Understand

#1

goal: gather, observe, and research available information to find the needs of the user

artifacts: design requirements

generate

1) identify the challenge & users

*think big! what is the **problem**? **who** is affected by it? what is known/unknown? orient yourself with all of the project's who, what, why, when, & how.*

Identify and centralize football world cup statistics

2) find questions & tasks

*what can you **ask** about the challenge? what do users want to do with data? think high and low level. revisit this worksheet to break these down further.*

Which country performed the bes in word wop

- Countries attendance map
- yellow cards, results
- Single statistics by countries
- countries performed against each other

!! *Box #1 may help you revisit this box later*

3) check with users or explore data

users: what did you find out? what sparked curiosity?
data: characterize aspects of the data. what is it like?

Github public dataset with some (no all wanted) statistics

Crawl fifa webpage to extend our database

!! *get the real data and talk to real users if possible!*

4) brainstorm design requirements

*what are recurring trends? what are key design **opportunities**? are there **constraints** worth listing?*

Epfl viz course

interactive and sufficiently complex d3.js

Scan device data (several countries don't longer exist

evaluate

5) compare and rank design requirements

*choose a method for comparison: **pros/cons table**, **rank** based on your findings/user needs/tasks, **cross out** the list based on listed justifications, or **pick top 3** to keep and why. explain and review with a group or partner.*

Map

Countries scores comparaision

- Comparaison with othes teams

!! *is this the right challenge to tackle? is there enough detail? or too much? too many or not enough requirements? complete this worksheet again to refocus the project.*

Home Page
1

Understand

goal: gather, observe, and research available information to find the needs of the user

artifacts: design requirements

generate

1) identify the challenge & users

think big! what is the **problem**? **who** is affected by it? what is known/unknown? orient yourself with all of the project's who, what, why, when, & how.

Overall Statistics of world cup from countries
Comparaison between countries
Comparaison metrics
Visualize, iterative,

2) find questions & tasks

what can you **ask** about the challenge? what do users want to do with data? think high and low level. revisit this worksheet to break these down further.

Transitions between different layers / statistics
Map iteration lead to ~~show~~ individual statistics

!! box #3 may help you revisit this box later

3) check with users or explore data

users: what did you find out? what sparked curiosity?
data: characterize aspects of the data. what is it like?

Dataset cover enough information to cover
Nice transitions between different ways of messurement (different comparaision)

!! get the real data and talk to real users if possible!

4) brainstorm design requirements

what are recurring trends? what are key design **opportunities**? are there **constraints** worth listing?

choropleth map
bubble charts
plot bar chars

evaluate

5) compare and rank design requirements

choose a method for comparison: **pros/cons table**, **rank** based on your findings/user needs/tasks, **cross out** the list based on listed justifications, or **pick top 3** to keep and why. explain and review with a group or partner.

Bubble chart are dificult to implement but give a nice comparaition with multiples metrics.

Choropleth map show the more active countries, in world cups but can only show one metric (id)

Bar chart are less fancy, user attractive, but provide a clear

!! is this the right challenge to tackle? is there enough detail? or too much? too many or not enough requirements? complete this worksheet again to refocus the project.

U / I

M #2

Ideate

goal: generate good concepts and ideas for supporting some of the project's design requirements

artifacts: ideas & sketches

generate

1) select a design requirement

how might we address the challenge using the requirement? which questions would a user ask? revisit this worksheet for each important design requirement.

Visualize countries that hosted world cups

Visualize attendance of each countries

!! revisit this worksheet for all important design requirements for your project

2) sketch first idea

show how to address this requirement using an informal sketch - focus on the big idea not the details.

3) sketch another idea

try another sketch, think of a new perspective, be different, do not build off of your previous sketch.

4) sketch a final idea

think of a different abstraction, challenge constraints and assumptions to draw something new or surprising.

