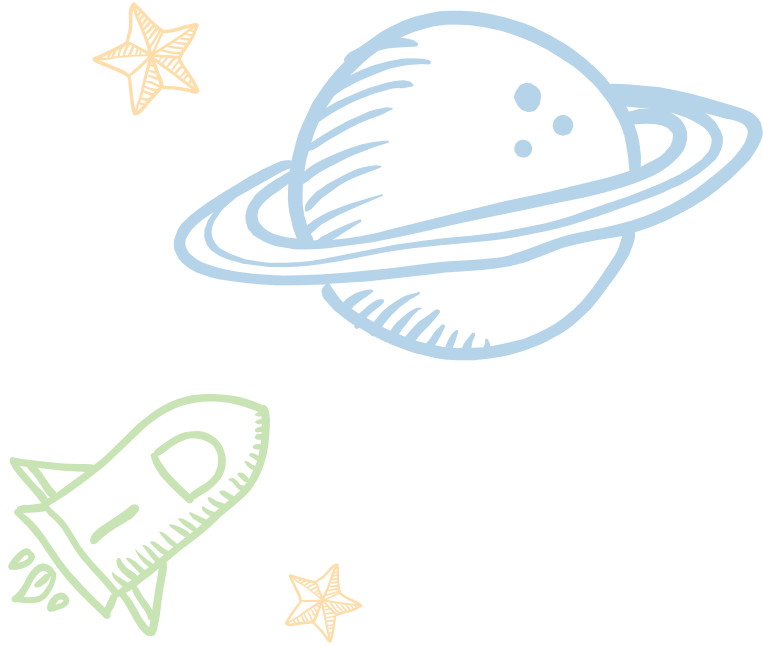




DATUM

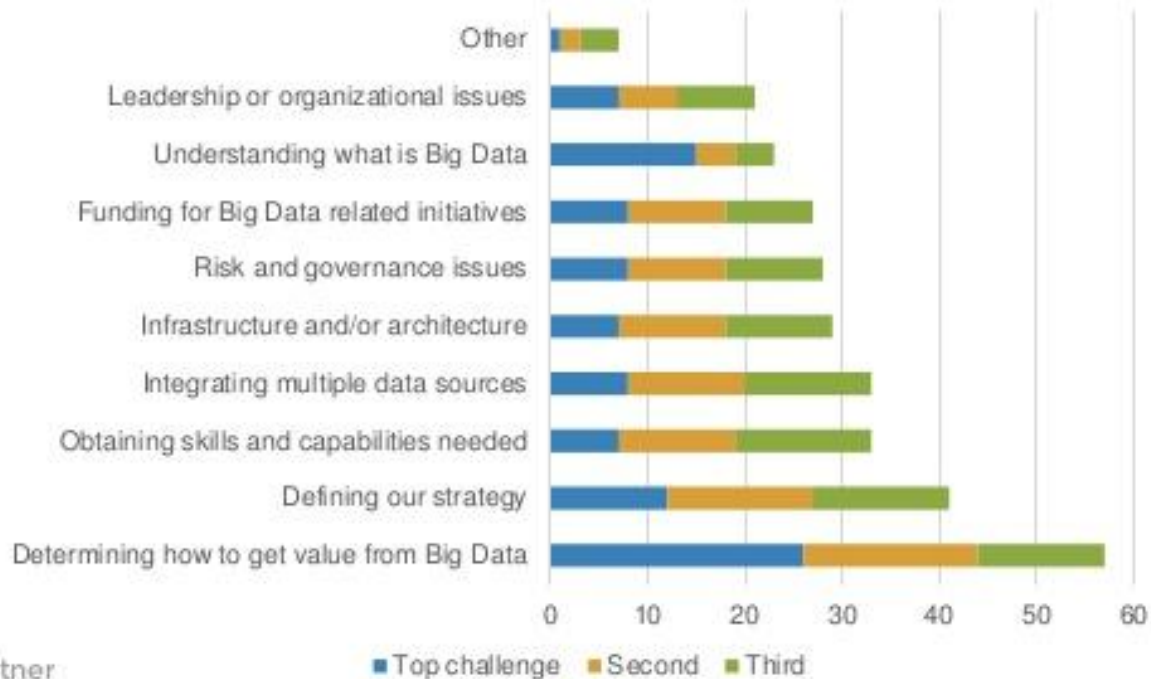
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DATA SCIENCE PROJECTS

