

Introduction to R Markdown

REPORTING WITH R MARKDOWN



Amy Peterson

Curriculum Manager at DataCamp

R Markdown



Reproducible results



	fiscal_year	region	dollars_in_millions
1	2012	East Asia and the Pacific	2548
2	2012	Europe and Central Asia	2915
		Latin America and the Caribbean	3680
		Middle East and North Africa	2210
		South Asia	1312
		Sub-Saharan Africa	2733
		East Asia and the Pacific	2873
		Europe and Central Asia	3261
		Latin America and the Caribbean	4822
		Middle East and North Africa	2038
11	2013	South Asia	1697

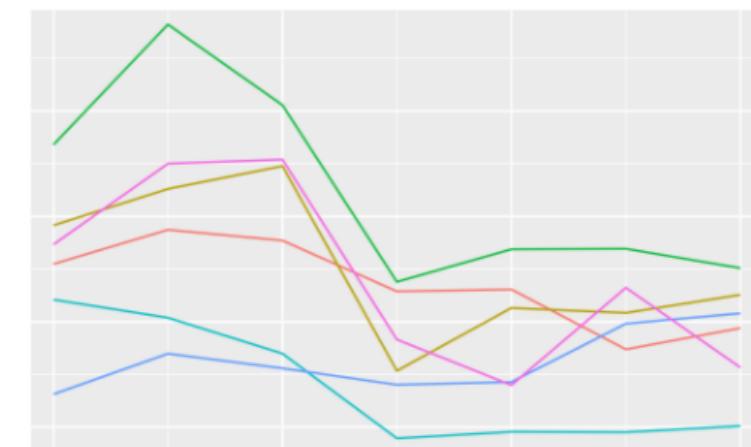
Showing 1 to 12 of 42 entries, 3 total columns

Reproducible results



	fiscal_year	region	dollars_in_millions
1	2012	East Asia and the Pacific	2548
2	2012	Europe and Central Asia	2915
		Latin America and the Caribbean	3680
		Middle East and North Africa	2210
		South Asia	1312
		Sub-Saharan Africa	2733
		East Asia and the Pacific	2873
		Europe and Central Asia	3261
		Latin America and the Caribbean	4822
		Middle East and North Africa	2038
10	2013	South Asia	1697
11	2013		

Showing 1 to 12 of 42 entries, 3 total columns

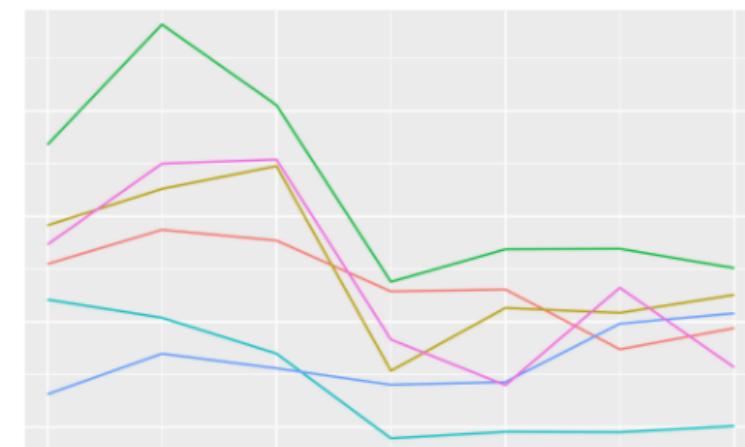


Reproducible results



	fiscal_year	region	dollars_in_millions
1	2012	East Asia and the Pacific	2548
2	2012	Europe and Central Asia	2915
		Latin America and the Caribbean	3680
		Middle East and North Africa	2210
		South Asia	1312
		Sub-Saharan Africa	2733
		East Asia and the Pacific	2873
		Europe and Central Asia	3261
		Latin America and the Caribbean	4822
		Middle East and North Africa	2038
11	2013	South Asia	1697

