FIT3179

Data Visualisation 2

Five Design Sheets

Student Name: Richard Hua
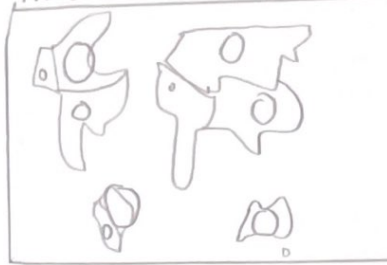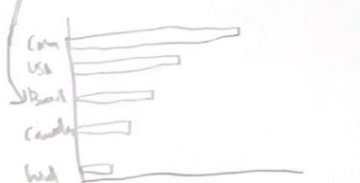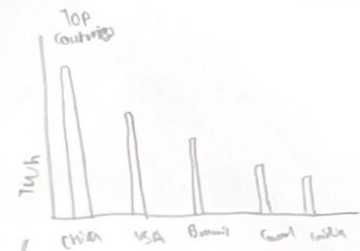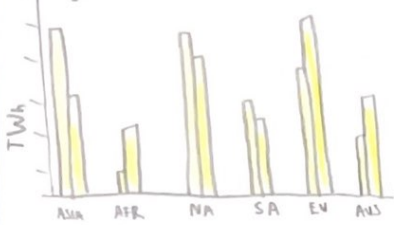**Student Number:** 32484003

IDEAS
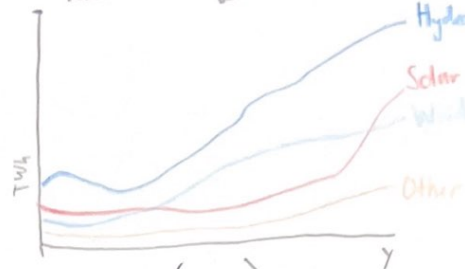
Total Renewable Energy Production 2020

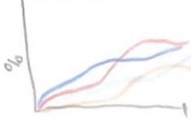### Number of Renewable Energy Products 2020

Region - Production and Consumption

TWh

ASIA AFR NA SA EU AUS
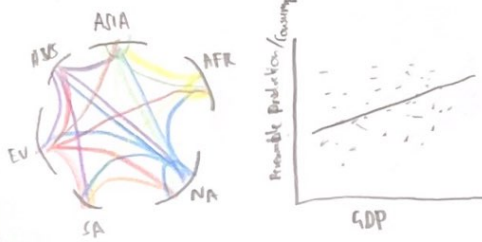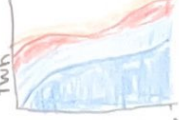
Renewable Energy Growth

TWh

- Hydro
- Solar
- Wind
- Other

Y

Percentage Growth

%

Stacked Version

TWh

WIND	Hydro		BIO
	HYDRO		Geothermal
Hydroelectric	SOLAR	Hybrid	Ocean

Top Countries

TWh

China USA Brazil Canda India

Corn
USA
Brazil
Canada
Ind

ASIA

AUS   AFR

EU

SA   NA

	SOLAR		HYDRO	
	WIND			

Renewable Production/Consumption

GDP
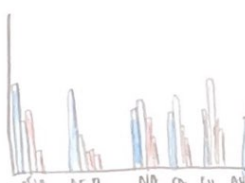
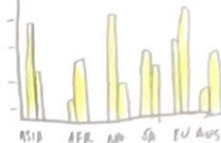# FILTER

Either unclassified/blood ①

- Choropleth Map showing renewable energy product data

② - Show region production and consumption

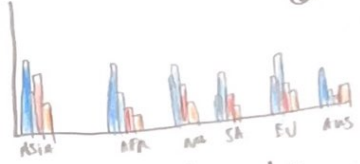ASIA AFR NA SA EU AUS

③ - Show top 'X' countries that produce where it comes from
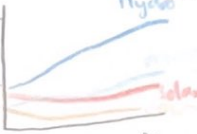
④ Hydro - Line chart showing progression of renewable energy growth

