

# Making Slides using Rmd

Output to html and pdf

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Your Name

April 1, 2021

# Background

# Title 1

## Today

- Welcome! Sample code can be found [here](#).
- AAA: *Why are we here?* Think!
- BBB: *What are we doing?* Think!
- Rmd: Rmd is *powerful*.

## Upcoming

- Learn more Rmd.
- Build momentum.

## Long run

**Goal:** Deepen understandings for markdown, html and css.

# Title 2

## What is the Rmd?

Rmd helps us make

- ABC
- EFG
- HIJ

It will probably be hard to get used to it at the beginning, but will be worth in the future.

**Repeat.** It will probably be hard to get used to it at the beginning, but will be worth in the future.

# Practice

# Title 3

## What is it?

The [R project website](#):

R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS.

What does that mean?

- R was created for the statistical and graphical work required by econometrics.
- R has a vibrant, thriving online community (e.g., [Stack Overflow](#)).
- Plus it's **free** and **open source**.

# Regression and causality

First, we need to generate some data.

```
# Set seed
set.seed(12345)
# Set sample size
n ← 1e4

# Generate data
ex_df ← tibble(
  female = rep(c(0, 1), each = n/2),
  grad = runif(n, min = female/3, max = 1) %>% round(0),
  wage = 100 - 25 * female + 5 * grad + rnorm(n, sd = 3)
)
```

# Regression and causality

Look at data.



# Regression and causality

Now we can estimate our naïve regression

$$\text{Wage}_i = \alpha + \beta \text{Grad}_i + \varepsilon_i$$

```
lm(wage ~ grad, data = ex_df)
```

	<b>Coef.</b>	<b>S.E.</b>	<b>t stat</b>
Intercept	91.65	0.20	447.70
Graduate	-1.59	0.26	-6.18

# Regression and causality

Now we can estimate our causal regression

$$\text{Wage}_i = \alpha + \beta_1 \text{Grad}_i + \beta_2 \text{Female}_i + \varepsilon_i$$

```
lm(wage ~ grad + female, data = ex_df)
```

	<b>Coef.</b>	<b>S.E.</b>	<b>t stat</b>
Intercept	99.98	0.05	1868.81
Graduate	5.03	0.06	78.23
Female	-25.00	0.06	-402.64

