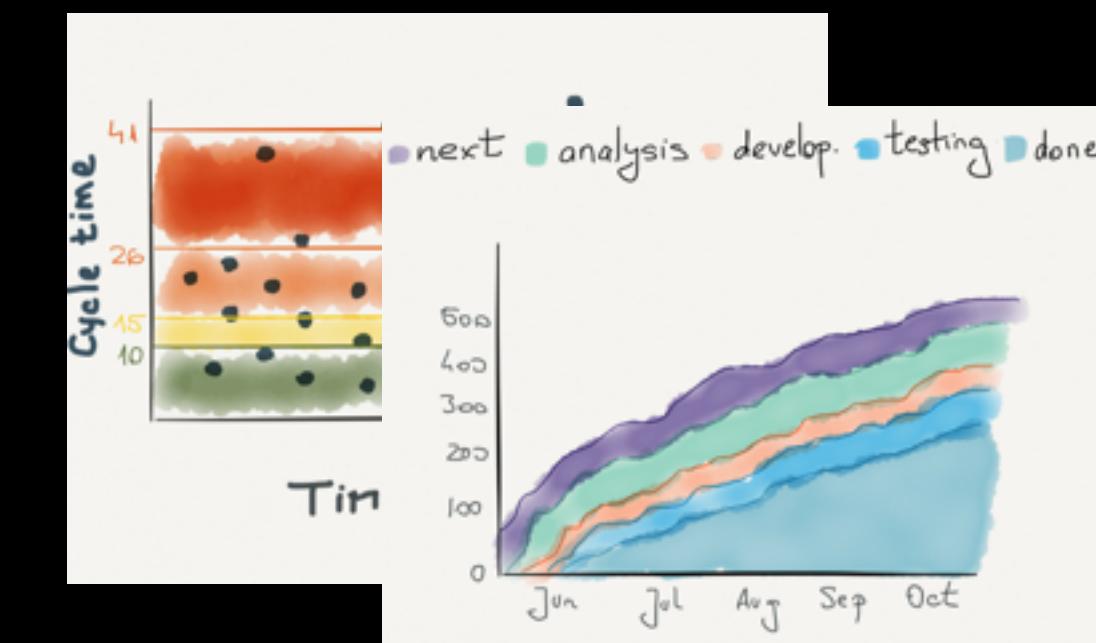
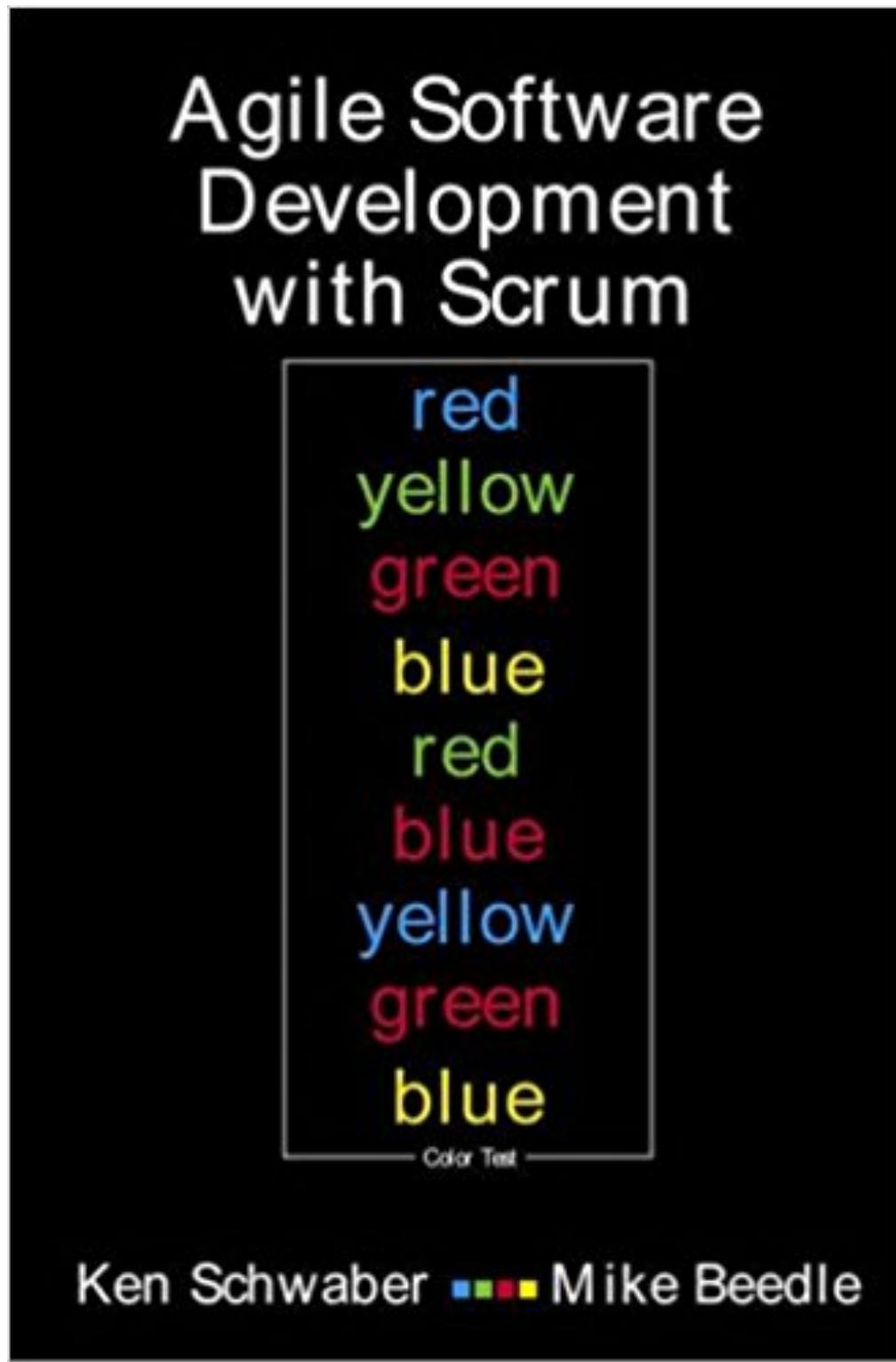
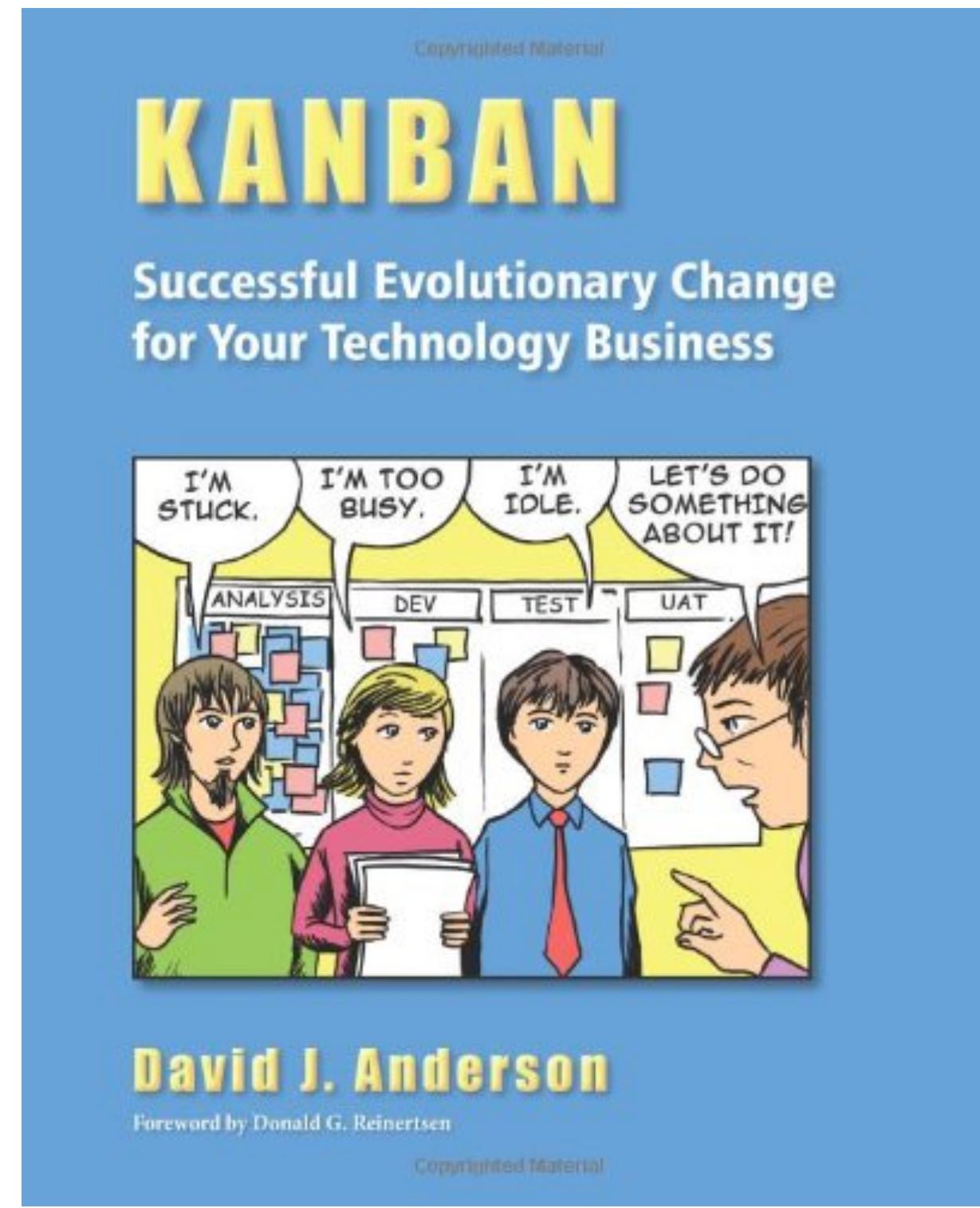
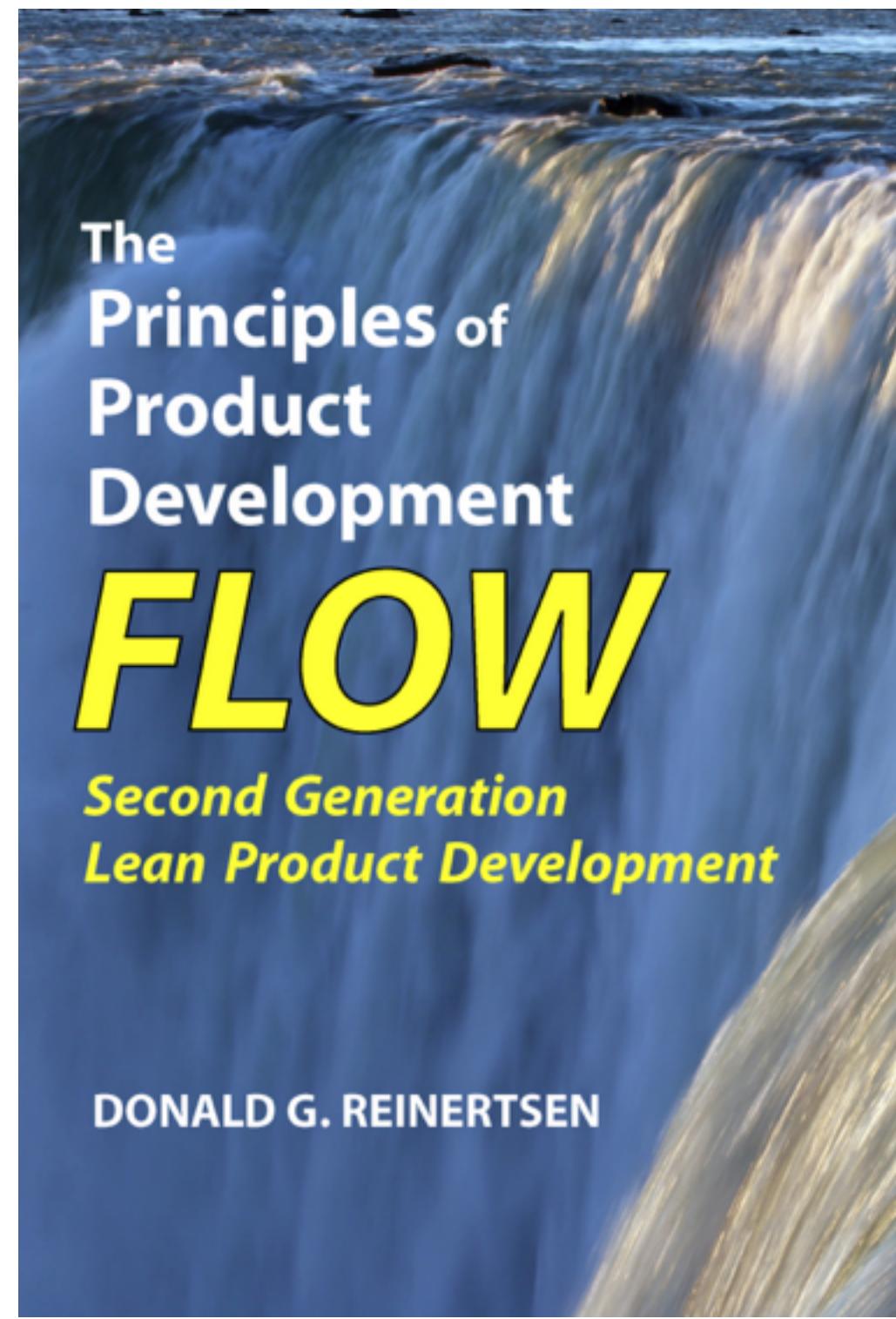


