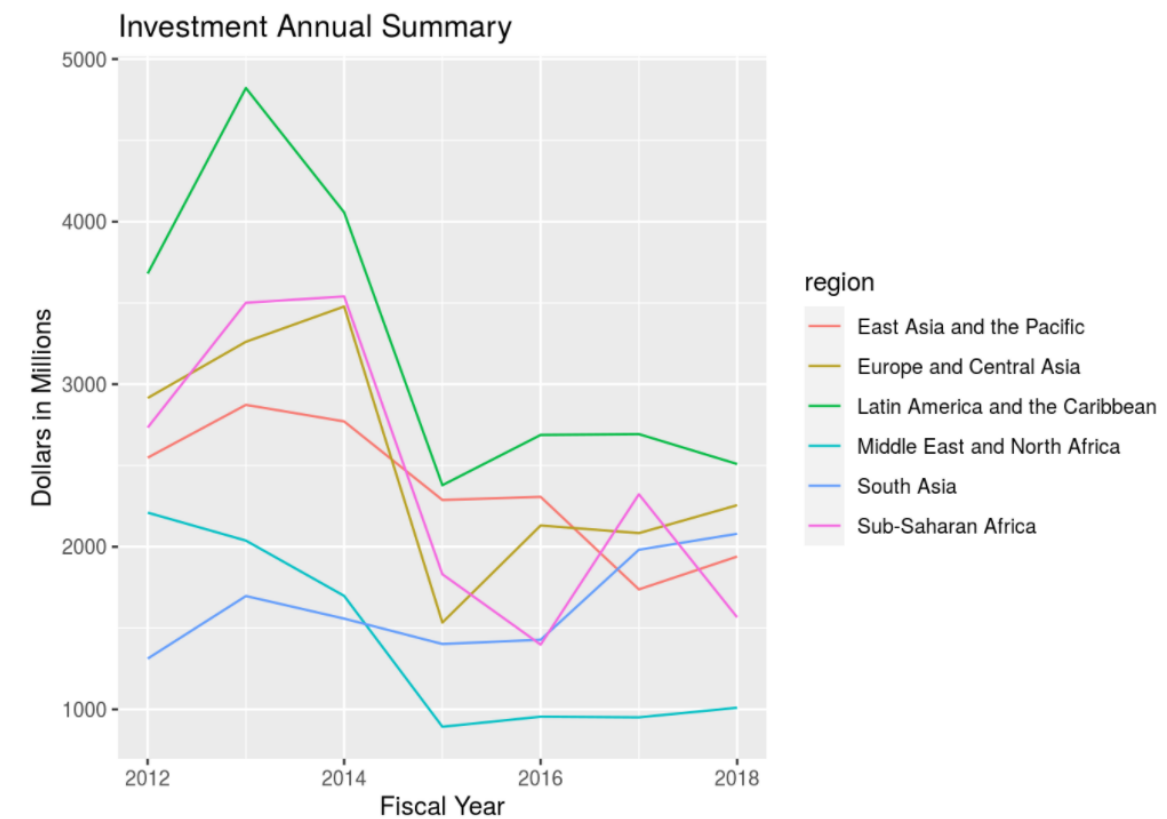
Figure alignment

- `fig.align`
 - `'left'`
 - `'right'`
 - `'center'`

Figure alignment

```
26 ```{r investment-annual-summary, out.width = '80%', fig.align = 'left'}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
```

```
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"
  )
```