!! is three enough? not always. have other ideas? fill out another worksheet!

evaluate

5) compare and relate your ideas

for each sketch, break apart what works well (+) and what doesn't (-) in the table below. make connections. reflect on best parts. can you combine ideas? review the table with a partner or group.

sketch #1	sketch #2	sketch #3
• Clear difference betten countries • No pretty for homepage	• No really a good visualization • Scroll to see all the results • Can display both metrics together	Can ilustrate one metric at the time User friendly and adequated for home page

!! combining ideas and sketches is not easy, sometimes it may open up new possibilities and ideas - guess what, ideate again!

Make

M #1

goal: concretize ideas into tangible prototypes which are approximations of a product in some aspects

artifacts: prototypes

generate

1) set an achievable goal

what should the prototype achieve? what are the specific **criteria for success**? break a larger goal into parts with clearer feature sets.

Build 2 choropleth maps
host
of attendance
cumulative over years (till last chosen year)

!! break a goal apart into multiple and create a worksheet for each sub-goal

2) plan encodings & layouts

what are good visualization **encodings** or **layouts** for which data? use the ideas you just come up with, and remember to justify for users and their tasks.

Use leaflet, geojson dataset, color mapping scale of host attendance

3) plan support for interactions

what can the user do? what is required given the chosen encodings? **justify** your design decisions.

Host Map:
Mouseover show list of ~~host attendance~~ years which this country was host
Attendance map: show a number of attendance of this country

4) sketching additional views

what other parts of the data must be seen? brainstorm how to show this data in the tool.

!! if you are thinking up new ideas to visualize, go back to the ideate activity!

5) build the prototype and check-in

evaluate

are your **goals met** by the prototype? test with users if possible. are design decisions properly justified? do any need to be revisited? were any new constraints or limitations discovered? write down your progress and additional justifications below. review this progress and the prototype with a partner or your group.

- User attractive, nice choice of colors
- Fancy animation over bubbel chart
- Click a country and see more statistics for the specific country
- Countries that no longer exist like (URSS)

!! did the prototype meet its goal/s? measure its success. make sure you have addressed the design requirement. does the prototype try to do too much?

U / I / M / D

B.

1

Ideate

goal: generate good concepts and ideas for supporting some of the project's design requirements

artifacts: ideas & sketches

generate

1) select a design requirement

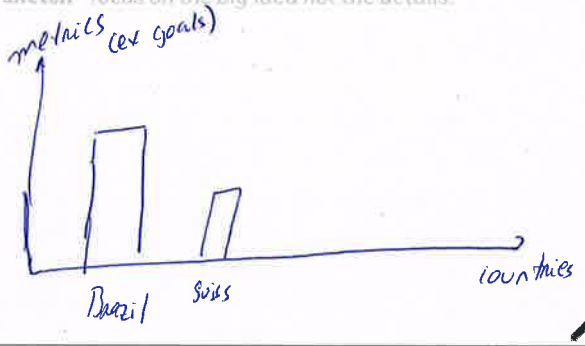
how might we address the challenge using the requirement? which questions would a user ask? revisit this worksheet for each important design requirement.

Compare different metrics between countries using animation that shows progress

!! revisit this worksheet for all important design requirements for your project

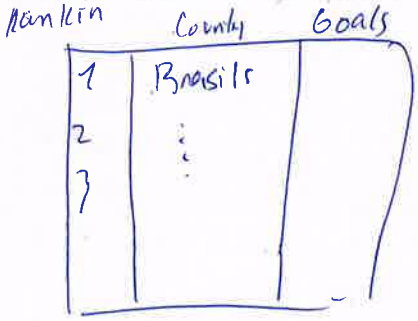
2) sketch first idea

show how to address this requirement using an **informal sketch** - focus on the big idea not the details.