Solar

Y

⑤

ASIA AFR NA SA EU AUS
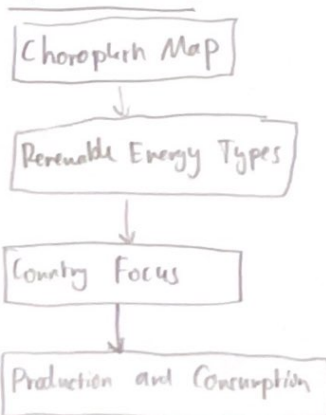
- Show which regions produce different renewable energy
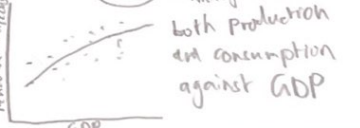
(6/7) - Analysis on both production and consumption against GDP

Renewable Prod/cons

GDP

CATEGORISE

| Choropleth Map |

↓

| Renewable Energy Types |

↓

| Country Focus |

↓

| Production and Consumption |

COMBINE AND REFINE

- Choropleth Map
  ↳ Showcase which countries have high/low renewable energy ①

- Renewable Energy Types
  ↳ Line chart showing growth of each renewable energy ④
  ↳ Show each regions' renewable energy ⑤
  ↳ See pattern

- Country Focus
  ↳ Highlight top 5/10 countries that produce boost renewable energy ③

- Production and Consumption
  ↳ Regions production and Consumption ②
  ↳ Scatterplot analysis of GDP vs Production /consumption of energy (6/7)

QUESTIONS
- Any interactivity for the user?
- Colour coding appropriate?
- Is two scatterplot needed? what info will I get?
- What annotations can I do?

LAYOUT

Renewable Energy — OPTIONS

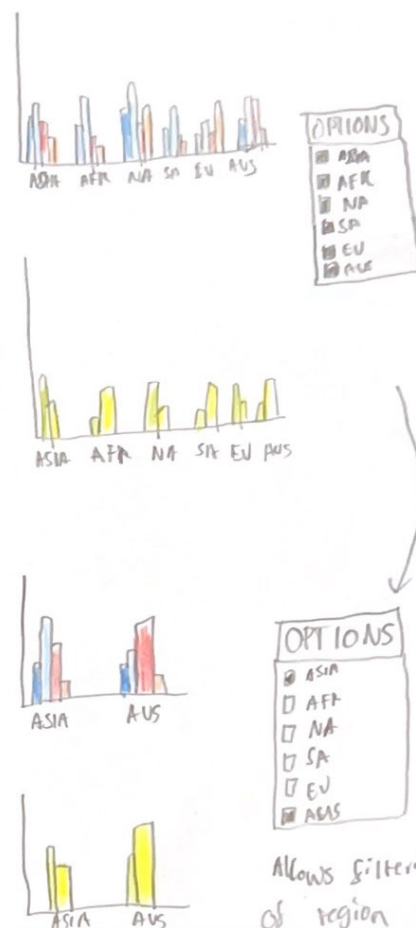Production / Consumption (TWh vs GDP scatter plots)
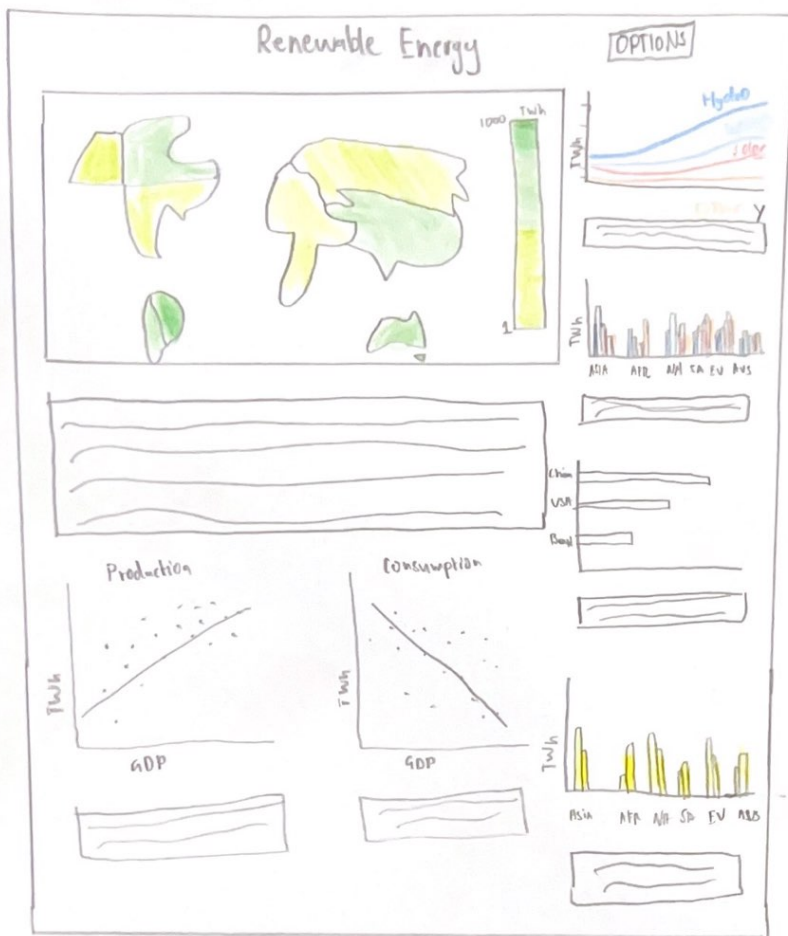
Title: Renewable Energy around the World
Author: Richard Hua
Date: 14/09/2024
Sheet: 2