Showing 1 to 12 of 42 entries, 3 total columns

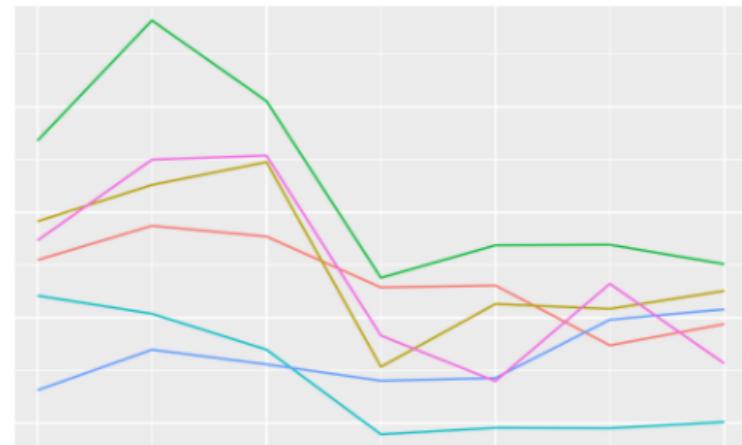


Reproducible results



	fiscal_year	region	dollars_in_millions
1	2012	East Asia and the Pacific	2548
2	2012	Europe and Central Asia	2915
		Latin America and the Caribbean	3680
		Middle East and North Africa	2210
		South Asia	1312
		Sub-Saharan Africa	2733
		East Asia and the Pacific	2873
		Europe and Central Asia	3261
		Latin America and the Caribbean	4822
		Middle East and North Africa	2038
11	2013	South Asia	1697

Showing 1 to 12 of 42 entries, 3 total columns



R Markdown elements

Code

```
```{r}  
investment_annual_summary
```
```

Metadata

```
---  
title: "Investment Report"  
output: html_document  
---
```

Text

```
## 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.

R Markdown file

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 output: html_document  
4 ---  
5  
6 ```{r data, include = FALSE}  
7 library(readr)  
8  
9 investment_annual_summary <- read_csv("https://assets  
 .datacamp.com/production/repositories/5756/datasets  
 /d0251f26117bbcf0ea96ac276555b9003f4f7372  
 /investment_annual_summary.csv")  
10 ```  
11  
12 ### Investment Annual Summary  
13  
14 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.  
15  
16 ```{r}  
17 investment_annual_summary  
18 ...
```

YAML header

text

code chunk

Knit

investment_report.Rmd



HTML Viewer ↗

```
1 ---
2 title: "Investment Report"
3 output: html_document
4 ---
5
6 ```{r data, include = FALSE}
7 library(readr)
8
9 investment_annual_summary <- read_csv("https://assets
10 .datacamp.com/production/repositories/5756/datasets
11 /d0251f26117bbcf0ea96ac276555b9003f4f7372
12 /investment_annual_summary.csv")
13 ...
14
15 #### Investment Annual Summary
16
17 The `investment_annual_summary` dataset provides a
18 summary of the dollars in millions provided to each
19 region for each fiscal year, from 2012 to 2018.
```

Investment Report

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.

`investment_annual_summary`

```
## # A tibble: 42 x 3
##   fiscal_year region          dollars_in_millions
##       <dbl> <chr>                    <dbl>
## 1      2012 East Asia and the Pacific     2548
## 2      2012 Europe and Central Asia      2915
## 3      2012 Latin America and the Caribbean 3680
## 4      2012 Middle East and North Africa    2210
## 5      2012 South Asia                  1312
## 6      2012 Sub-Saharan Africa            2733
## 7      2013 East Asia and the Pacific     2873
## 8      2013 Europe and Central Asia      3261
## 9      2013 Latin America and the Caribbean 4822
## 10     2013 Middle East and North Africa    2038
## # ... with 32 more rows
```

Course overview

Elements of an R Markdown document

```
---
```

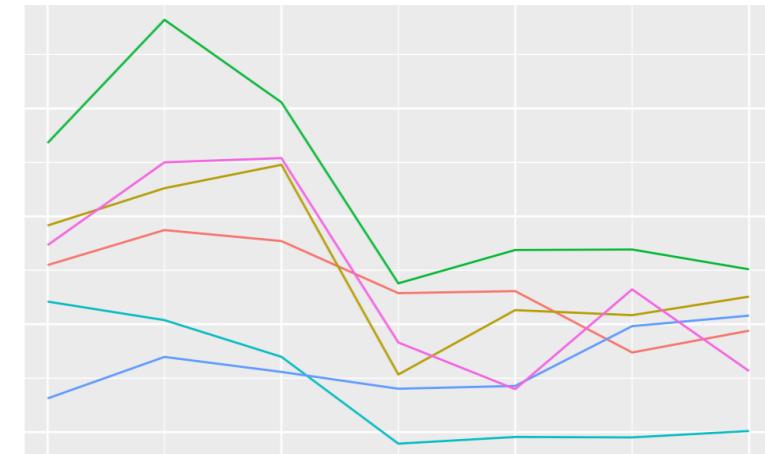
```
title: "Investment Report"
output: html_document
```

```
---
```