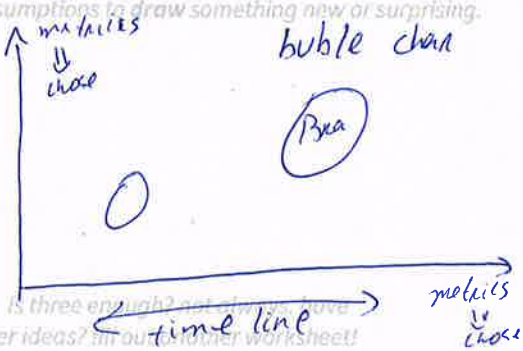
3) sketch another idea

try another **sketch**, think of a new perspective, be different, do not build off of your previous sketch.



4) sketch a final idea

think of a different abstraction. challenge constraints and assumptions to draw something new or surprising.



!! is three enough? not obvious above other ideas? fill out another worksheet!

5) compare and relate your ideas

evaluate

for each sketch, break apart **what works well (+)** and **what doesn't (-)** in the table below. make connections. reflect on best parts. can you **combine ideas**? review the table with a partner or group.

sketch #1	sketch #2	sketch #3
Only one d dimension for comparations	Scroll to see all statistics . Can se multiple ranks at the time but not in order No pairwise comparation	Best for our project Show countrys metrics by years

!! combining ideas and sketches is not easy. sometimes it may open up new possibilities and ideas - guess what, ideate again!

U / I / M

Make

goal: concretize ideas into tangible prototypes which are approximations of a product in some aspects

artifacts: prototypes

generate

1) set an achievable goal

what should the prototype **achieve**? what are the specific **criteria for success**? break a larger goal into parts with clearer feature sets.

Bield a layer using leaflet
transform country shape to bubble in a nice transition
Smoothly translate over years

! ! break a goal apart into multiple and create a worksheet for each sub-goal

2) plan encodings & layouts

what are good visualization **encodings** or **layouts** for which data? use the ideas you just come up with, and remember to justify for users and their tasks.

leaflet give good encoding to allow the transition (country - bubble)
Use country flag to represent countries
Animate transformation

3) plan support for interactions

what can the user do? what is required given the chosen encodings? **justify** your design decisions.

- Mouse over shaw the selected metric and it value in this bubble
- Click give more details about the country
- Bubble size means numbers of cups wins.

4) sketching additional views

what other parts of the data must be seen? brainstorm how to show this data in the tool.

we choce a logarithmic scale to show the metrics because "good teams" were to sparse from "normal teams"

! ! if you are thinking up new ideas to visualize, go back to the Ideate activity!

evaluate

5) build the prototype and check-in

are your **goals met** by the prototype? test with users if possible. are design decisions properly justified? do any need to be revisited? were any new constraints or limitations discovered? write down your progress and additional justifications below. review this progress and the prototype with a partner or your group.

- Dificult to find flags of no longer existent countries, and shapes for the transitions
- Countries with differents names from 5 years ago
- this is really con

! ! did the prototype meet its goal/s? measure its success. make sure you have addressed the design requirement. does the prototype try to do too much?

Understand

Team Statistics # 1

goal: gather, observe, and research available information to find the needs of the user

artifacts: design requirements

generate

1) identify the challenge & users

*think big! what is the **problem**? **who** is affected by it? what is known/unknown? orient yourself with all of the project's who, what, why, when, & how.*

challenge : visualize statistic about a team, their records, results

2) find questions & tasks

*what can you **ask** about the challenge? what do users want to do with data? think high and low level. revisit this worksheet to break these down further.*

- How to visualize number of goals/cards ?
- " match results ?
- " team members ?
- " winning percentage ?

!! box #3 may help you revisit this box later

3) check with users or explore data

users: what did you find out? what sparked curiosity?
data: characterize aspects of the data. what is it like?

!! get the real data and talk to real users if possible!