Agile deep dive

Peter Pito

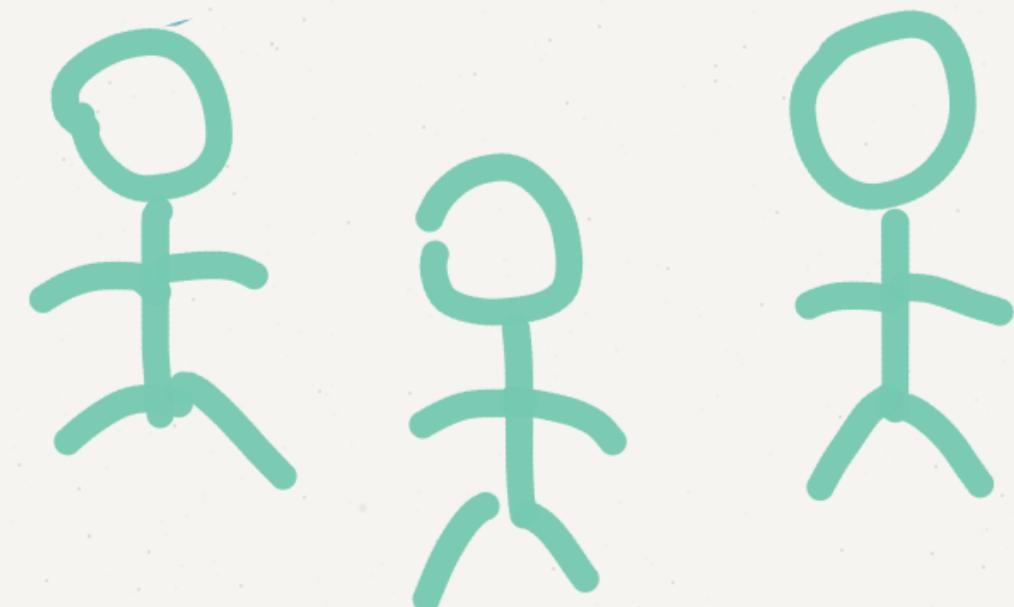




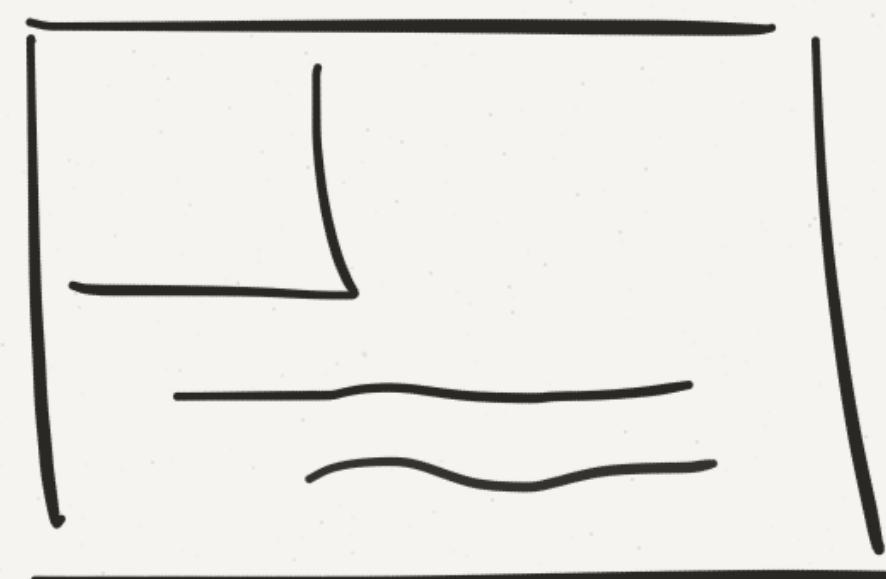
Define work



SCOPE

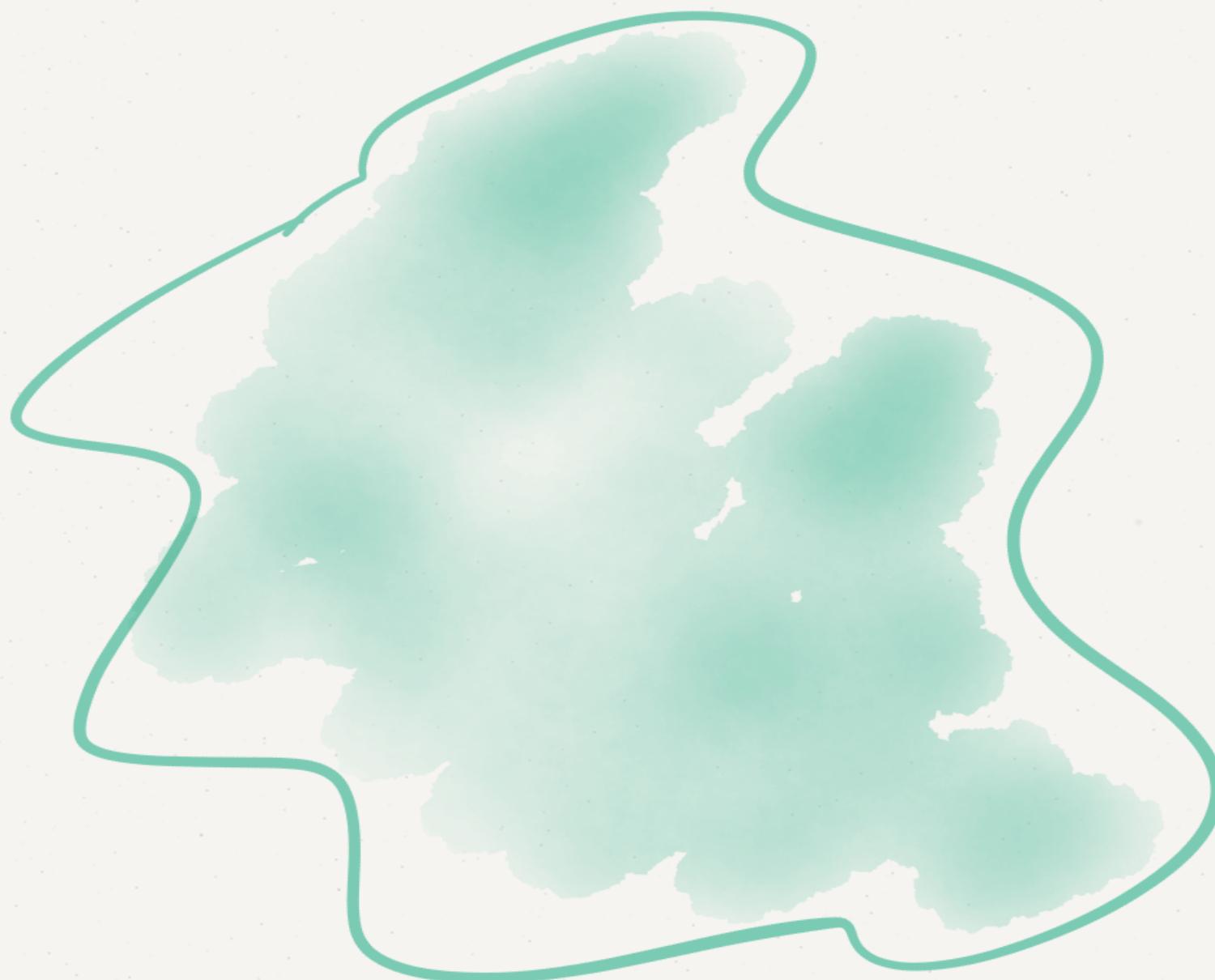


TEAM

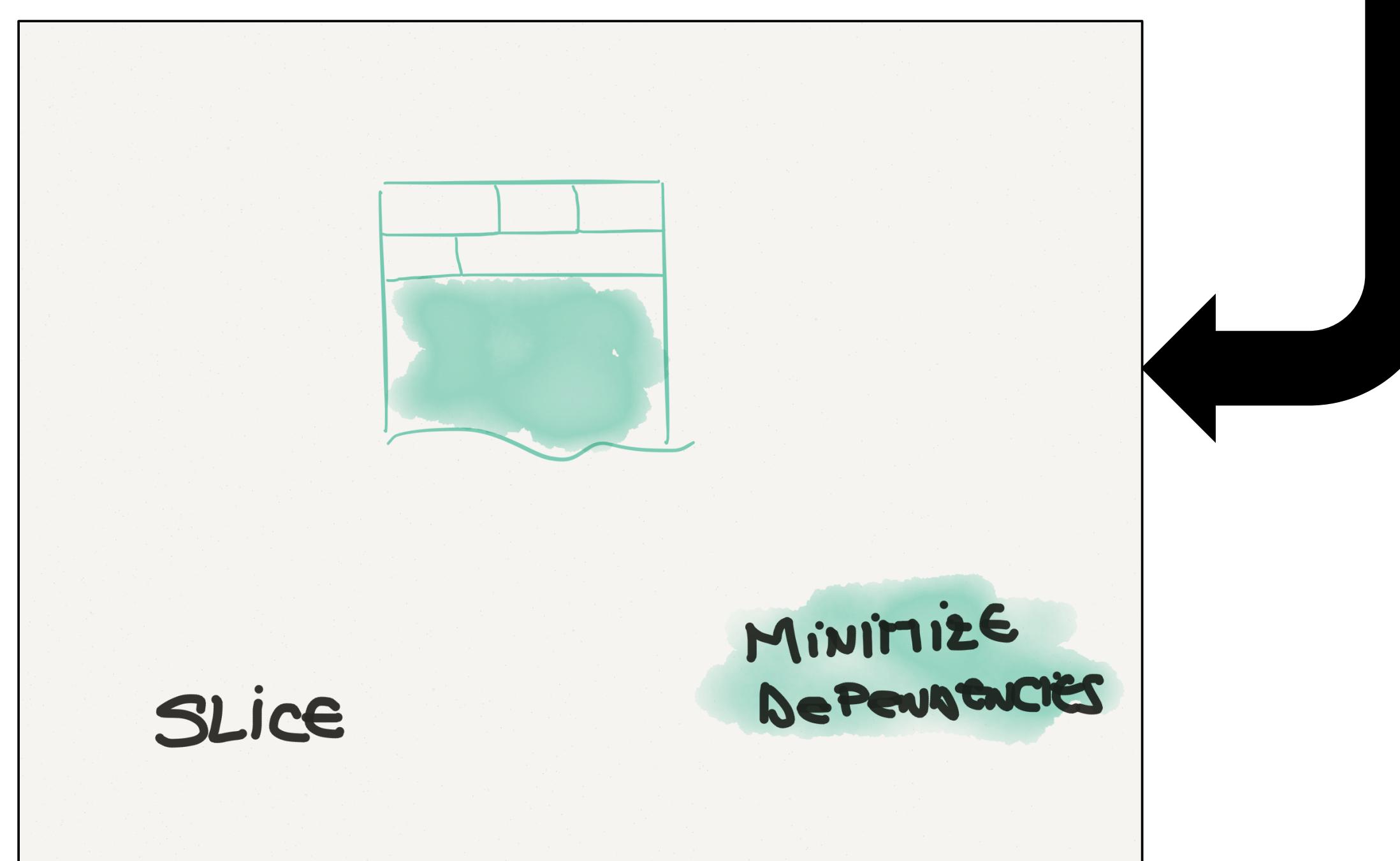
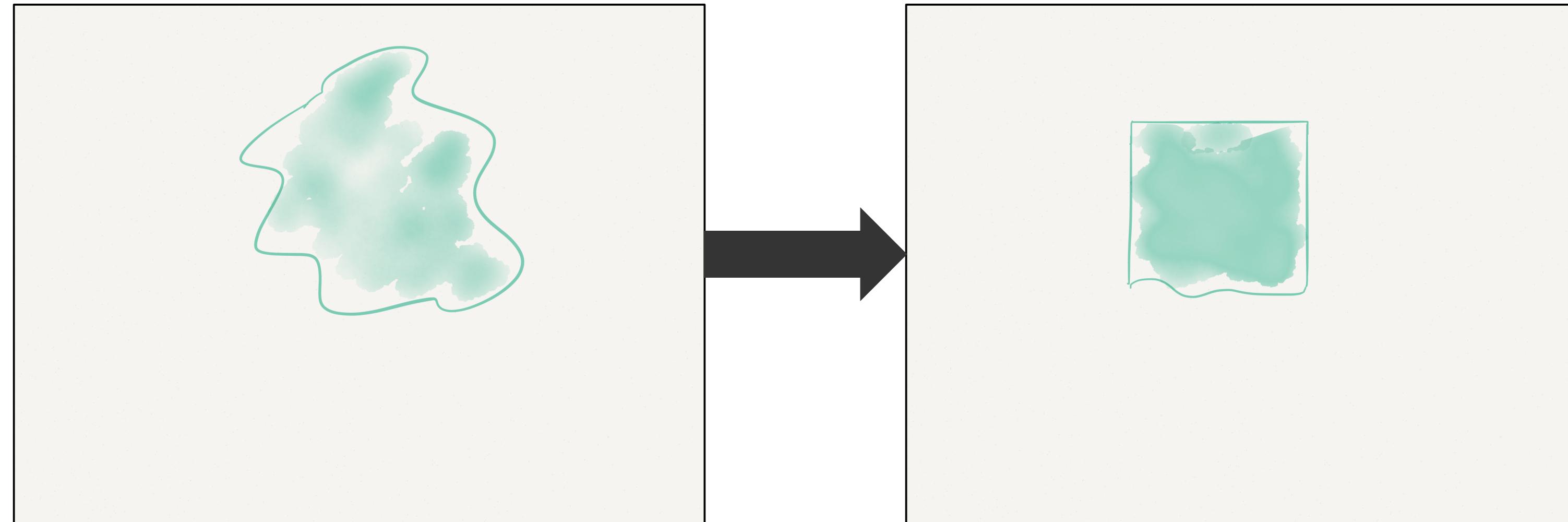