Task: FIT3179 Ass2 - Map Focus

OPERATION

OPTIONS
- ☑ ASIA
- ☑ AFR
- ☑ NA
- ☑ SA
- ☑ EU
- ☑ AUS

OPTIONS
- ☑ ASIA
- ☐ AFR
- ☐ NA
- ☐ SA
- ☐ EU
- ☑ AUS

Allows filtering of region

FOCUS

Main focus is the choropleth map of renewable energy Production

Choropleth Map
↳ Unclassed or classed?

Colour legend
↳ Light green → low
↳ Dark green → high

← Textbox explaining map analysis

DISCUSSION

Advantages
↳ Main focus on choropleth map
↳ Has filtering option of regions

Disadvantages
↳ Side graphs are also important, but shown smaller
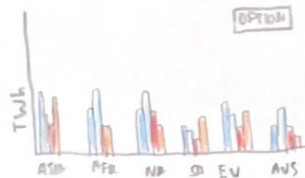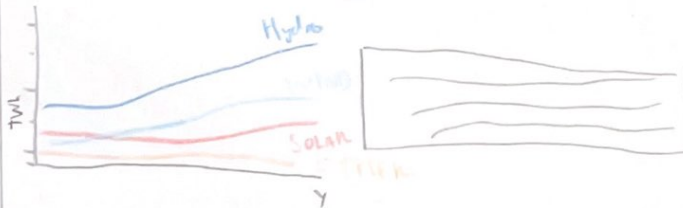
↳ Spacing is not good, looks clunky
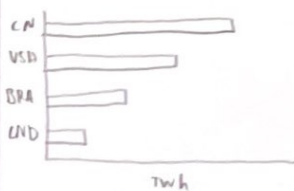
LAYOUT

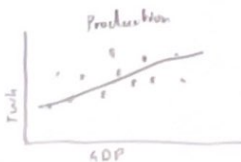## Renewable Energy

Choropleth Map

Renewable Energy Types

Country Focus

Production and Consumption
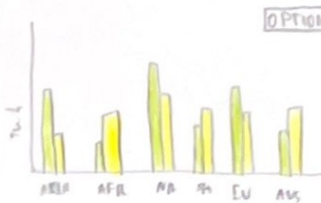
FOCUS

Each topic has each focus/section
  ↳ divided by sub-headings

Each graph has text to explain
the content and what the data means
  ↳ Regional trends, renewable energy types

OPERATION

Similar to Sheet 2 operations
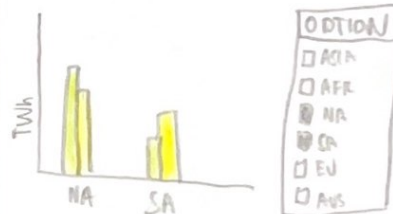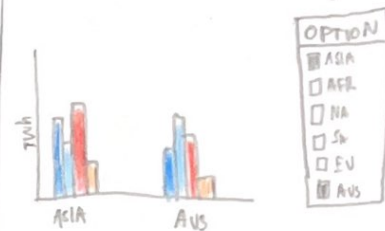
DISCUSSION