4) brainstorm design requirements

*what are recurring trends? what are key design **opportunities**? are there **constraints** worth listing?*

- Transform data crawled
- Each visualization (chart / table) have to be dynamic, interactive
- Responsive design

evaluate

5) compare and rank design requirements

*choose a method for comparison: **pros/cons table**, **rank** based on your findings/user needs/tasks, **cross out** the list based on listed justifications, or **pick top 3** to keep and why. explain and review with a group or partner.*

1) Data transforming : easy for doing team statistic
2) Visualization : cool, interactive, sufficient complex D3.js
3) Responsive design

!! is this the right challenge to tackle? is there enough detail? or too much? too many or not enough requirements? complete this worksheet again to refocus the project.

Ideate

Team statistic # 2

goal: generate good concepts and ideas for supporting some of the project's design requirements

artifacts: ideas & sketches

generate

1) select a design requirement

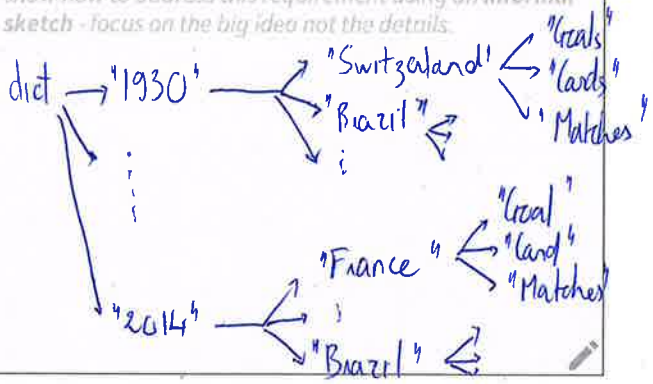
how might we address the challenge using the requirement? which questions would a user ask? revisit this worksheet for each important design requirement.

Data transforming

!! revisit this worksheet for all important design requirements for your project

2) sketch first idea

*show how to address this requirement using an informal **sketch** - focus on the big idea not the details.*

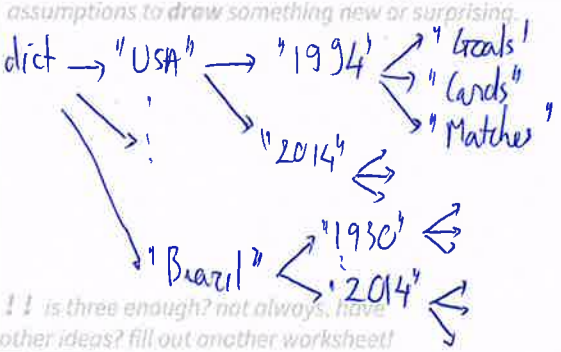


3) sketch another idea

*try another **sketch**, think of a new perspective, be different, do not build off of your previous sketch.*

4) sketch a final idea

*think of a different abstraction. challenge constraints and assumptions to **draw** something new or surprising.*



!! is three enough? not always. have other ideas? fill out another worksheet!

evaluate

5) compare and relate your ideas

*for each sketch, break apart **what works well (+)** and **what doesn't (-)** in the **table** below. make connections. reflect on best parts. can you **combine ideas**? review the table with a partner or group.*

sketch #1	sketch #2	sketch #3
+ easier if we do a statistic for each year		+ easier if we do a statistic for each team (what we want here)

!! combining ideas and sketches is not easy. sometimes it may open up new possibilities and ideas - guess what, ideate again!

Ideate

Team stakshe # 3

goal: generate good concepts and ideas for supporting some of the project's design requirements

artifacts: ideas & sketches

generate

1) select a design requirement

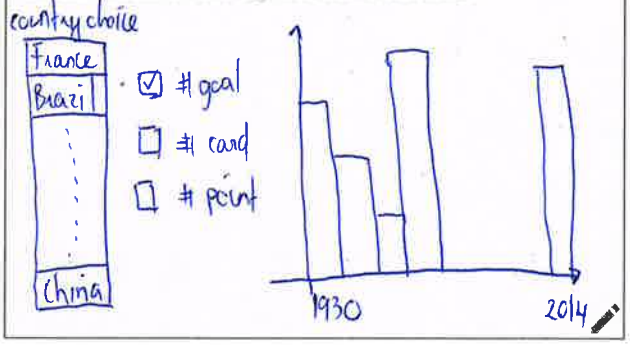
how might we address the challenge using the requirement? which questions would a user ask? revisit this worksheet for each important design requirement.