BUILD SOFTWARE

Scope

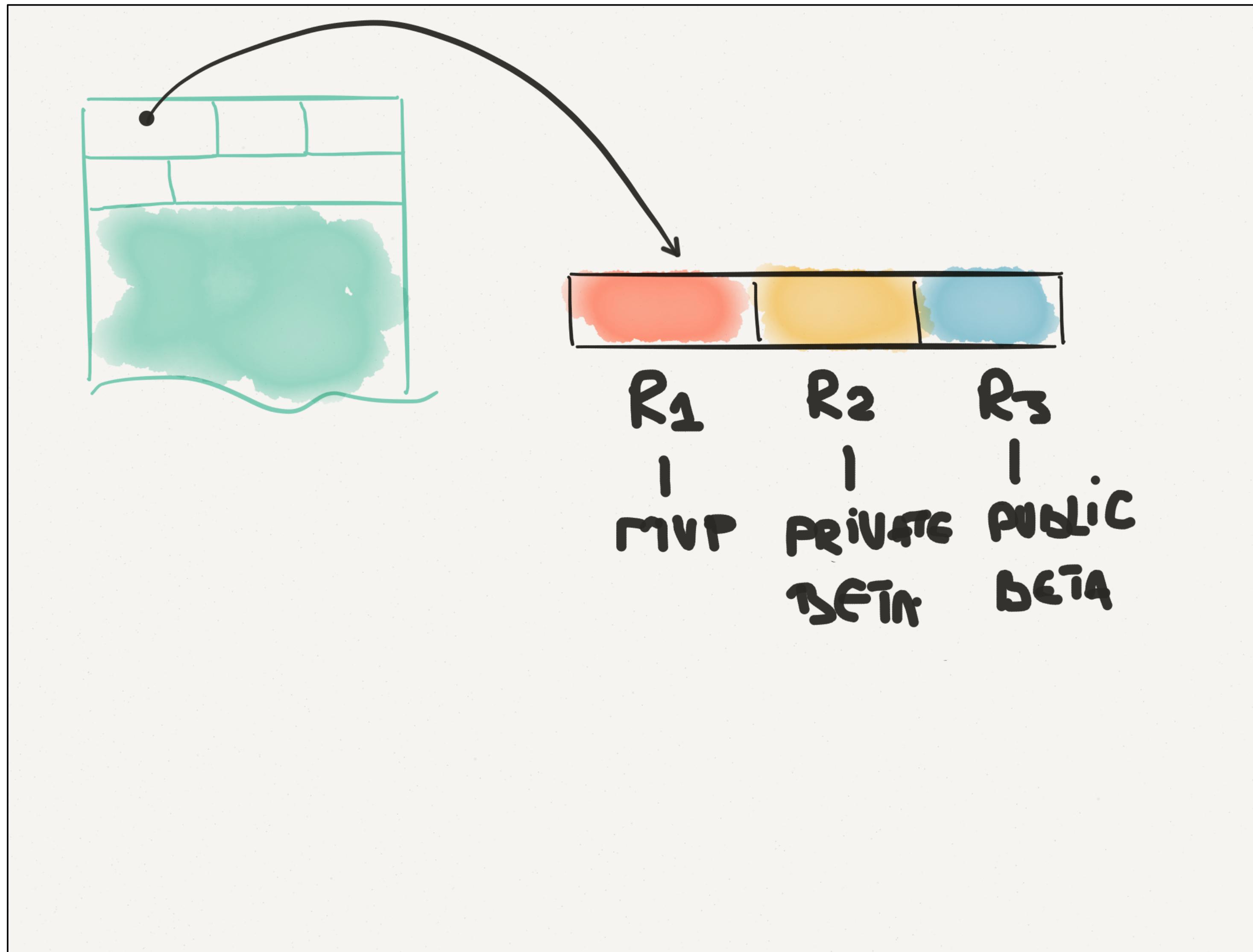


Scope – from Fuzzy to Sliceable

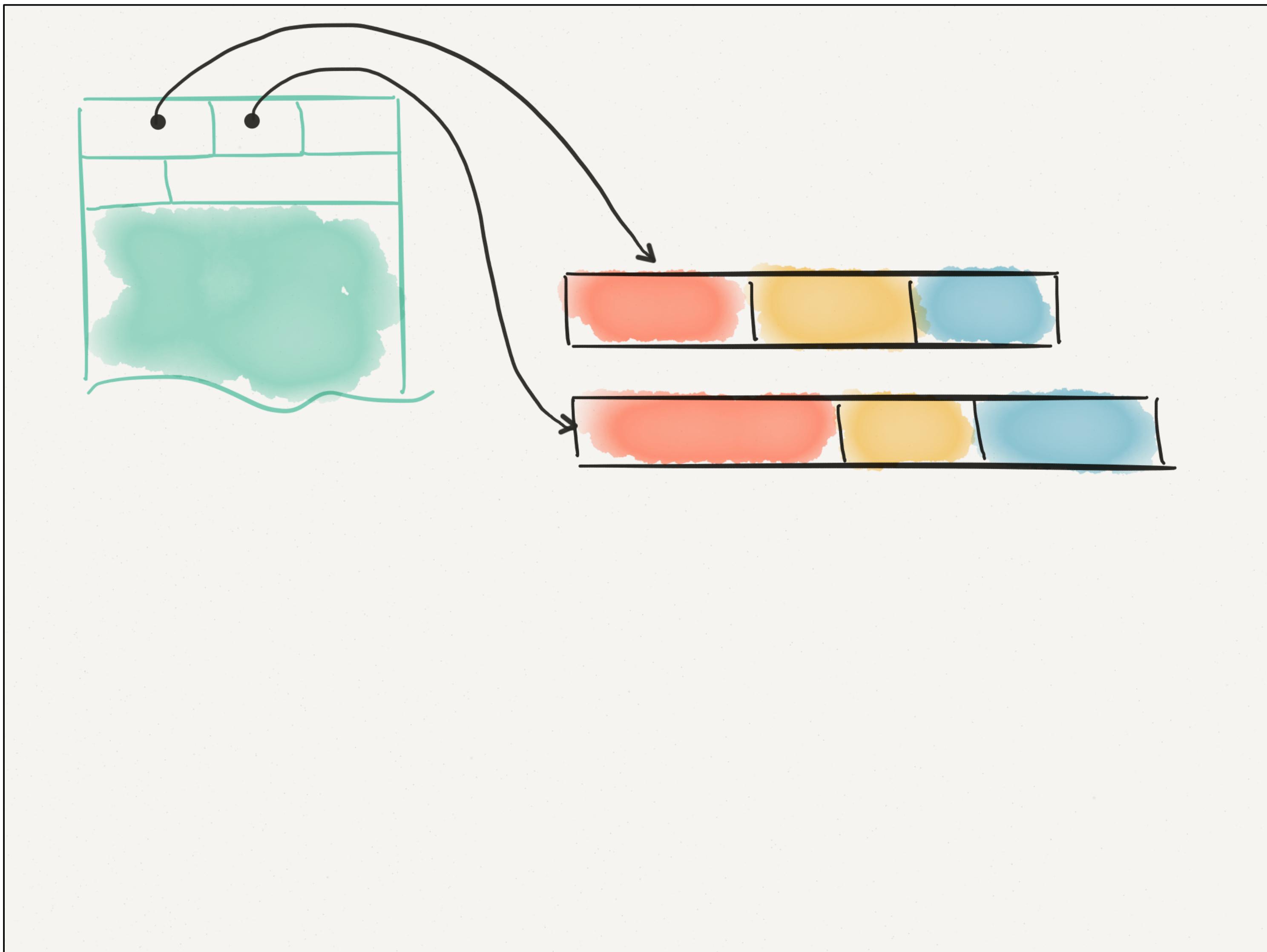


Schedule

Schedule

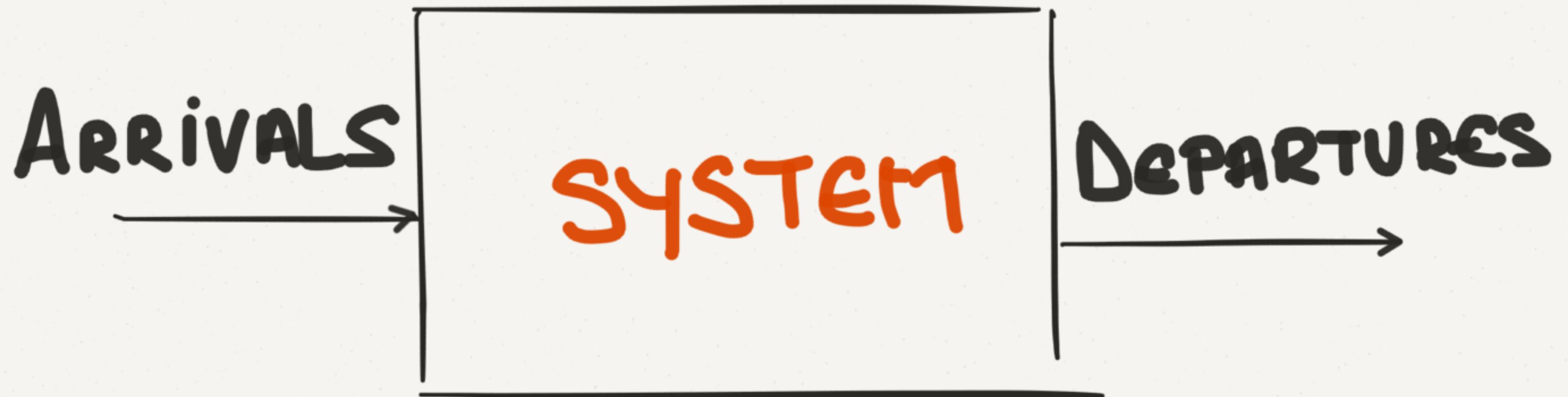


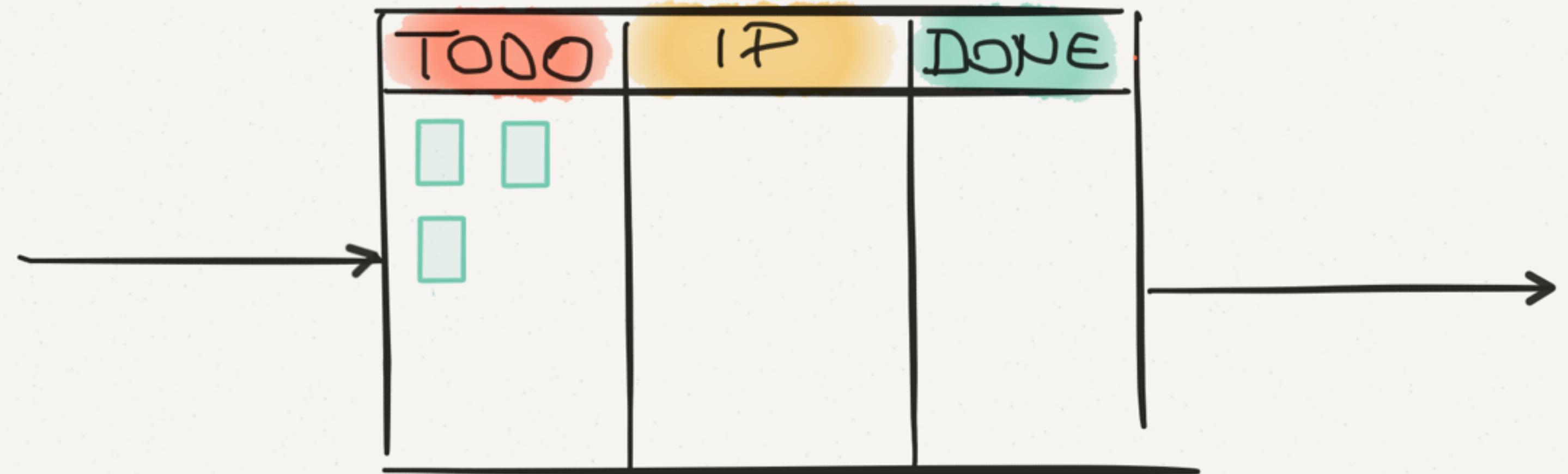
Schedule

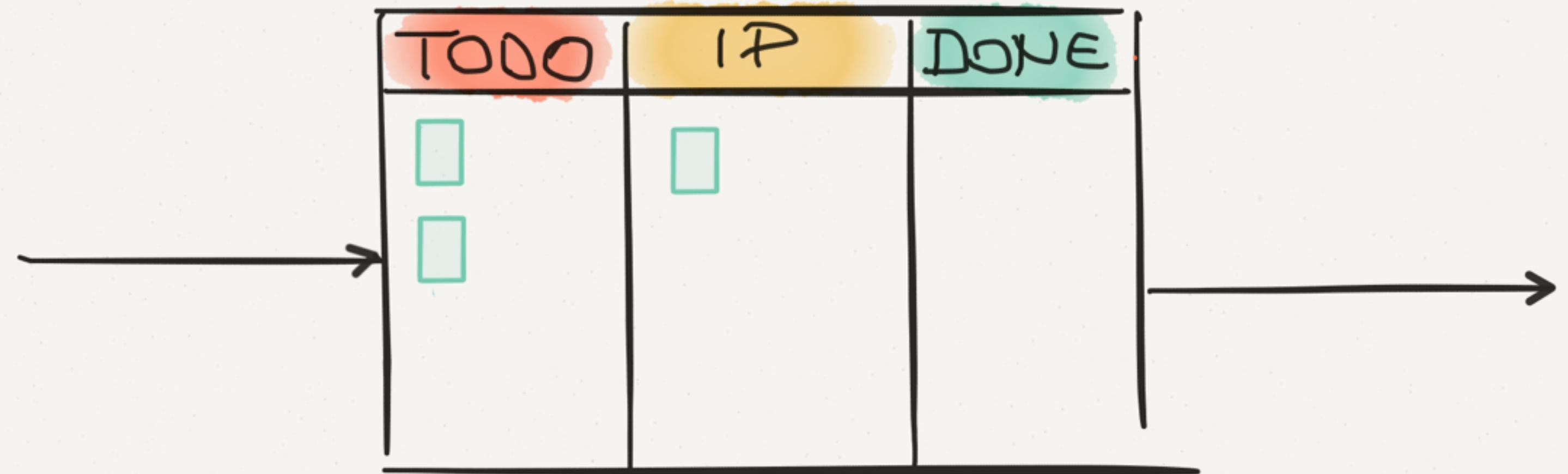


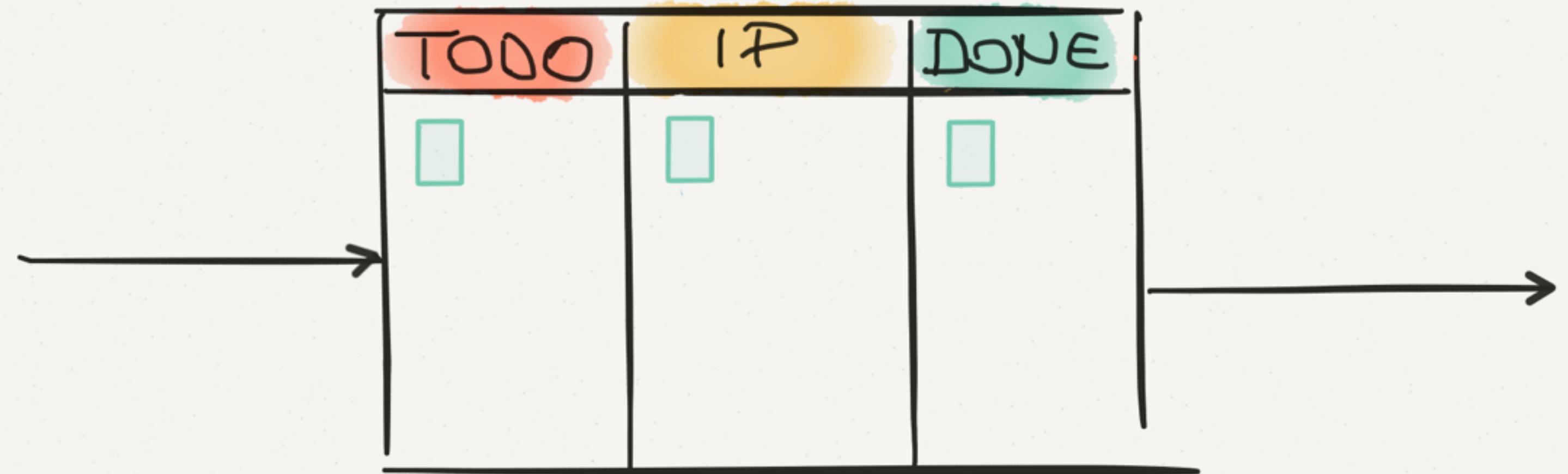
Kanban