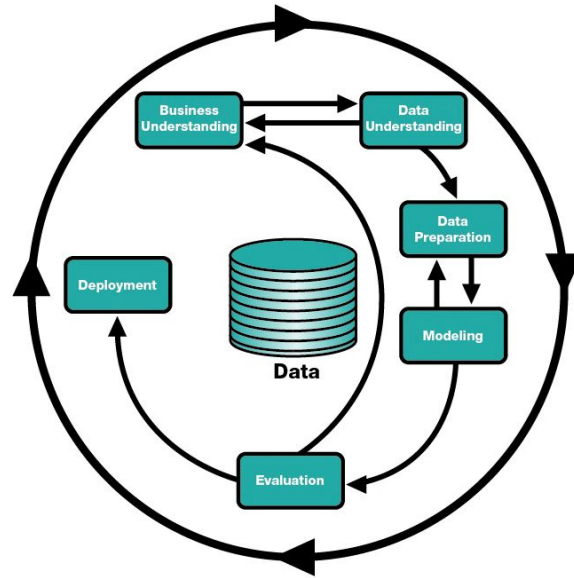
The methodology which to
conduct them

TOP BIG DATA CHALLENGES





CRISP-DM



DATA SCIENCE OBJECTIVES

Business objectives

- data science is mostly used for business

Data Analytic Objectives

- goals align with business objectives

BUSINESS UNDERSTANDING



BUSINESS UNDERSTANDING

Determining Business Objectives

1. Gather background information
2. Assessing the situation
3. Determining data science goals
4. Producing a Project Plan

FOR YOUR PROJECT

If your project already has a business

- follow the business understanding workflow

If your project doesn't have a business

- find a business who would need your services
- Ex) if you're finding housing prices in Boston, say that the business is "Zillow"