Visualization: number of goals /cards/ points

!! revisit this worksheet for all important design requirements for your project

2) sketch first idea

*show how to address this requirement using an **informal sketch**. focus on the big idea not the details.*

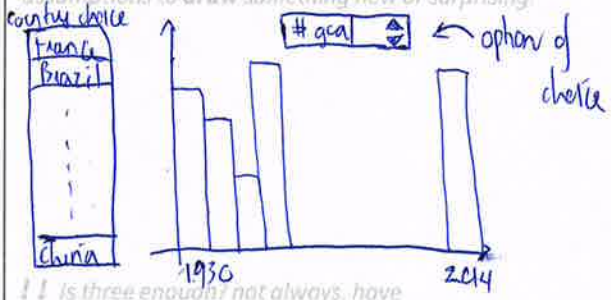


3) sketch another idea

*try another **sketch**, think of a new perspective, be different, do not build off of your previous sketch.*

4) sketch a final idea

*think of a different abstraction. challenge constraints and assumptions to **draw** something new or surprising.*



!! is three enough? not always. have other ideas? fill out another worksheet!

evaluate

5) compare and relate your ideas

*for each sketch, break apart **what works well (+)** and **what doesn't (-)** in the **table** below. make connections. reflect on best parts. can you **combine ideas**? review the table with a partner or group.*

sketch #1	sketch #2	sketch #3
- Require more width space (not good for responsive)		+ Have more space by putting choices above + Good for the implementation of responsive

!! combining ideas and sketches is not easy, sometimes it may open up new possibilities and ideas - guess what, ideate again!

Make

Team stahs tic # 4

goal: concretize ideas into tangible prototypes which are approximations of a product in some aspects

artifacts: prototypes

generate

1) set an achievable goal

*what should the prototype **achieve**? what are the specific **criteria for success**? break a larger goal into parts with clearer feature sets.*

- implement an interaction barchart with many options (# goal, # cards...)

!! break a goal apart into multiple and create a worksheet for each sub-goal

2) plan encodings & layouts

*what are good visualization **encodings** or **layouts** for which data? use the ideas you just came up with, and remember to justify for users and their tasks.*

It's possible that a country participates but doesn't score any goal ⇒ colored x-label (year) indicates this country has participated.

3) plan support for interactions

*what can the user do? what is required given the chosen encodings? **justify** your design decisions.*

- Interaction when choosing another option (transition ⇒ duration)
- Rescale axis when window resizes
- "on click" in barchart / x-label (year) ⇒ also change "match result" and "squads"

4) sketching additional views

what other parts of the data must be seen? brainstorm how to show this data in the tool.

- when "mouseover" ⇒ show data (# goals / # cards ...)
- colored the rectangle

!! if you are thinking up new ideas to visualize, go back to the Ideate activity!

5) build the prototype and check-in

evaluate

*are your **goals met** by the prototype? test with users if possible. are design decisions properly justified? do any need to be revisited? were any new constraints or limitations discovered? write down your progress and additional justifications below. review this progress and the prototype with a partner or your group.*

Limitation: "on click" in barchart / x-label, the "result section" and "squads" of this team changes in a particular year BUT we cannot see the change at the same time (see attachement)

!! did the prototype meet its goal/s? measure its success. make sure you have addressed the design requirement. does the prototype try to do too much?