Local vs. global options

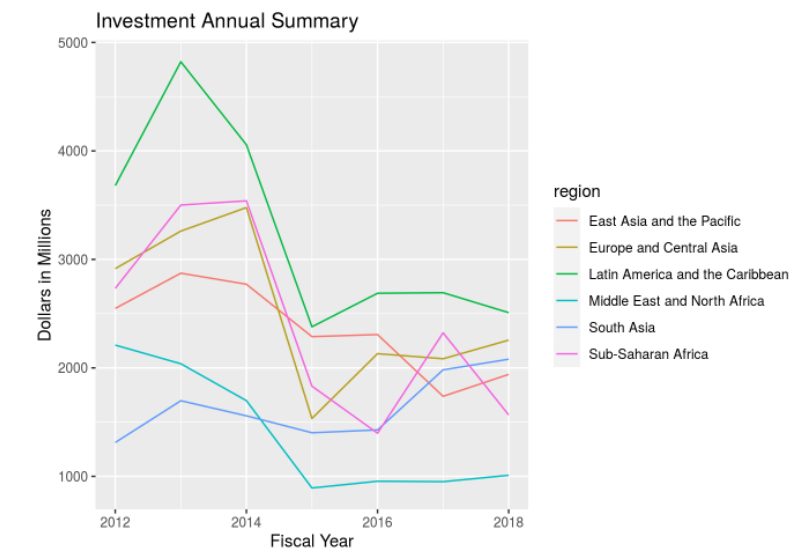
```
26 ```{r investment-annual-summary, fig.align = 'center'}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
36 ### Investment Projects in Indonesia
37
38 The `investment_services_projects` dataset provides information about each
39 investment project from 2012 to 2018. Information listed includes the project
40 name, company name, sector, project status, and investment amounts.
41 ```{r indonesia-investment-projects, fig.align = 'center'}
42 indonesia_investment_projects <- investment_services_projects %>%
43   filter(country == "Indonesia")
44   ggplot(indonesia_investment_projects, aes(x = date_disclosed, y =
45     total_investment, color = status)) +
46     geom_point() +
47     labs(
48       title = "Investment Services Projects in Indonesia",
49       x = "Date Disclosed",
50       y = "Total IFC Investment in Dollars in Millions"
51     )
52 ```
```

```
7 ```{r setup, include = FALSE}
8 knitr::opts_chunk$set(fig.align = 'center', echo = TRUE)
9 ```
```

Setting options globally

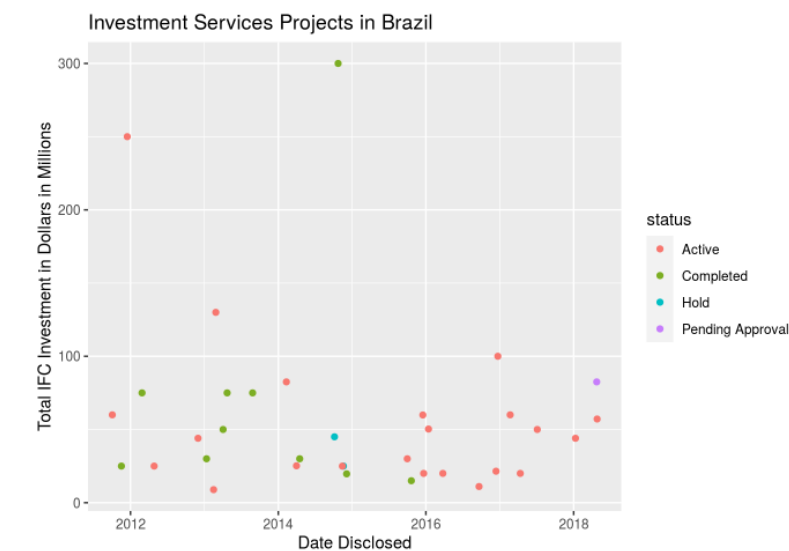
```
1 ---
2 title: "Investment Report"
3 date: "`r format(Sys.time(), '%d %B %Y')`"
4 output: html_document
5 ---
6
7 ```{r setup, include = FALSE}
8 knitr::opts_chunk$set(fig.align = 'left', echo = TRUE)
9 ```
```

Investment Annual Summary



Investment Projects in Indonesia

Warning: Removed 3 rows containing missing values (geom_point).