OUTPUT

1. Determine business objectives

Record information known about business

1. Success criteria
2. Inventory of resource
3. Requirements, assumptions, constraints
4. Cost and benefits

Record intended outputs of project regarding achievement it needs

1. data mining goals
2. Business goals
3. Tools
4. Techniques

Project Plan

1 Business understanding

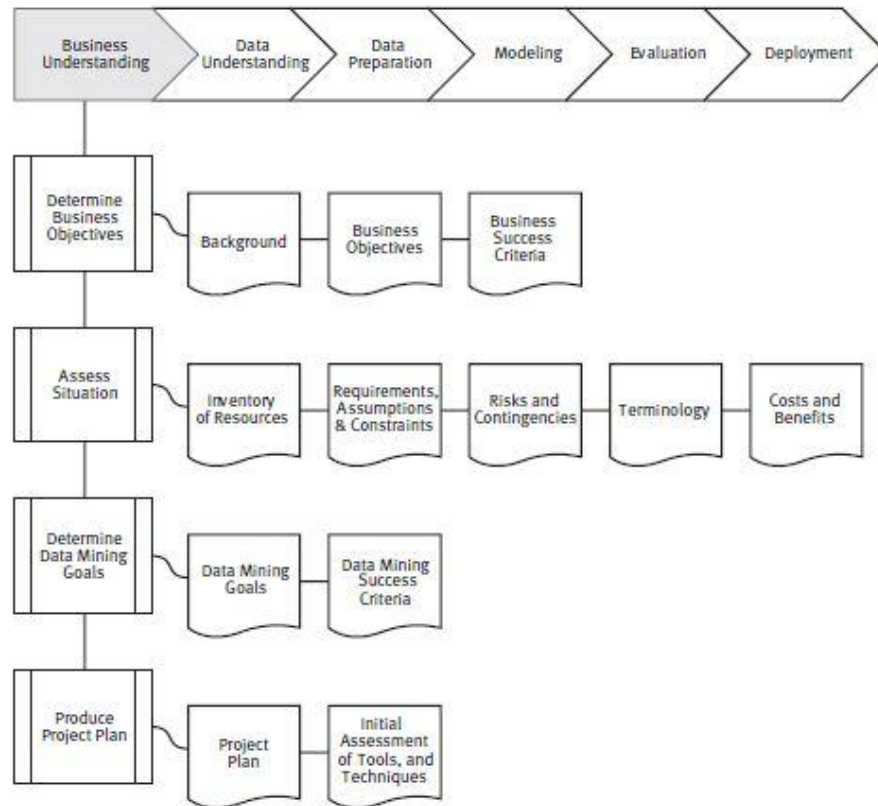


Figure 4: Business Understanding

DATA UNDERSTANDING



DATA UNDERSTANDING

1. Collect initial data
2. Describe data
3. Explore data
4. Verify data quality

OUTPUT

1. Collect initial data
2. List of datasets
3. Locations
4. Methods used to acquire

Initial data collection
report

1. Describe data
2. Properties of acquired data
3. Preliminary correlations
4. Visualisation, report techniques

Explain format of data,
quantity of data

1. is data complete?
2. Where are the errors
3. How common are the error

Data quality reporting
on where the problem
exist and possible
solutions

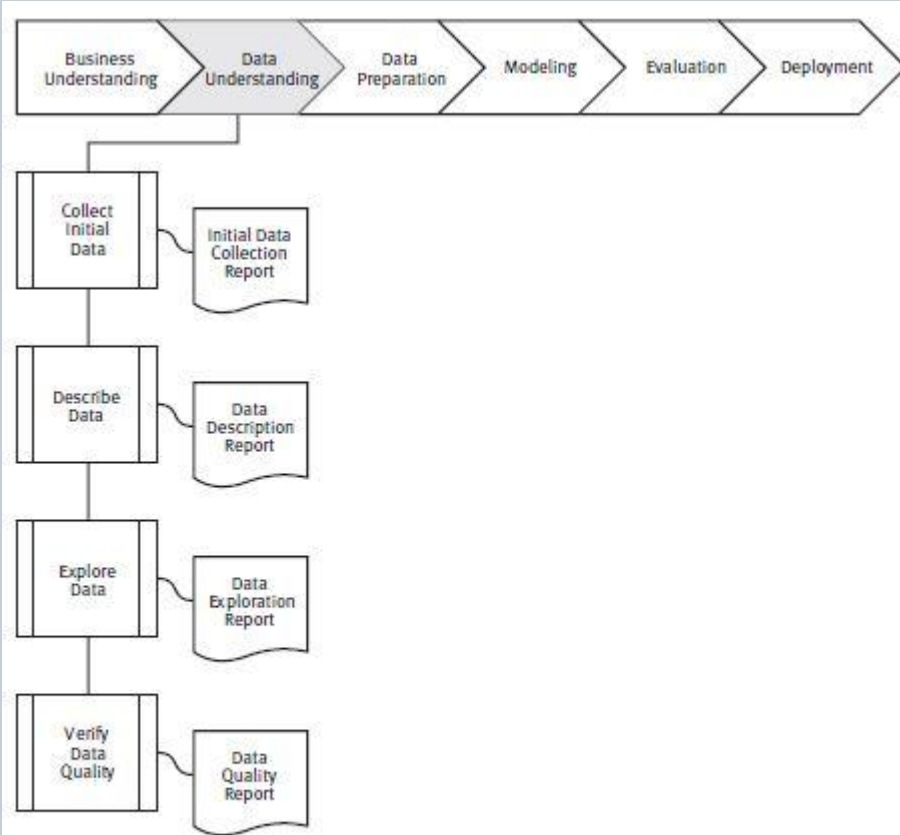


Figure 5: Data understanding

DATA PREPARATION



DATA PREPARATION

1. Select right data
2. Clean data
3. Extend data
4. format data

OUTPUTS

1. choose the data to use
2. Technical constraints
3. Quality

List the data to be included and rationale for the decision

1. Derive new attributes as needed
2. Production of new records
3. Transformed values

Explain the construction of the dataset

1. Produce a dataset which will be used for modelling and major analysis work

Describe the dataset that will be used for the work of the project.

THIS IS A SLIDE TITLE

- Here you have a list of items
- And some text
- But remember not to overload your slides with content

Your audience will listen to you or read the content, but won't do both.