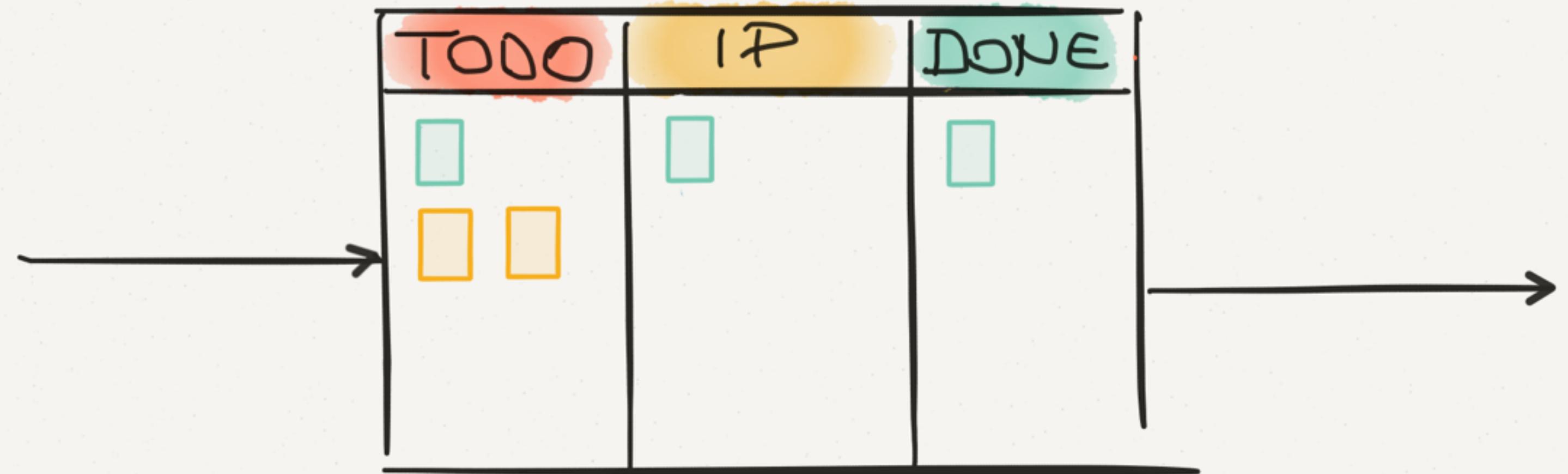
Kanban system

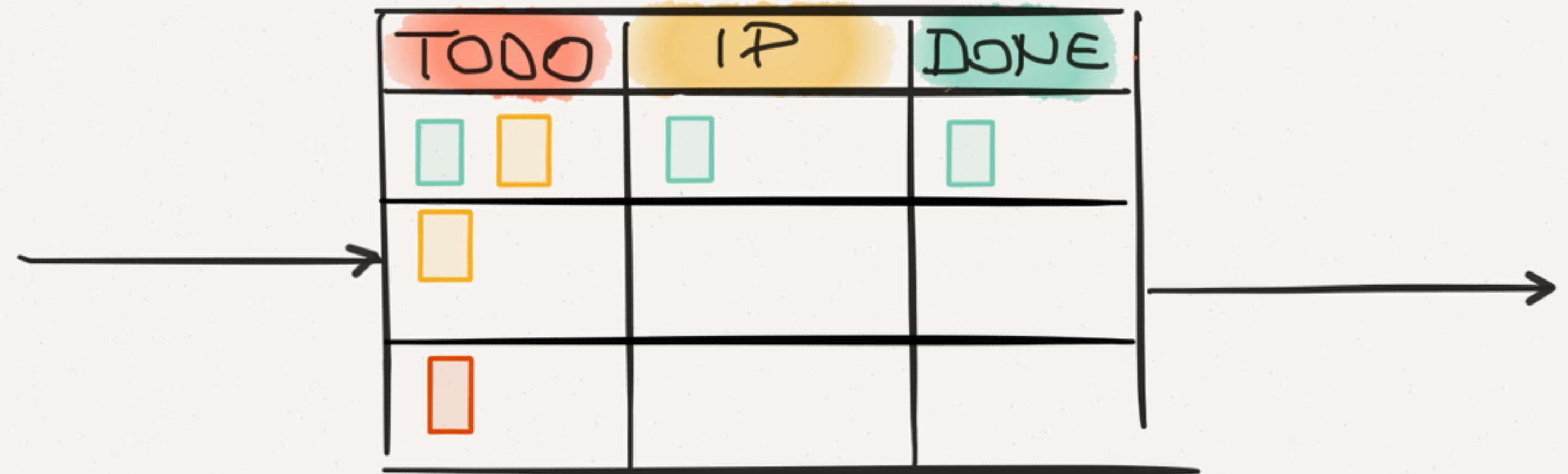


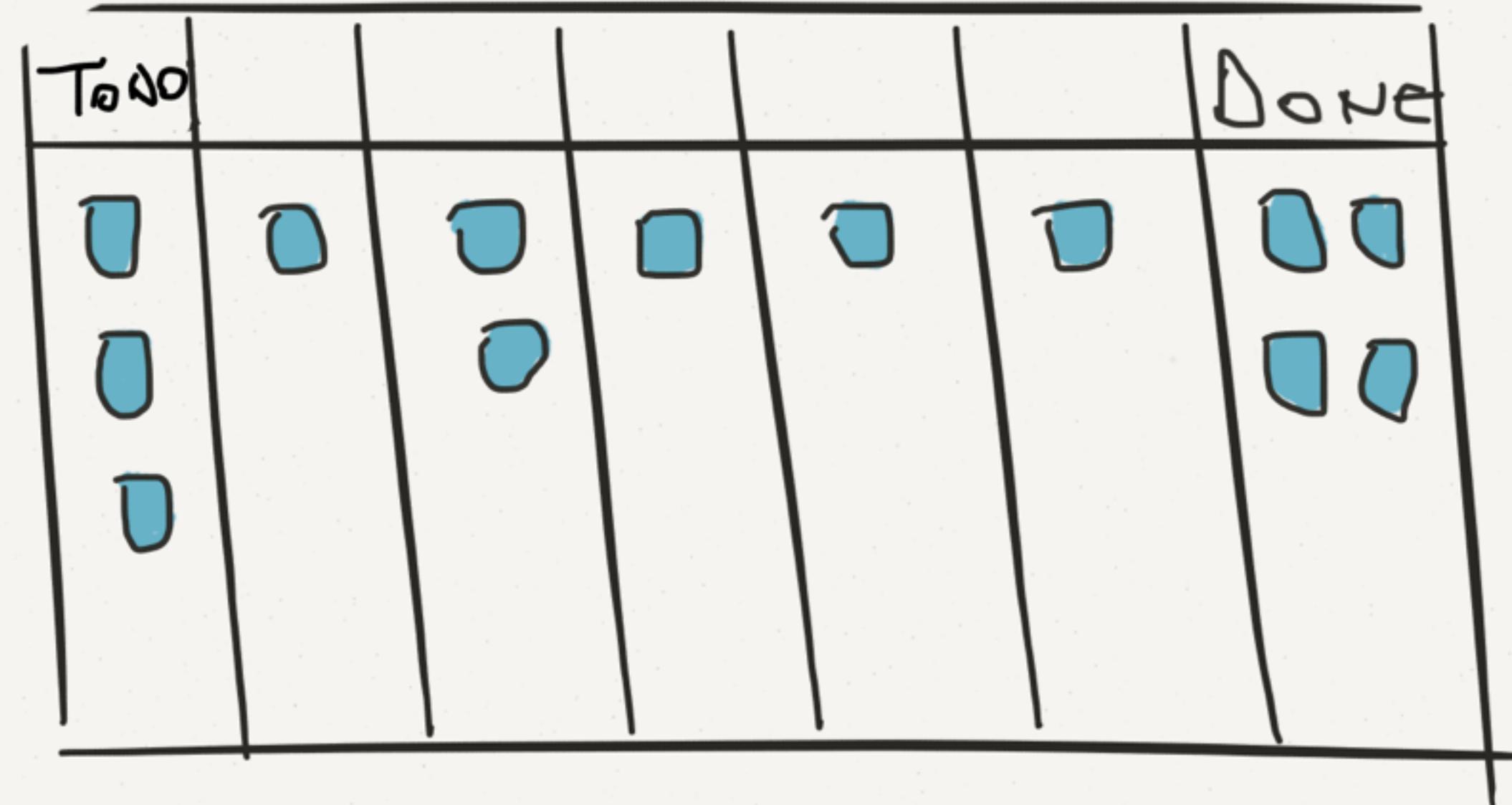


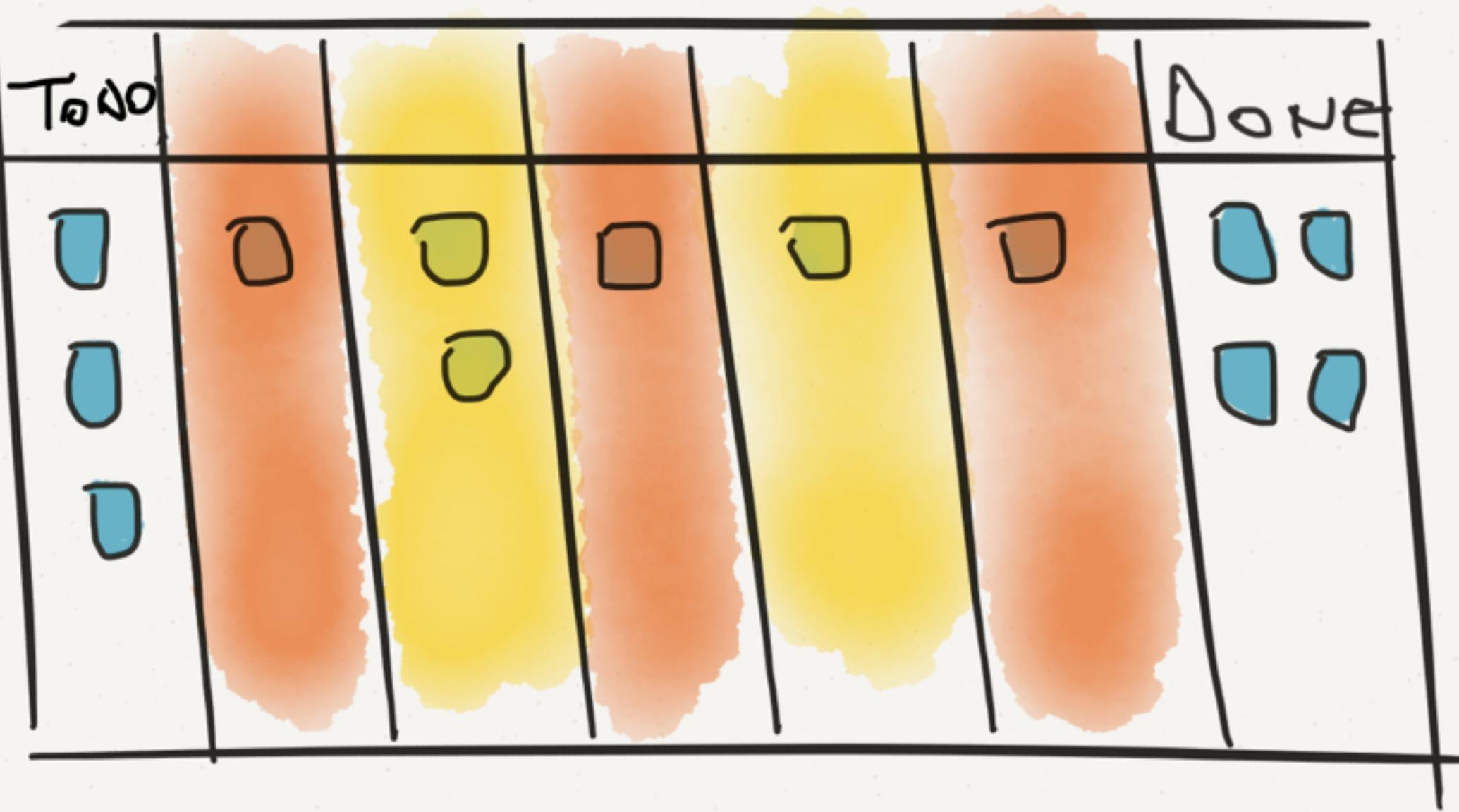






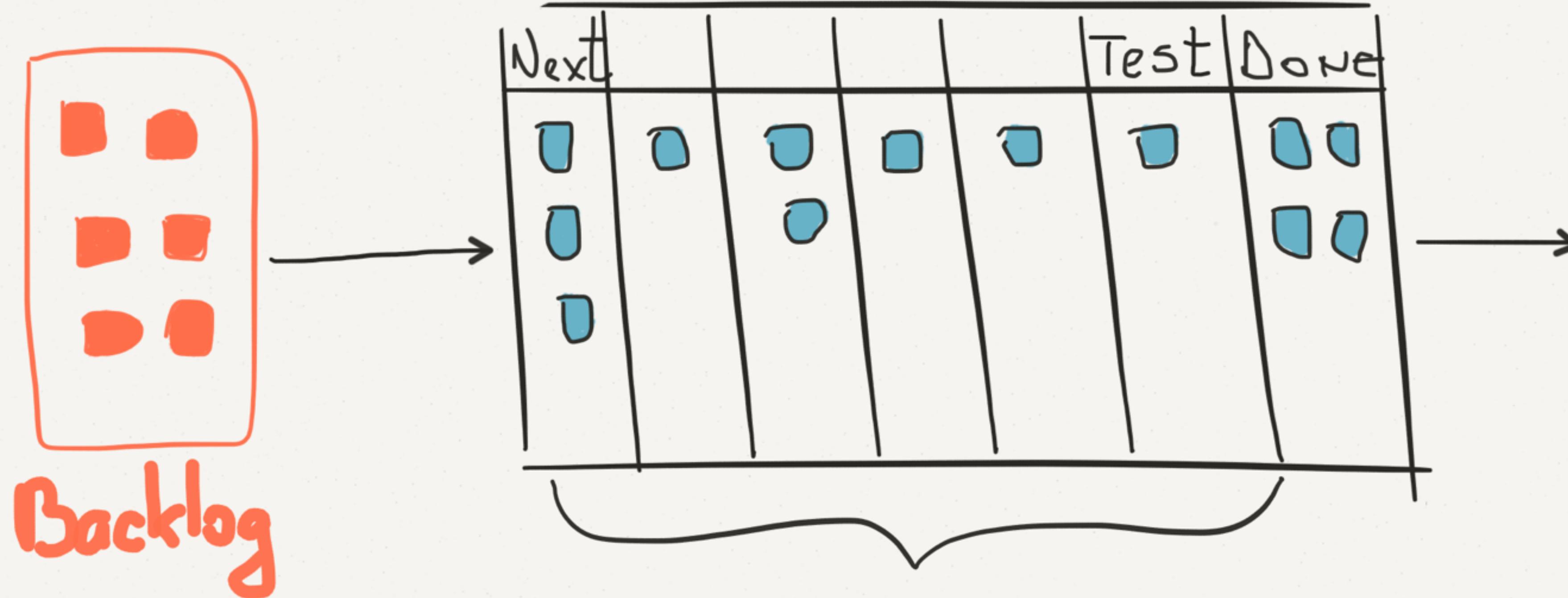




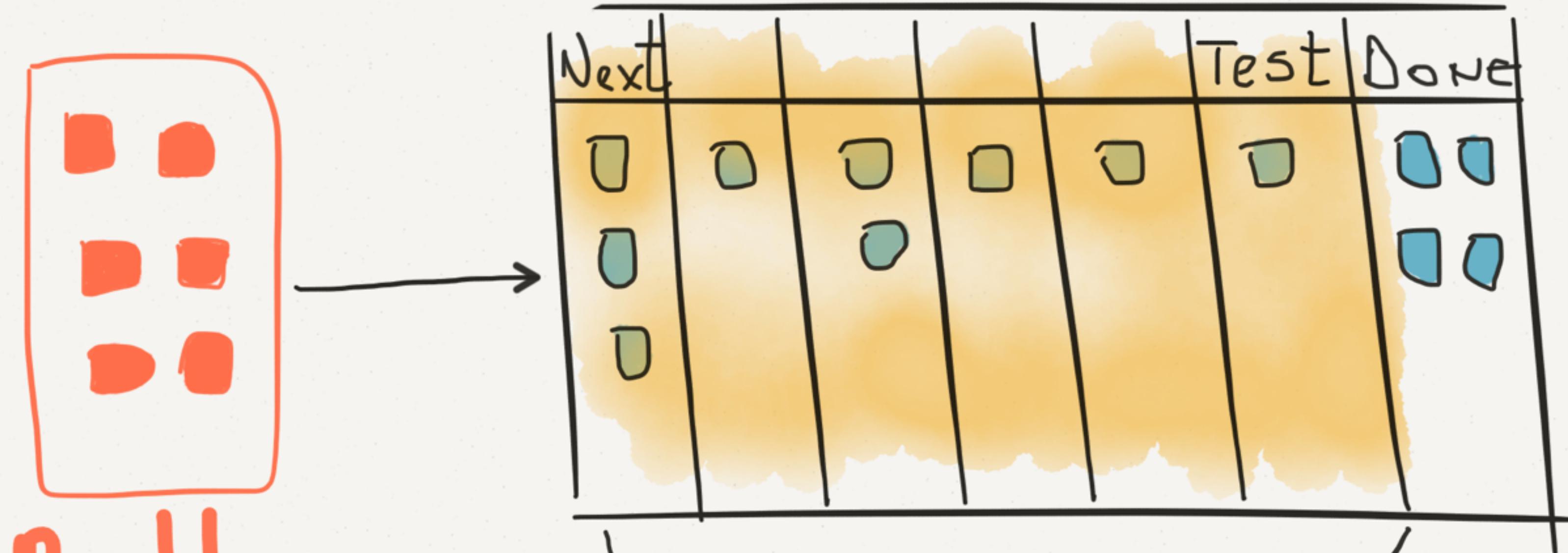


Work in a Kanban System

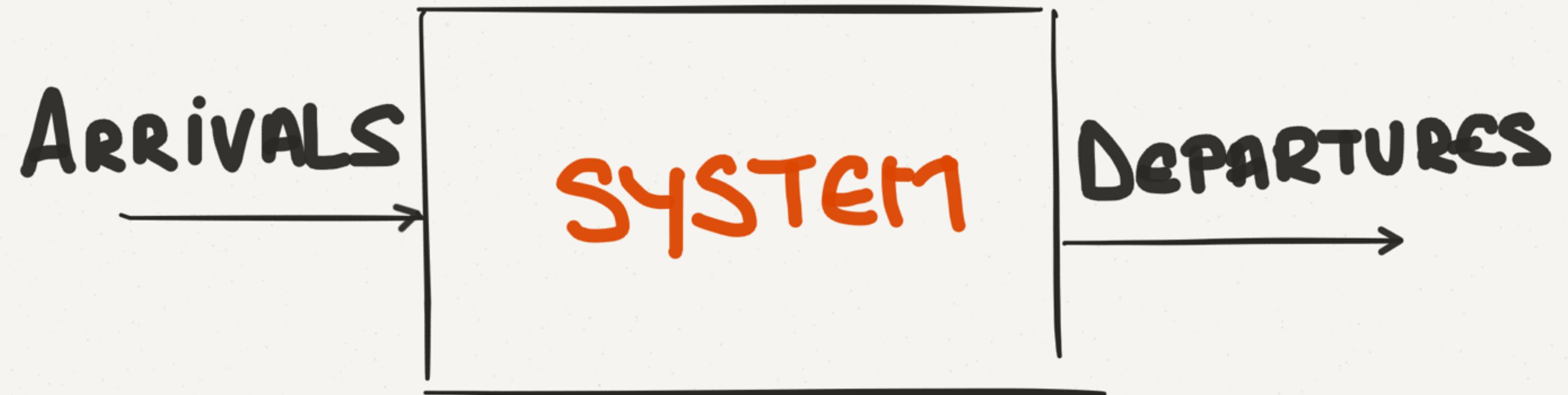
Define Work in Progress