Organize and improve a report



Add analyses and plots



Customize fonts and colors



Investment annual summary

```
investment_annual_summary
```

```
# A tibble: 42 x 3
  fiscal_year region          dollars_in_millions
  <dbl> <chr>                      <dbl>
1 2012 East Asia and the Pacific      2548
2 2012 Europe and Central Asia        2915
3 2012 Latin America and the Caribbean 3680
4 2012 Middle East and North Africa   2210
5 2012 South Asia                     1312
# ... with 37 more rows
```

Investment services projects

investment_services_projects

```
# A tibble: 1,838 x 13
  date_disclosed      country ifc_country_code sector project_name project_number
  <dttm>              <chr>    <chr>          <chr>    <chr>          <dbl>
1 2018-06-29 00:00:00 India     IND             Manuf... Camlin           39750
2 2018-06-28 00:00:00 Latin ... LAC             Funds   Riverwood I...        41148
3 2018-06-26 00:00:00 Zambia   ZAM             Finan... Stanbic Ban...        38700
4 2018-06-22 00:00:00 Thaila... THL             Finan... Roojai           40653
5 2018-06-22 00:00:00 China    CHA             Agrib... Chenguang B...        40616
# ... with 1,833 more rows, and 7 more variables: company_name <chr>, status <chr>,
# risk_management_investment <dbl>, guarantee_investment <dbl>, loan_investment <dbl>,
# equity_investment <dbl>, total_investment <dbl>
```

Code chunks

investment_report.Rmd



```
1 ---  
2 title: "Investment Report"  
3 output: html_document  
4 ---  
5  
6 ```{r data, include = FALSE}  
7 library(readr)  
8  
9 investment_annual_summary <- read_csv("https://assets  
.datacamp.com/production/repositories/5756/datasets  
/d0251f26117bbcf0ea96ac276555b9003f4f7372  
/investment_annual_summary.csv")  
10 ````  
11  
12 ### Investment Annual Summary  
13  
14 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.  
15  
16 ```{r}  
17 investment_annual_summary  
18 ````
```

Adding code chunks

```
```{r}
```

```
...
```

# Adding code chunks

```
```{r}  
...  
...  
backticks
```

Adding code chunks

```
```{r}  
...
```
```

curly braces



Adding code chunks

```
```{r}  
investment_annual_summary
```
```

Adding code chunks

```
investment_annual_summary
```

```
## # A tibble: 42 x 3
##   fiscal_year region          dollars_in_millions
##   <dbl> <chr>                    <dbl>
## 1 2012 East Asia and the Pacific      2548
## 2 2012 Europe and Central Asia       2915
## 3 2012 Latin America and the Caribbean 3680
## 4 2012 Middle East and North Africa   2210
## 5 2012 South Asia                   1312
## 6 2012 Sub-Saharan Africa            2733
## 7 2013 East Asia and the Pacific      2873
## 8 2013 Europe and Central Asia       3261
## 9 2013 Latin America and the Caribbean 4822
## 10 2013 Middle East and North Africa  2038
## # ... with 32 more rows
```

Let's practice!

REPORTING WITH R MARKDOWN

Adding and formatting text

REPORTING WITH R MARKDOWN



Amy Peterson

Curriculum Manager at DataCamp

Including text in a report

HTML Viewer ↗

Investment Report

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.

```
investment_annual_summary
```

```
## # A tibble: 42 x 3
##   fiscal_year region          dollars_in_millions
##   <dbl> <chr>                    <dbl>
## 1 2012 East Asia and the Pacific     2548
## 2 2012 Europe and Central Asia      2915
## 3 2012 Latin America and the Caribbean 3680
## 4 2012 Middle East and North Africa  2210
## 5 2012 South Asia                  1312
## 6 2012 Sub-Saharan Africa           2733
## 7 2013 East Asia and the Pacific     2873
## 8 2013 Europe and Central Asia      3261
## 9 2013 Latin America and the Caribbean 4822
## 10 2013 Middle East and North Africa  2038
## # ... with 32 more rows
```