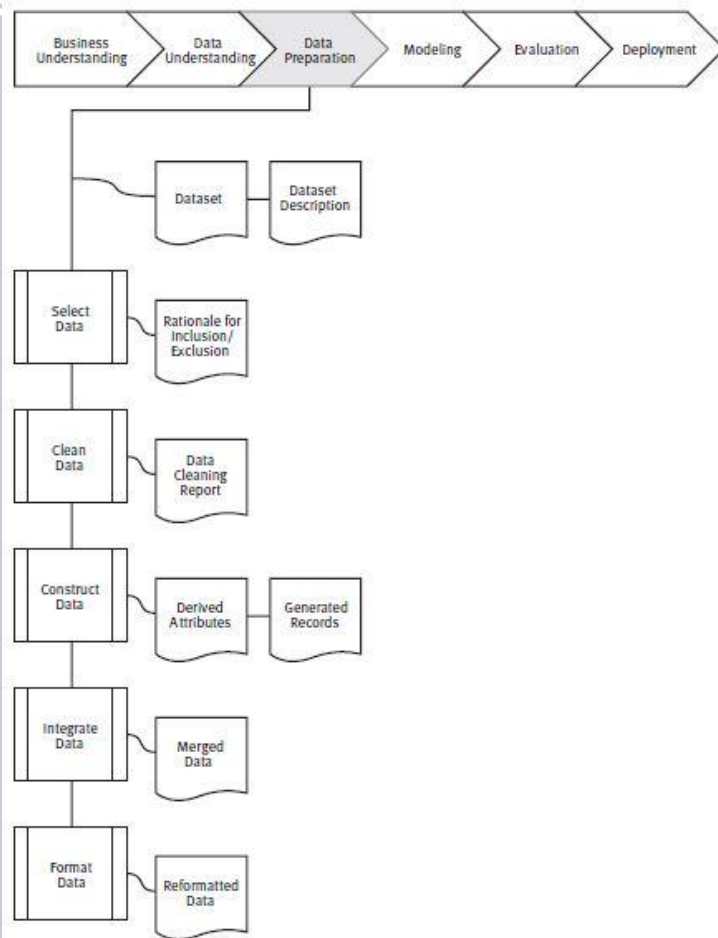


Figure 6: Data preparation

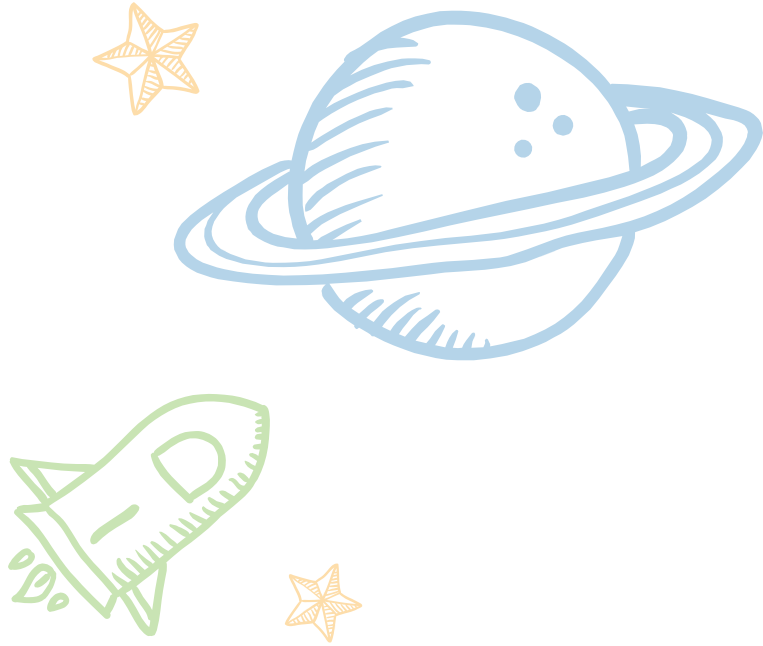


NEXT PRESENTATIONS

Will be on the first three stages of CRISP-DM

Please refer to output page &

<http://crisp-dm.eu/data-preparation/>



PROGRAMMING PROJECTS

The methodology which to
conduct them




Agile Methodology






BACKLOGGING

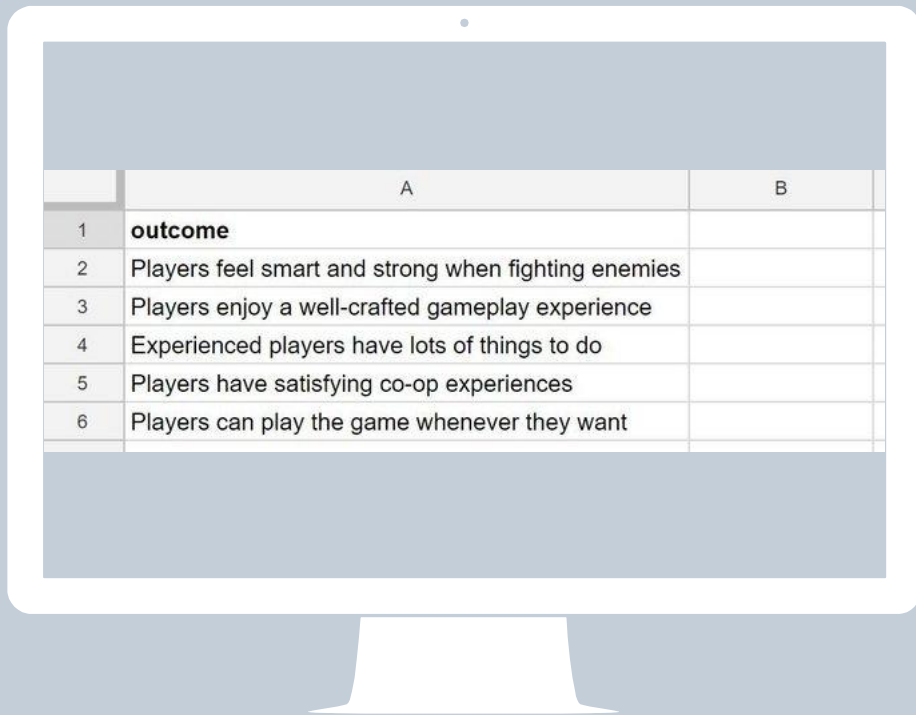
Backlogs & Vision & Mission



Backlog



<input type="checkbox"/>	Card title
<input type="checkbox"/>	Build a roadster for early adopters
<input type="checkbox"/>	Develop and grow a network of supercharging stations
<input type="checkbox"/>	Build a luxury sedan
<input type="checkbox"/>	Build a luxury SUV/crossover
<input type="checkbox"/>	Build a mass-market commuter vehicle
<input type="checkbox"/>	???
Add card	



STEP 1

Write the list of outcome we want to drive for our players

STEP 2: FLESH OUT THE BACKLOG

Create few outputs that we think will generate those outcomes. This is brainstorming so feel free to repeat outputs

	C	F
1	output supports...	output
2	Players feel smart and strong when fighting enemies	As a player, I can use basic skills and abilities to fight against a simple AI-controlled opponent.
3	Players enjoy a well-crafted gameplay experience	As a developer, I can see my changes in-game quickly so that I can test and iterate faster. (15-minute builds)
4	Players enjoy a well-crafted gameplay experience	As an artist, I can export 3D meshes from my favorite modelling software tool in under 5 minutes.
5	Players feel smart and strong when fighting enemies	As a player, I can fight against 5 different varieties of AI-controlled opponents.
6	Experienced players have lots of things to do	As a player, I can use complex skills and abilities to fight against a simple AI-controlled opponent.
7	Experienced players have lots of things to do	As a player, I can fight against AI-controlled opponents that are smarter than the average toaster.
8	Experienced players have lots of things to do	As a player, I can fight against 10 different varieties of AI-controlled opponents.