Advantages
  ↳ All charts are focused and
  have their own text
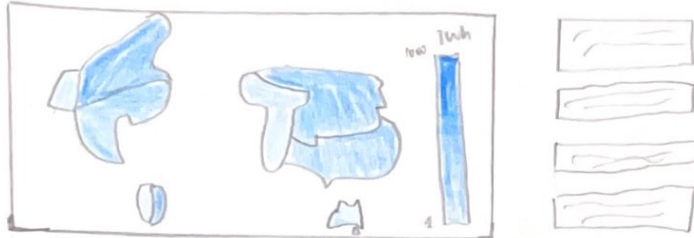 ↳ Layout has clear flow/story,
  with subheadings

Disadvantages
  ↳ May be too much info (overwhelming?)
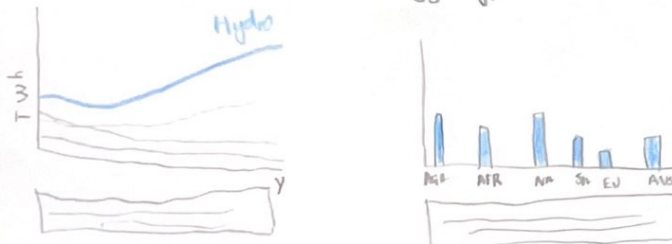 ↳ Boring interactive features

LAYOUT

Renewable Energy

Choropleth Map

Renewable Energy Types

Hydro

Twh

y

ASIA AFR NA SA EU AUS

Country focus

CN
USA
BR
IND

Production and Consumption

TWh

ASIA AFR NA SA EU AUS

TWh

GDP

TWh

GDP
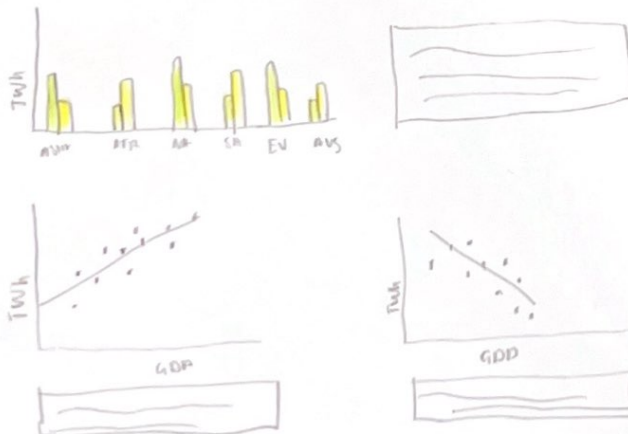
FOCUS

This vis focuses on an individual renewable energy type
↳ Once selected, it highlights that type of renewable energy

OPERATION

Once image is clicked it switches to that type for all possible graphs

EXAMPLE

WIND

ASIA AFR NA SA EU AUS
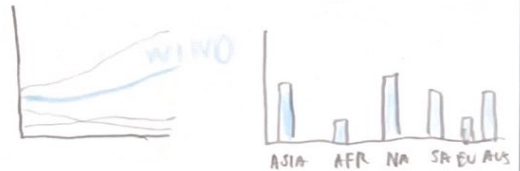
DISCUSSION

Advantages

↳ Focuses on each renewable energy type
  ↳ See how regions produce
    ↳ Can gain insight
↳ Clear flow / layout