Investment Services Projects

Headers

document.Rmd

```
1 ---  
2 title: "Title"  
3 output: html_document  
4 ---  
5  
6 # Header 1  
7 ## Header 2  
8 ### Header 3  
9  
10  
11  
12
```

HTML Viewer ↗

Title
Header
Header 2
Header 3

Adding headers

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 output: html_document  
4 ---  
5  
6 ```{r data, include = FALSE}  
7 library(readr)  
8  
9 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/  
/repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372  
/investment_annual_summary.csv")  
10 investment_services_projects <- read_csv("https://assets.datacamp.com/production/  
/repositories/5756/datasets/78b002735b6f620df7f2767e63b76aaca317bf8d  
/investment_services_projects.csv")  
11 ```  
12  
13 ## Datasets  
14  
15 ### Investment Annual Summary  
16  
17 ```{r}  
18 investment_annual_summary  
19 ```  
20  
21 ### Investment Services Projects  
22  
23 ```{r}  
24 investment_services_projects  
25 ```
```

HTML Viewer

Investment Report

Datasets

Investment Annual Summary

investment_annual_summary

```
## # A tibble: 42 x 3  
##   fiscal_year region          dollars_in_millions  
##   <dbl> <chr>  
## 1 2012 East Asia and the Pacific      2548  
## 2 2012 Europe and Central Asia       2915  
## 3 2012 Latin America and the Caribbean 3680  
## 4 2012 Middle East and North Africa    2210  
## 5 2012 South Asia                   1312  
## 6 2012 Sub-Saharan Africa             2733  
## 7 2013 East Asia and the Pacific      2873  
## 8 2013 Europe and Central Asia       3261  
## 9 2013 Latin America and the Caribbean 4822  
## 10 2013 Middle East and North Africa   2038  
## # ... with 32 more rows
```

Investment Services Projects

investment_services_projects

```
## # A tibble: 1,815 x 13
```

Sentences

```
investment_report.Rmd    
1 ---  
2 title: "Investment Report"  
3 output: html_document  
4 ---  
5  
6 ```{r data, include = FALSE}  
7 library(readr)  
8  
9 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/  
/repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372  
/investment_annual_summary.csv")  
10 investment_services_projects <- read_csv("https://assets.datacamp.com/production/  
/repositories/5756/datasets/78b002735b6f620df7f2767e63b76aaca317bf8d  
/investment_services_projects.csv")  
11 ...  
12  
13 ## Datasets  
14  
15 ### Investment Annual Summary  
16  
17 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.  
18  
19 ```{r}  
20 investment_annual_summary  
21 ...  
22  
23 ### Investment Services Projects  
24  
25 The `investment_services_projects` dataset provides information about each investment  
project from the 2012 to 2018 fiscal years. Information listed includes the project name,  
company name, sector, project status, and investment amounts.  
26  
27 ```{r}  
28 investment_services_projects  
29 ...  
30
```

Adding sentences

```
13 ## Datasets
14
15 ### Investment Annual Summary
16
17 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.
18
19 ```{r}
20 investment_annual_summary
21 ```
```

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.

```
investment_annual_summary
```

| | | dollars_in_millions |
|----------------------------|--------------------------------------|---------------------|
| | fiscal_year | <dbl> |
| ## 1 | 2012 East Asia and the Pacific | 2548 |
| ## 2 | 2012 Europe and Central Asia | 2915 |
| ## 3 | 2012 Latin America and the Caribbean | 3680 |
| ## 4 | 2012 Middle East and North Africa | 2210 |
| ## 5 | 2012 South Asia | 1312 |
| ## 6 | 2012 Sub-Saharan Africa | 2733 |
| ## 7 | 2013 East Asia and the Pacific | 2873 |
| ## 8 | 2013 Europe and Central Asia | 3261 |
| ## 9 | 2013 Latin America and the Caribbean | 4822 |
| ## 10 | 2013 Middle East and North Africa | 2038 |
| ## # ... with 32 more rows | | |

Adding sentences

```
13 ## Datasets
14
15 ### Investment Annual Summary
16
17 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.
18
19 ````{r}
20 investment_annual_summary
21 ````
```

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.