9	Players enjoy a well-crafted gameplay experience	As a developer, I can see my changes in-game quickly so that I can test and iterate faster. (7-minute builds)
10	Players enjoy a well-crafted gameplay experience	As an artist, I can export 3D meshes from my favorite modelling software tool in under 2 minutes.
11	Players have satisfying co-op experiences	As a player, I want to be matched with other players who are about the same skill level as me.
12	Players can play the game whenever they want	As a player, I want the matchmaking service to be online and healthy whenever I want to play a ranked game.

STEP 3: TOP-TO-BOTTOM ORDER OF PLAN

	E	F
1	item shorthand	output
2	load test harness	As a player, I want the matchmaking service to be online and healthy whenever I want to play a ranked game.
3	matchmaking service	As a player, I want to be matched with other players who are about the same skill level as me.
4	build pipeline improvements 1	As a developer, I can see my changes in-game quickly so that I can test and iterate faster. (15-minute builds)
5	build pipeline improvements 2	As a developer, I can see my changes in-game quickly so that I can test and iterate faster. (7-minute builds)
6	basic pve combat	As a player, I can use basic skills and abilities to fight against a simple AI-controlled opponent.
7	adv pve combat	As a player, I can use complex skills and abilities to fight against a simple AI-controlled opponent.
8	adv pve AI	As a player, I can fight against AI-controlled opponents that are smarter than the average toaster.
9	5 AI characters	As a player, I can fight against 5 different varieties of AI-controlled opponents.
10	5 more AI characters	As a player, I can fight against 10 different varieties of AI-controlled opponents.
11	basic 3D animation tools	As an artist, I can export 3D meshes from my favorite modelling software tool in under 5 minutes.
12	adv 3D animation tools	As an artist, I can export 3D meshes from my favorite modelling software tool in under 2 minutes.