Adding captions

```
26 ```{r investment-annual-summary, out.width = '85%', fig.cap = 'Figure 1.1 The
27 Investment Annual Summary for each region for the 2012 to 2018 fiscal years.}
28 ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions,
29 color = region)) +
30   geom_line() +
31   labs(
32     title = "Investment Annual Summary",
33     x = "Fiscal Year",
34     y = "Dollars in Millions"
35   )
36 ```
```

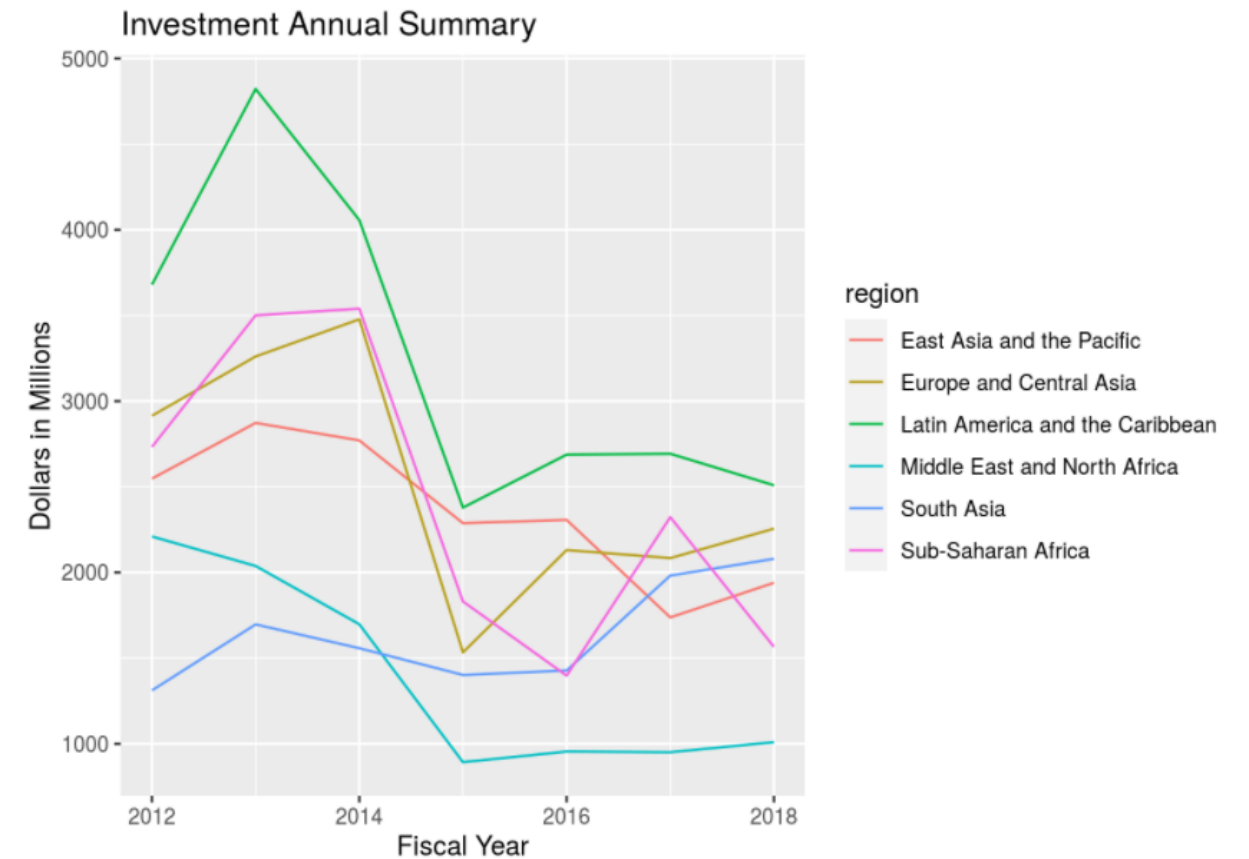


Figure 1.1 The Investment Annual Summary for each region for the 2012 to 2018 fiscal years.

Let's practice!
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