Disadvantages

↳ No overall total production
↳ May be overwhelming/confusing

LAYOUT Based off of Sheet 3

Renewable Energy

Choropleth Map

2000 ————————————●2020

Renewable Energy Types

Annotation

Hydro
WIND
SOLAR
OTHER

Twh

2000   2005   2010   2015   1980   y

OPTION

Twh

ASIA   AFR   NA   SA   EU   AUS

Country Focus

CN
USA
BR
CND

TWh

Production and Consumption

OPTION

Twh

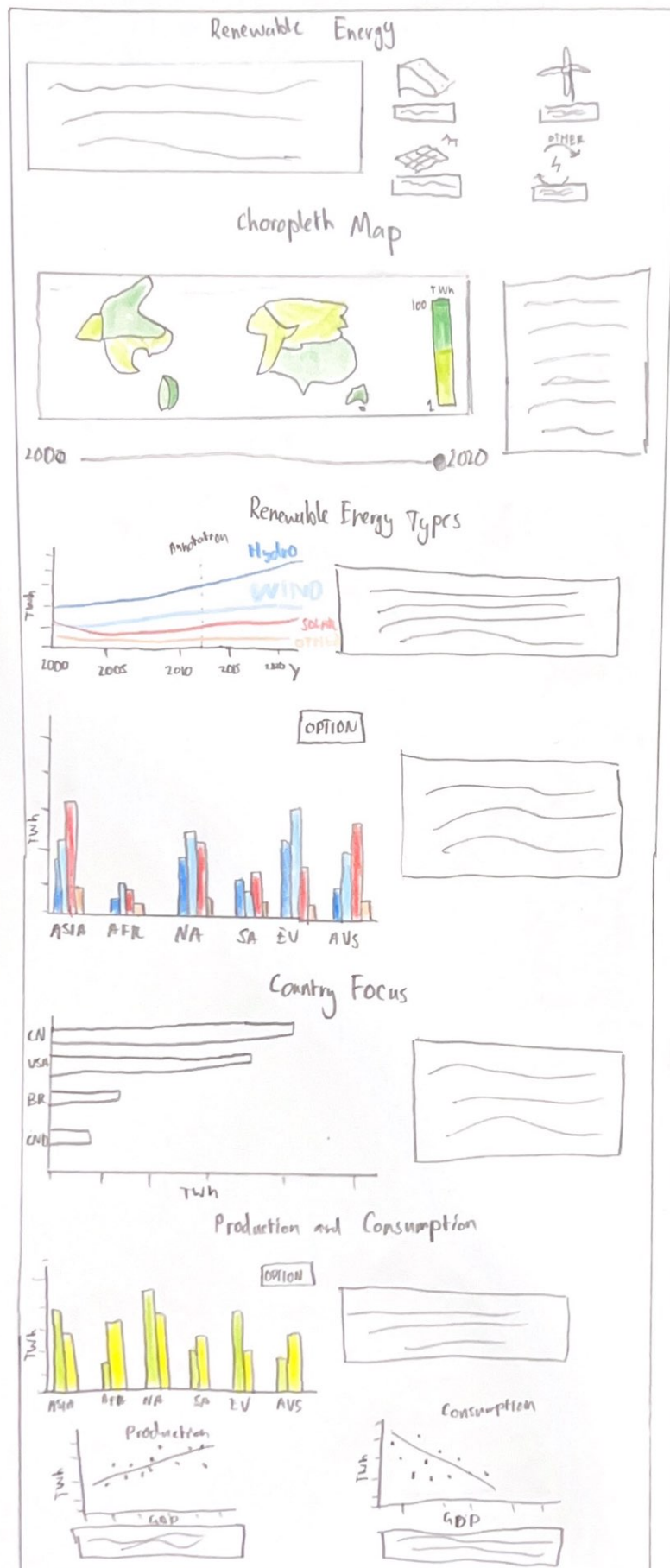ASIA   AFR   NA   SA   EU   AUS

Production

Twh

GDP

Consumption

Twh

GDP

Title : Renewable Energy around the World
Author : Richard Hua
Date : 17/09/2024
Sheet : 5

Task : FIT3179 As2 - Final Design

FOCUS

No main focus, each topic has it's own subsection and corresponding text that explains
↳ Countries, region, what areas produce what

Potential annotation to explain why line chart grew? etc.

Colours chosen well and not mixed

OPERATION

2000 ——————————●→2020
              2018

Choropleth map slider to allow user to view year differences

OPTION
☑ ASIA
☐ AFR
☐ NA
☐ SA
☐ EU
☑ AUS

Drop down options bar for bar charts, allow user to select certain region/continent and compare

Tool tips
↳ Clear and concise
↳ Visual hierarchy → Weighted

DETAIL

- Kaggle and 'Our World in Data'

- Use of Vega-Lite

- Estimated 3 weeks to complete
  ↳ ~15 hours for idioms
  ↳ ~ 10 hours for formatting

- Single URL on GittHub

- Standard Webpage size → CSS
  ↳ Scroll up and down