STEP 4: FLESH OUT THE BACKLOG

Stack rank the priority. Remember to stack rank strictly (1,2,3,4,5 instead of 1,1,1,2,2,2,3,3,3 for priority)

	D	E
1	output stack rank	item shorthand
2		1 load test harness
3		2 matchmaking service
4		3 build pipeline improvements 1
5		4 build pipeline improvements 2
6		5 basic pve combat
7		6 adv pve combat
8		7 adv pve AI
9		8 5 AI characters
10		9 5 more AI characters
11		10 basic 3D animation tools
12		11 adv 3D animation tools

	D	E	G
1	output stack rank	item shorthand	player value
2		1 load test harness	2
3		2 matchmaking service	2
4		3 build pipeline improvements 1	3
5		4 build pipeline improvements 2	2
6		5 basic pve combat	5
7		6 adv pve combat	4
8		7 adv pve AI	3
9		8 5 AI characters	5
10		9 5 more AI characters	3
11		10 basic 3D animation tools	3
12		11 adv 3D animation tools	1

STEP 5: MAXIMIZE MARGINAL RETURNS TO PLAYER VALUE

Using a 1 to 5 scale,
outline which feature will
maximize the player
value

MANAGE DEPENDENCIES

	D	E	G	H	I	J
1	output stack rank	item shorthand	player value	urgency	risk	depends on
2	1	adv pve combat	4	3	high	basic pve combat
3	2	adv pve AI	3	2	high	basic pve combat
4	3	5 more AI characters	3	2	high	5 AI characters
5	4	basic pve combat	5	5	medium	
6	5	5 AI characters	5	5	medium	basic 3D animation tools
7	6	adv 3D animation tools	1	3	medium	basic 3D animation tools
8	7	build pipeline improvements 2	2	2	medium	build pipeline improvements 1
9	8	load test harness	2	1	medium	
10	9	build pipeline improvements 1	3	4	low	
11	10	basic 3D animation tools	3	4	low	
12	11	matchmaking service	2	2	low	

GENERAL RULE OF THUMB

Stack Ranks

Leverage strict stack ranks so that the team always knows what to work on next

Player time

Always try to make the most player value with your time

Importance

Sometimes things that are important aren't important today. Do them later

Risk

Go after the big risks first - if you're gonna fail, fail fast

Dependencies

Adjust for dependencies

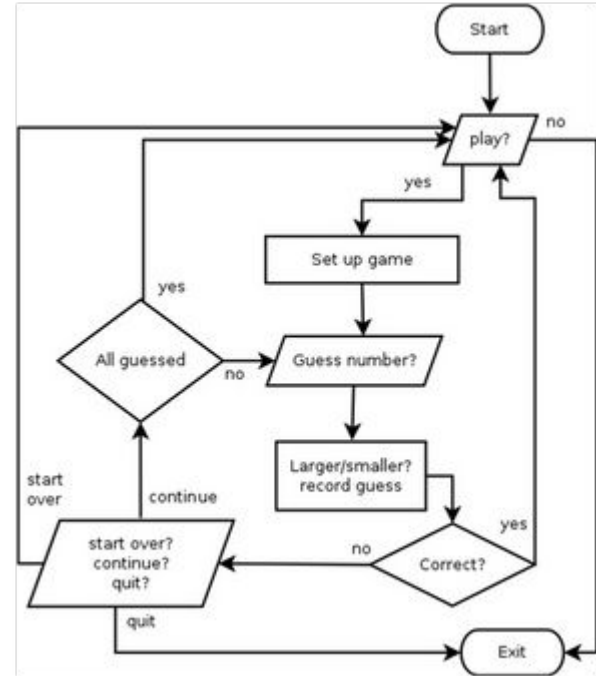
Trust your team

Trust that your team will complete their job in a nice orderly fashion.

FLOWCHART OF HOW THE CODE WORKS

<https://app.diagrams.net/>

Please create a flowchart of
The game explaining how it
Will work.



Worksheet ☆ 📁 🌐

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	A	B	C
1			
2	item	output	
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+ ☰ brainstorming management +

Worksheet ☆ 📁 🌐

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100% \$ % .0_ .00 123 Default (Ari... 10 B I A

	A	B	C	D	E
1					
2	output stack rank	short hand		player value	dependency
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+ ☰ brainstorming management +

COLAB

Only use colab to copy paste the code. Please do not use it for real-time collaboration.

You may use it individually, please do not use one colab file simultaneously.



NEXT PRESENTATIONS

Explain the backlog spreadsheet

Present flow chart diagram of your code



NO DATUM NEXT WEEK!