U / I / M / D

Ideate

Team stahshe # 5

goal: generate good concepts and ideas for supporting some of the project's design requirements

artifacts: ideas & sketches

generate

1) select a design requirement

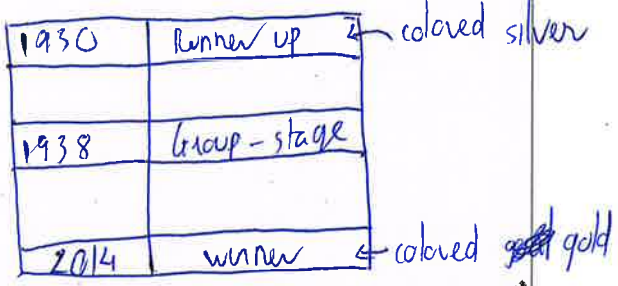
how might we address the challenge using the requirement? which questions would a user ask? revisit this worksheet for each important design requirement.

Visualize a record of team (winner on 2014 / runner-up in 1938)

!! revisit this worksheet for all important design requirements for your project

2) sketch first idea

show how to address this requirement using an informal sketch - focus on the big idea not the details.



3) sketch another idea

try another sketch, think of a new perspective, be different, do not build off of your previous sketch.

4) sketch a final idea

think of a different abstraction, challenge constraints and assumptions to draw something new or surprising.

- combine with bar chart using a scale color with an extra legend for explanation (see attachement)

!! is three enough? not always. have other ideas? fill out another worksheet!

evaluate

5) compare and relate your ideas

for each sketch, break apart what works well (+) and what doesn't (-) in the table below. make connections, reflect on best parts. can you combine ideas? review the table with a partner or group.

sketch #1	sketch #2	sketch #3
- Not cool - "old visualization"		+ color mapping (dark indicates winner ...) + Simple to understand

!! combining ideas and sketches is not easy. sometimes it may open up new possibilities and ideas - guess what, ideate again!

U / I / M

Ideate

Team statistic # 6

goal: generate good concepts and ideas for supporting some of the project's design requirements

artifacts: ideas & sketches

generate

1) select a design requirement

how might we address the challenge using the requirement? which questions would a user ask? revisit this worksheet for each important design requirement.

Show winning percentage of this team versus their opponent

!! revisit this worksheet for all important design requirements for your project

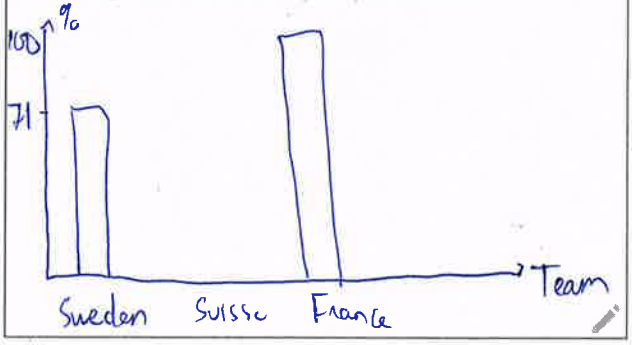
2) sketch first idea

*show how to address this requirement using an **informal sketch** - focus on the big idea not the details.*

Sweden	71%
Suisse	0%
France	100%

3) sketch another idea

*try another **sketch**, think of a new perspective, be different, do not build off of your previous sketch.*



4) sketch a final idea

*think of a different abstraction. challenge constraints and assumptions to **draw** something new or surprising.*

free map

Sweden 71%	Suisse 0%
France 100%	

!! is three enough? not always. have other ideas? fill out another worksheet!

5) compare and relate your ideas

evaluate

*for each sketch, break apart **what works well (+)** and **what doesn't (-)** in the **table** below. make connections, reflect on best parts. can you **combine ideas**? review the table with a partner or group.*

sketch #1	sketch #2	sketch #3
- Very long with the number of ~~co~~ country	- X axis is also long - No way to show 0% ~~for Suisse~~ Switzerland	+ More compact with these rectangles + Nice visualization

!! combining ideas and sketches is not easy. sometimes it may open up new possibilities and ideas - guess what, ideate again!