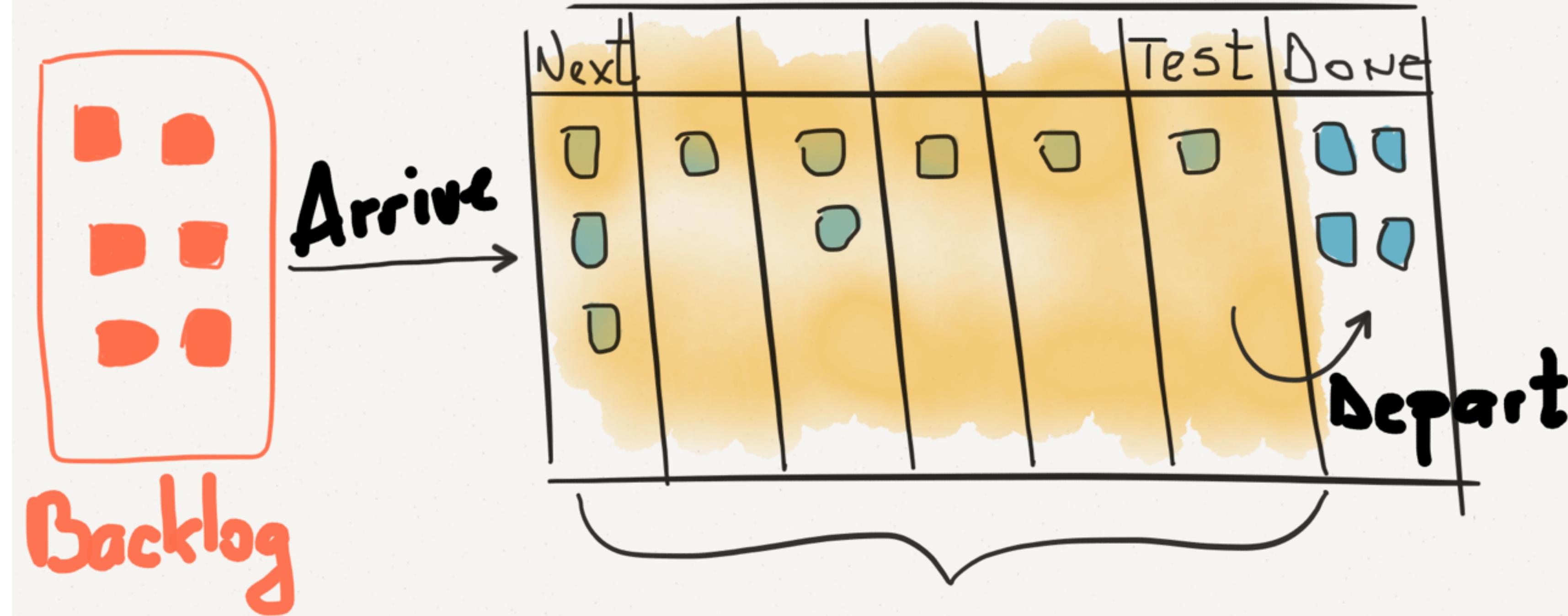


WORK IN PROGRESS



Work In Progress

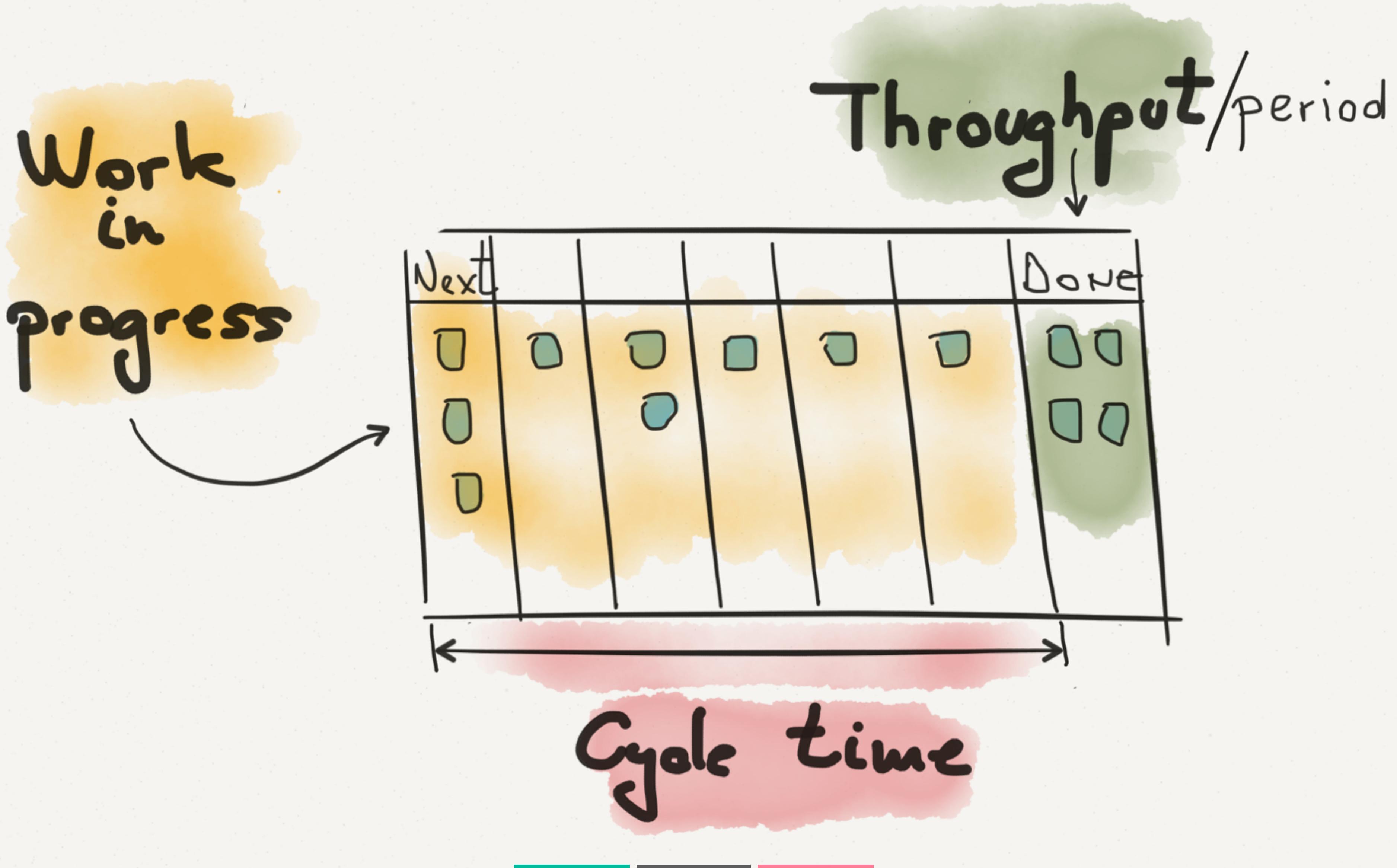




Work In Progress

Preservation of flow

Measure ‘Cycle time’ and ‘Throughput’



Little's Law

$$\text{Cycle time}^* = \frac{\text{WIP}^*}{\text{Throughput}^*}$$

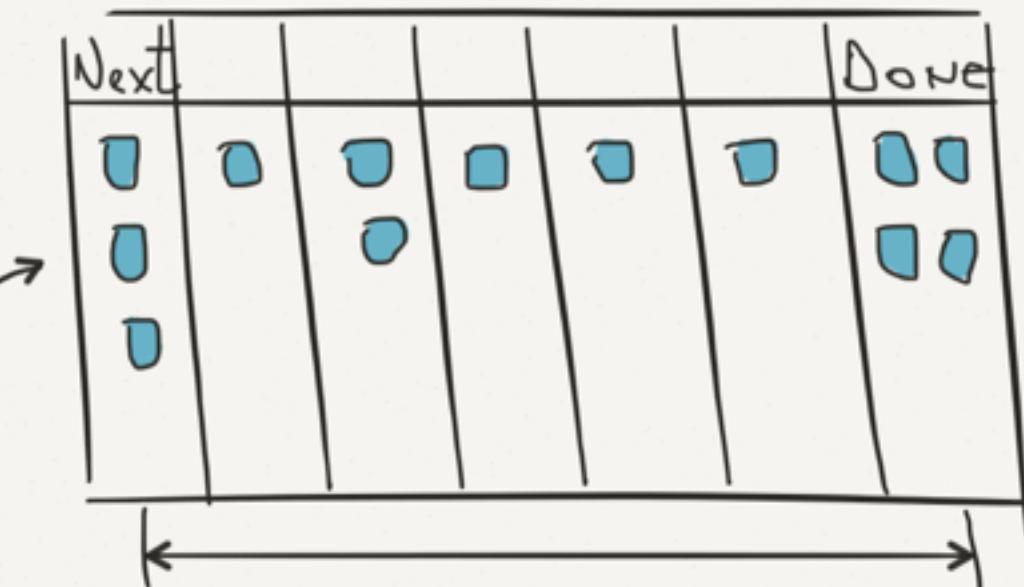
* Average

LITTLE'S LAW

$$\text{Cycle time} = \frac{\text{WIP}}{\text{Throughput}}$$

Work
in
progress

Throughput



Cycle time

Little's Law assumptions

1. The average of **Arrival Rate should equal** the average of **Departure Rate** (Throughput).
 2. All work that is **started** will eventually **be completed and exit the system**.
 3. The amount of WIP should be roughly the same at the beginning and at the end of the time interval chosen for calculation.
 4. The average **age of WIP** is neither increasing nor decreasing.
 5. Cycle Time, WIP and Throughput must be all measured using consistent units.
- 

Every time an assumption of
Little's Law is violated the
process becomes less
predictable.

Every time.