```
investment_annual_summary
```

| | | dollars_in_millions |
|----------------------------|--------------------------------------|---------------------|
| | fiscal_year | <dbl> |
| ## 1 | 2012 East Asia and the Pacific | 2548 |
| ## 2 | 2012 Europe and Central Asia | 2915 |
| ## 3 | 2012 Latin America and the Caribbean | 3680 |
| ## 4 | 2012 Middle East and North Africa | 2210 |
| ## 5 | 2012 South Asia | 1312 |
| ## 6 | 2012 Sub-Saharan Africa | 2733 |
| ## 7 | 2013 East Asia and the Pacific | 2873 |
| ## 8 | 2013 Europe and Central Asia | 3261 |
| ## 9 | 2013 Latin America and the Caribbean | 4822 |
| ## 10 | 2013 Middle East and North Africa | 2038 |
| ## # ... with 32 more rows | | |

Adding sentences

```
13 ## Datasets
14
15 ### Investment Annual Summary
16
17 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.
18
19 ````{r}
20 investment_annual_summary
21 ````
```

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.

`investment_annual_summary`

| | | dollars_in_millions |
|----------------------------|--------------------------------------|---------------------|
| | fiscal_year | <dbl> |
| ## 1 | 2012 East Asia and the Pacific | 2548 |
| ## 2 | 2012 Europe and Central Asia | 2915 |
| ## 3 | 2012 Latin America and the Caribbean | 3680 |
| ## 4 | 2012 Middle East and North Africa | 2210 |
| ## 5 | 2012 South Asia | 1312 |
| ## 6 | 2012 Sub-Saharan Africa | 2733 |
| ## 7 | 2013 East Asia and the Pacific | 2873 |
| ## 8 | 2013 Europe and Central Asia | 3261 |
| ## 9 | 2013 Latin America and the Caribbean | 4822 |
| ## 10 | 2013 Middle East and North Africa | 2038 |
| ## # ... with 32 more rows | | |

Adding sentences

```
13 ## Datasets
14
15 ### Investment Annual Summary
16
17 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.
18
19 ```{r}
20 investment_annual_summary
21 ````
```

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.

| | investment_annual_summary |
|----------------------------|--------------------------------------|
| | ## # A tibble: 42 x 3 |
| | ## fiscal_year region |
| | ## <dbl> <chr> |
| ## 1 | 2012 East Asia and the Pacific |
| ## 2 | 2012 Europe and Central Asia |
| ## 3 | 2012 Latin America and the Caribbean |
| ## 4 | 2012 Middle East and North Africa |
| ## 5 | 2012 South Asia |
| ## 6 | 2012 Sub-Saharan Africa |
| ## 7 | 2013 East Asia and the Pacific |
| ## 8 | 2013 Europe and Central Asia |
| ## 9 | 2013 Latin America and the Caribbean |
| ## 10 | 2013 Middle East and North Africa |
| ## # ... with 32 more rows | |

Code comments

```
```{r}
Print the Investment Annuary Summary data
investment_annual_summary
```
```

```
# Print the Investment Annuary Summary data
investment_annual_summary
```

Formatting text

document.Rmd

```
1 ---  
2 title: "Title"  
3 output: html_document  
4 ---  
5  
6 **bold** or __bold__  
7  
8 *italics* or _italics_  
9  
10 ~~strikethrough~~  
11  
12
```

HTML Viewer ↗

Title

bold or bold

italics or *italics*

~~strikethrough~~

Inline code

```
## 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.

```
```{r}  
investment_annual_summary
```
```

```
### Investment Services Projects
```

The `investment_services_projects` dataset provides information about each investment project from the 2012 to 2018 fiscal years. Information listed includes the project name, company name, sector, project status, and investment amounts.

```
```{r}  
investment_services_projects
```
```

Inline code

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.

```
investment_annual_summary
```

```
## # A tibble: 42 x 3
##   fiscal_year region          dollars_in_millions
##       <dbl> <chr>                    <dbl>
## 1      2012 East Asia and the Pacific     2548
## 2      2012 Europe and Central Asia      2915
## 3      2012 Latin America and the Caribbean 3680
## 4      2012 Middle East and North Africa    2210
## 5      2012 South Asia                  1312
## 6      2012 Sub-Saharan Africa            2733
## 7      2013 East Asia and the Pacific     2873
## 8      2013 Europe and Central Asia      3261
## 9      2013 Latin America and the Caribbean 4822
## 10     2013 Middle East and North Africa    2038
## # ... with 32 more rows
```