U / I / M

Make

Statistic # 7

goal: concretize ideas into tangible prototypes which are approximations of a product in some aspects

artifacts: prototypes

generate

1) set an achievable goal

*what should the prototype **achieve**? what are the specific **criteria for success**? break a larger goal into parts with clearer feature sets.*

Implement a treemap showing the winning percentage of this team versus their opponent

!! break a goal apart into multiple and create a worksheet for each sub-goal

2) plan encodings & layouts

*what are good visualization **encodings** or **layouts** for which data? use the ideas you just come up with, and remember to justify for users and their tasks.*

- Size of rectangle : # matches played
- Label of rectangle : opponent team + percentage winning
- Rectangle color filled with a color scale by % winning

3) plan support for interactions

***what can the user do?** what is required given the chosen encodings? **justify** your design decisions.*

- Responsive treemap
- Mouse over: show number of match played between them

4) sketching additional views

what other parts of the data must be seen? brainstorm how to show this data in the tool.

Dark color means this team always wins their opponent team

!! if you are thinking up new ideas to visualize, go back to the ideate activity!

5) build the prototype and check-in

evaluate

*are your **goals met** by the prototype? test with users if possible. are design decisions properly justified? do any need to be revisited? were any new constraints or limitations discovered? write down your progress and additional justifications below. review this progress and the prototype with a partner or your group.*

Limitation: it is not a clickable treemap

⇒ TO DO: group by continent

(see attachement)

!! did the prototype meet its goal/s? measure its success. make sure you have addressed the design requirement. does the prototype try to do too much?

Ideate

#____

goal: generate good concepts and ideas for supporting some of the project's design requirements

artifacts: ideas & sketches

generate

1) select a design requirement

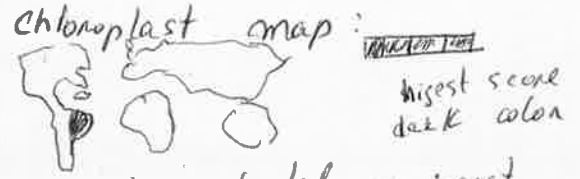
how might we address the challenge using the requirement? which questions would a user ask? revisit this worksheet for each important design requirement.

Compare countries base on some criterium (coop winners cups, points, cards)
See progress over time

!! revisit this worksheet for all important design requirements for your project

2) sketch first idea

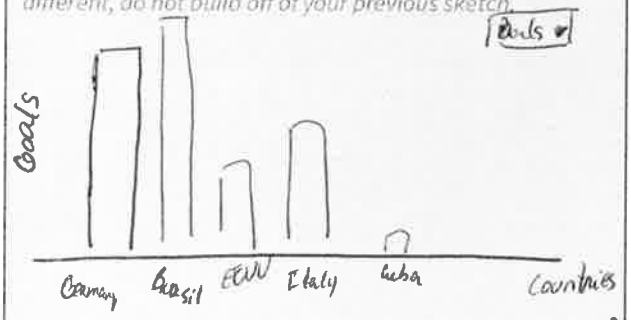
*show how to address this requirement using an **informal sketch** - focus on the big idea not the details.*



chose colors adapted on highest scores, and performance (different colors for

3) sketch another idea

*try another **sketch**, think of a new perspective, be different, do not build off of your previous sketch.*



4) sketch a final idea

*think of a different abstraction. challenge constraints and assumptions to **draw** something new or surprising.*

!! is three enough? not always. have other ideas? fill out another worksheet!

evaluate

5) compare and relate your ideas

*for each sketch, break apart **what works well (+)** and **what doesn't (-)** in the **table** below. make connections. reflect on best parts. can you **combine ideas**? review the table with a partner or group.*

sketch #1	sketch #2	sketch #3
Only one metric at a time Dificult to see progress Easy to see comparations	Comparation well defined. Easy to implement Only one metric at the time dificult to see progress over years	Comparation well defined, Can chose multiple metrics

!! combining ideas and sketches is not easy. sometimes it may open up new possibilities and ideas - guess what, ideate again!