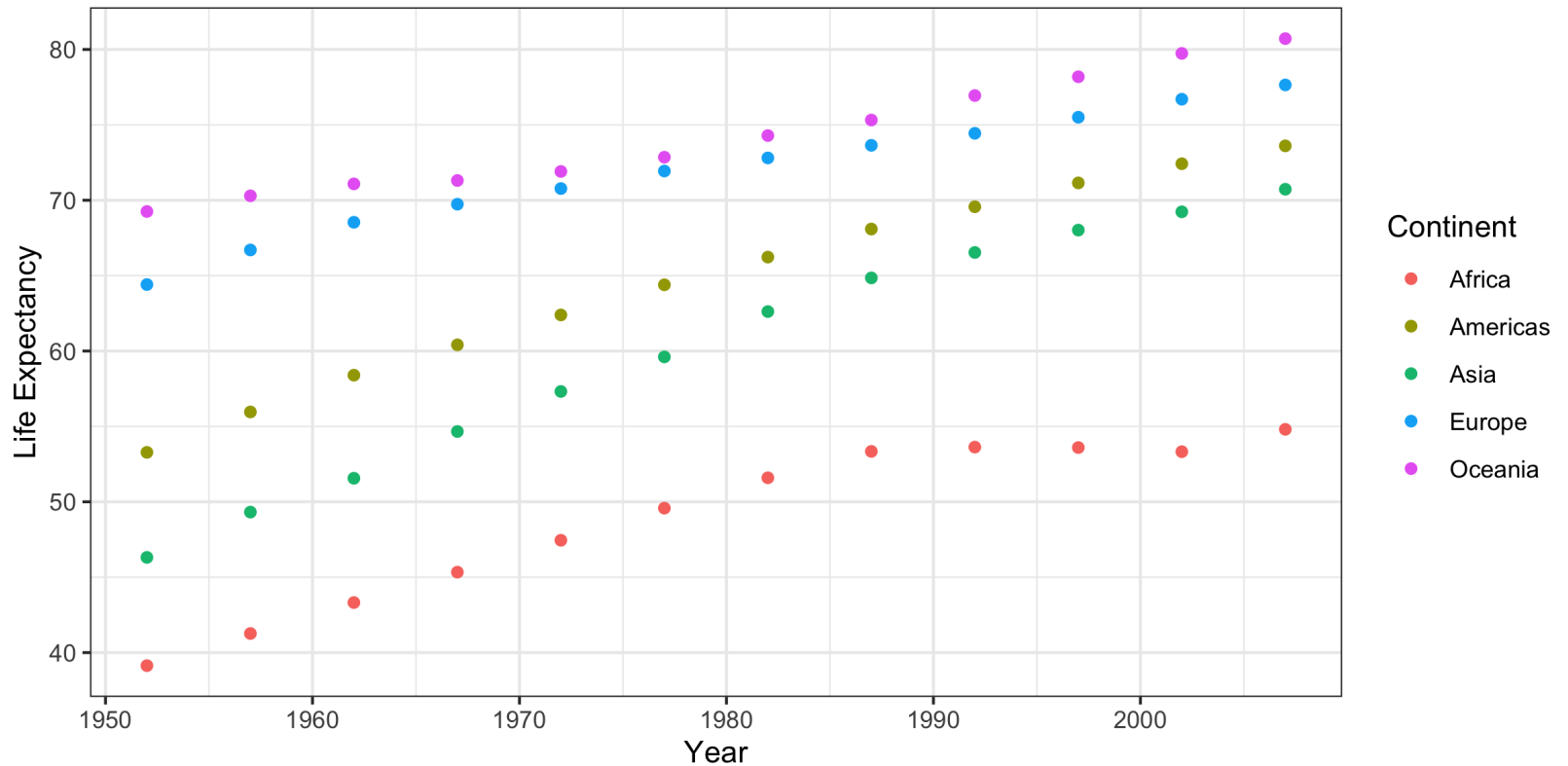
# Title 4

We use gapminder data.

```
library(gapminder)
dat ← gapminder %>%
  group_by(year, continent) %>%
  summarise(`Life Expectancy` = mean(lifeExp),
            Population = sum(as.numeric(pop))) %>%
  rename(Year = year, Continent = continent)
```

# Title 5

```
ggplot(dat, aes(Year, `Life Expectancy`, color = Continent)) +  
  geom_point() + theme_bw()
```



# Table 1

```
kable(df)
```

<b>id</b>	<b>name</b>	<b>age</b>	<b>grade</b>	<b>test1_score</b>	<b>test2_score</b>	<b>final_score</b>	<b>registered</b>
1	Bob	28	C	8.9	9.1	9.00	TRUE
2	Ashley	27	A	9.5	9.1	9.30	FALSE
3	James	30	A	9.6	9.2	9.40	TRUE
4	David	28	C	8.9	9.1	9.00	FALSE
5	Jenny	29	B	9.1	8.9	9.00	TRUE
6	Hans	29	B	9.3	8.5	8.90	TRUE
7	Leo	27	B	9.3	9.2	9.25	TRUE
8	John	27	A	9.9	9.3	9.60	FALSE
9	Emily	31	C	8.5	9.1	8.80	FALSE
10	Lee	30	C	8.6	8.8	8.70	FALSE

# Table 2

id	name	age	grade	test1_score	test2_score	final_score	registered
1	Bob	28	C	8.9	9.1	9.00 (rank: 06)	Yes
2	Ashley	27	A	9.5	9.1	9.30 (rank: 03)	No
3	James	30	A	9.6	9.2	9.40 (rank: 02)	Yes
4	David	28	C	8.9	9.1	9.00 (rank: 06)	No
5	Jenny	29	B	9.1	8.9	9.00 (rank: 06)	Yes
6	Hans	29	B	9.3	8.5	8.90 (rank: 08)	Yes
7	Leo	27	B	9.3	9.2	9.25 (rank: 04)	Yes
8	John	27	A	9.9	9.3	9.60 (rank: 01)	No
9	Emily	31	C	8.5	9.1	8.80 (rank: 09)	No
10	Lee	30	C	8.6	8.8	8.70 (rank: 10)	No