Investment Services Projects

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.

```
investment_services_projects
```

Including links

```
14 ## Datasets
15 ### Investment Annual Summary
16 The `investment_annual_summary` dataset from [the IFC](https://www.kaggle.com/theworldbank/ifc-investment-summary-and-services-projects) provides a summary of the dollars in
17 millions provided to each region for each fiscal year, from 2012 to 2018.
18
19 ``{r}
20 investment_annual_summary
21 ```
22
23
```

Investment Report

Datasets

Investment Annual Summary

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

`investment_annual_summary`

Including images

```
14 ## Datasets
15 ### Investment Annual Summary
16 The `investment_annual_summary` dataset from [the IFC](https://www.kaggle.com/theworldbank/ifc-investment-summary-and-services-projects) provides a summary of the dollars in
17 millions provided to each region for each fiscal year, from 2012 to 2018.
18 
19 ````{r}
20 investment\_annual\_summary
21 ``
22
```

Investment Report

Datasets

Investment Annual Summary

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



investment_annual_summary

Summary

document.Rmd

```
1 ---  
2 title: "Title"  
3 output: html_document  
4 ---  
5  
6 # Header 1  
7 ## Header 2  
8 ### Header 3  
9  
10 `code`  
11  
12 **bold** or __bold__  
13  
14 *italics* or _italics_  
15  
16 ~~strikethrough~~  
17  
18 ``{r}  
19 # Comment  
20 ``  
21  
22 [World Bank IFC Data](https://www.kaggle.com/theworldbank  
/ifc-investment-summary-and-services-projects)  
23  
24   
25
```



HTML Viewer



Title

Header 1

Header 2

Header 3

code

bold or **bold**

italics or *italics*

~~strikethrough~~

Comment

World Bank IFC Data



Let's practice!

REPORTING WITH R MARKDOWN

The YAML header

REPORTING WITH R MARKDOWN



Amy Peterson

Curriculum Manager at DataCamp

YAML header

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 author: "Amy"  
4 output: html_document  
5 ---  
6
```

HTML Viewer ↗

Investment Report

Amy

Output types

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 author: "Amy"  
4 output: html_document  
5 ---  
6
```

HTML Viewer ↗

Investment Report

Amy

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 author: "Amy"  
4 output: pdf_document  
5 ---  
6
```

PDF Viewer ↗

Investment Report
Amy

Course exercises

```
investment_report.Rmd
```

```
1 ---  
2 title: "Investment Report"  
3 output: html_document  
4 ---  
5  
6 ```{r data, include = FALSE}  
7 library(readr)  
8  
9 investment_annual_summary <- read_csv("https://assets.datacamp.com  
/production/repositories/5756/datasets  
/d0251f26117bbcf0ea96ac276555b9003f4f7372/investment_annual_summary.csv")  
10 investment_services_projects <- read_csv("https://assets.datacamp.com  
/production/repositories/5756/datasets  
/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/investment_services_projects  
.csv")  
11 ...  
12  
13 ...  
14 investment_annual_summary  
15 investment_services_projects  
16 ...  
17  
18
```

  Knit HTML

Adding the date manually

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 date: "8 April 2020"  
4 output: html_document  
5 ---  
6
```

HTML Viewer ↗

Investment Report

8 April 2020

Adding the date automatically

investment_report.Rmd

```
1 ---  
2 title: "Investment Report"  
3 date: ``r Sys.Date()``  
4 output: html_document  
5 ---  
6
```

HTML Viewer ↗

Investment Report
2020-04-08

Formatting the date

investment_report.Rmd

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

HTML Viewer ↗

Investment Report

08 April 2020

Date formatting options

| Text | Numeric |
|----------|----------------|
| %A or %a | Weekday |
| %B or %b | Month |
| | |
| | |

¹ <https://www.rdocumentation.org/packages/base/topics/strptime>

Date formatting example

investment_report.Rmd

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

HTML Viewer ↗

Investment Report

April 08, 2020

Other date options

investment_report.Rmd

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

HTML Viewer ↗

Investment Report

Last edited April 08, 2020

Let's practice!

REPORTING WITH R MARKDOWN