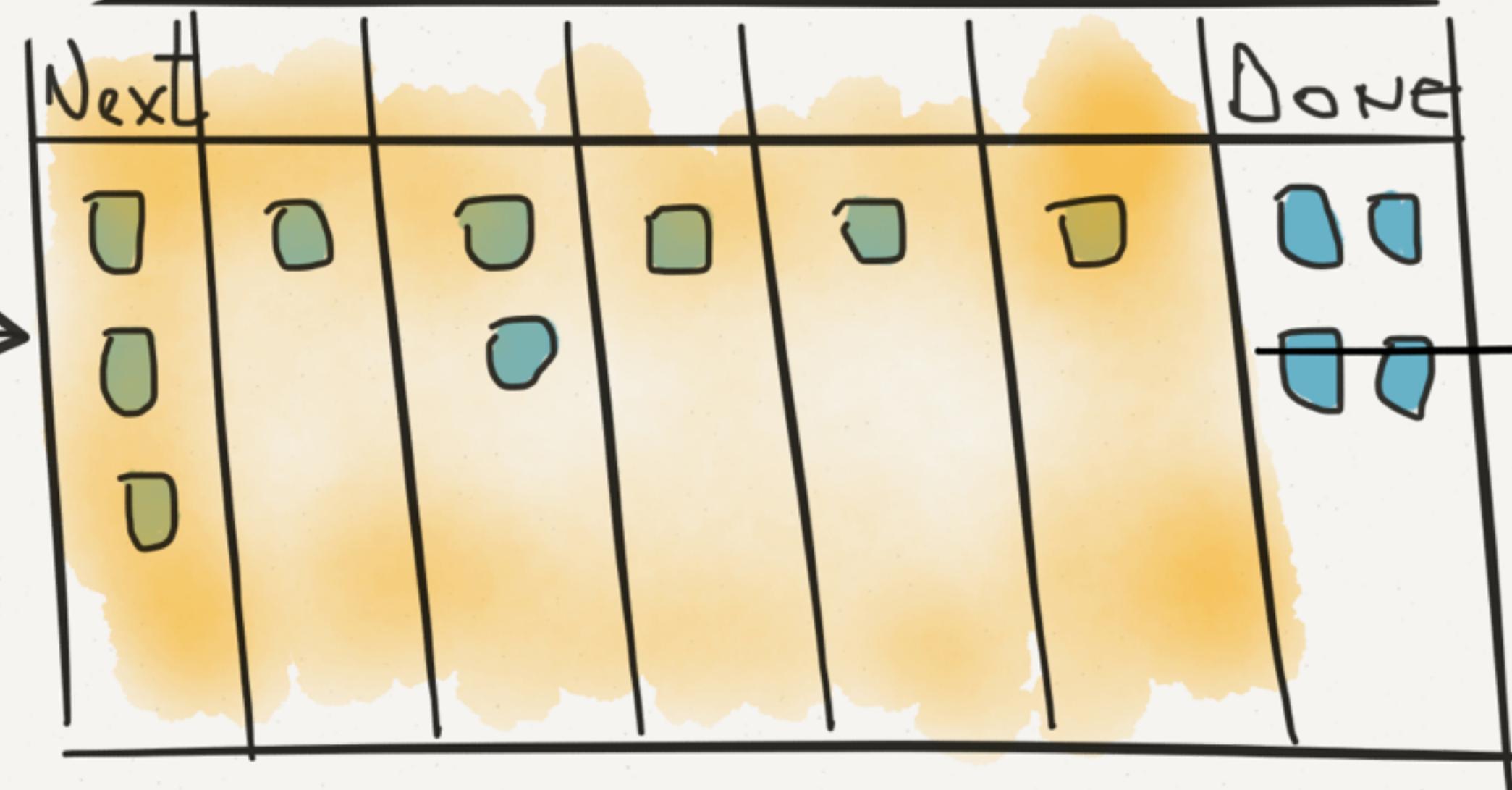
Protect Assumptions
as
Process Policies



Assumptions as Process Policies

- We will start new work about the same time we finish old work
- We will make every reasonable effort to finish all work that is started
- If work becomes blocked we will do everything possible to unlock it as expeditiously as possible
- We will monitor our policies around the order in which we pull items through so that work items do not sit and age unnecessarily

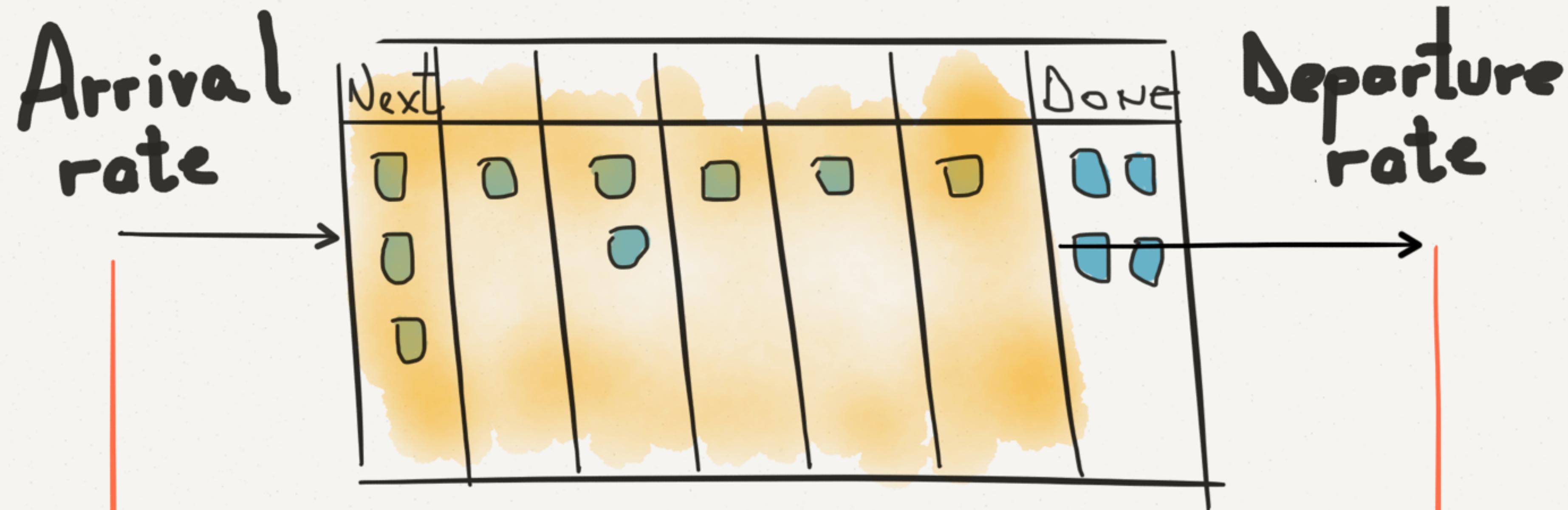
Arrival
rate



Departure
rate

MATCH

PRESERVATION
OF FLOW

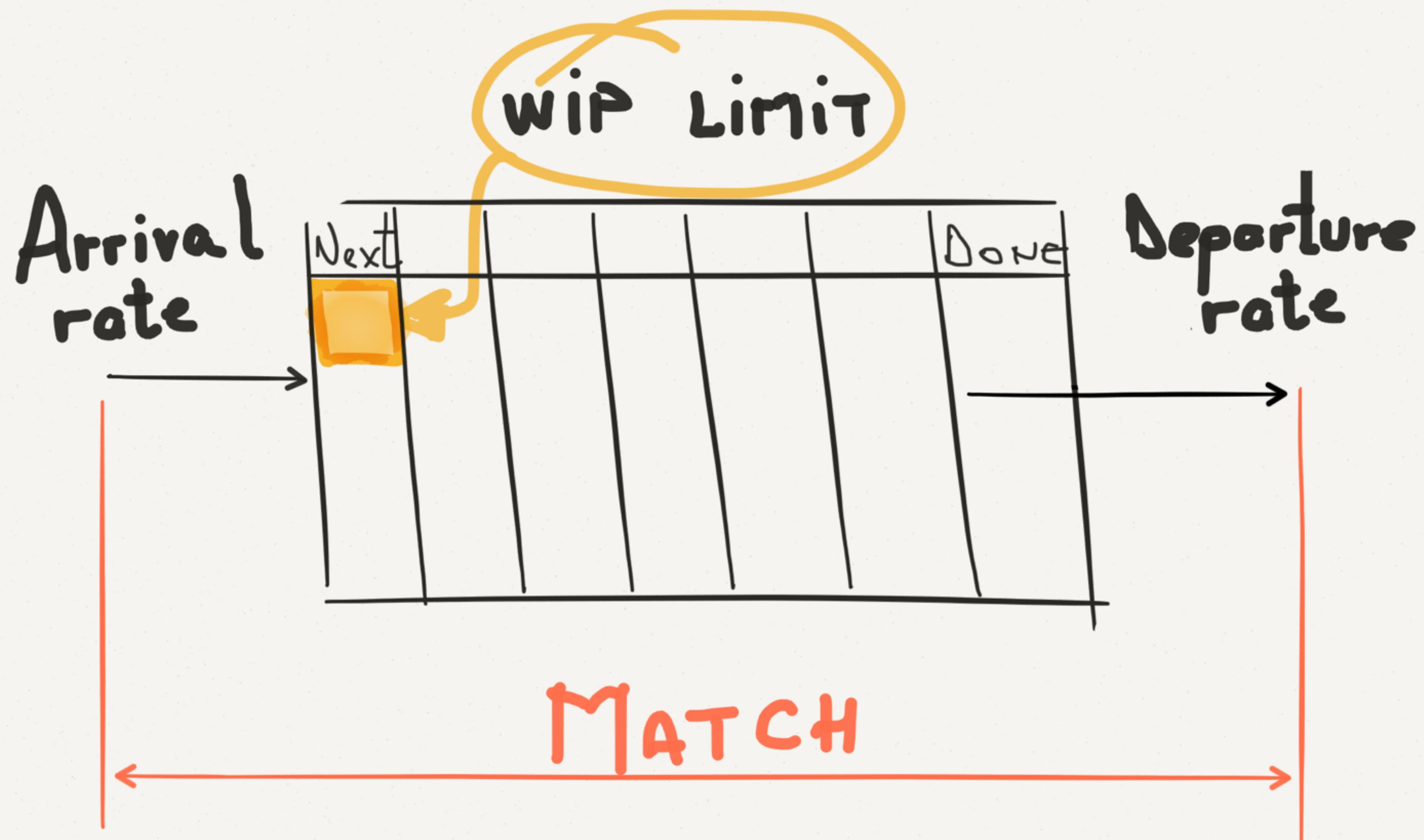


MATCH

LITTLE'S LAW

$$\text{Cycle time} = \frac{\text{WIP}}{\text{Throughput}}$$

PRESERVATION
OF FLOW



PRESERVATION
OF FLOW

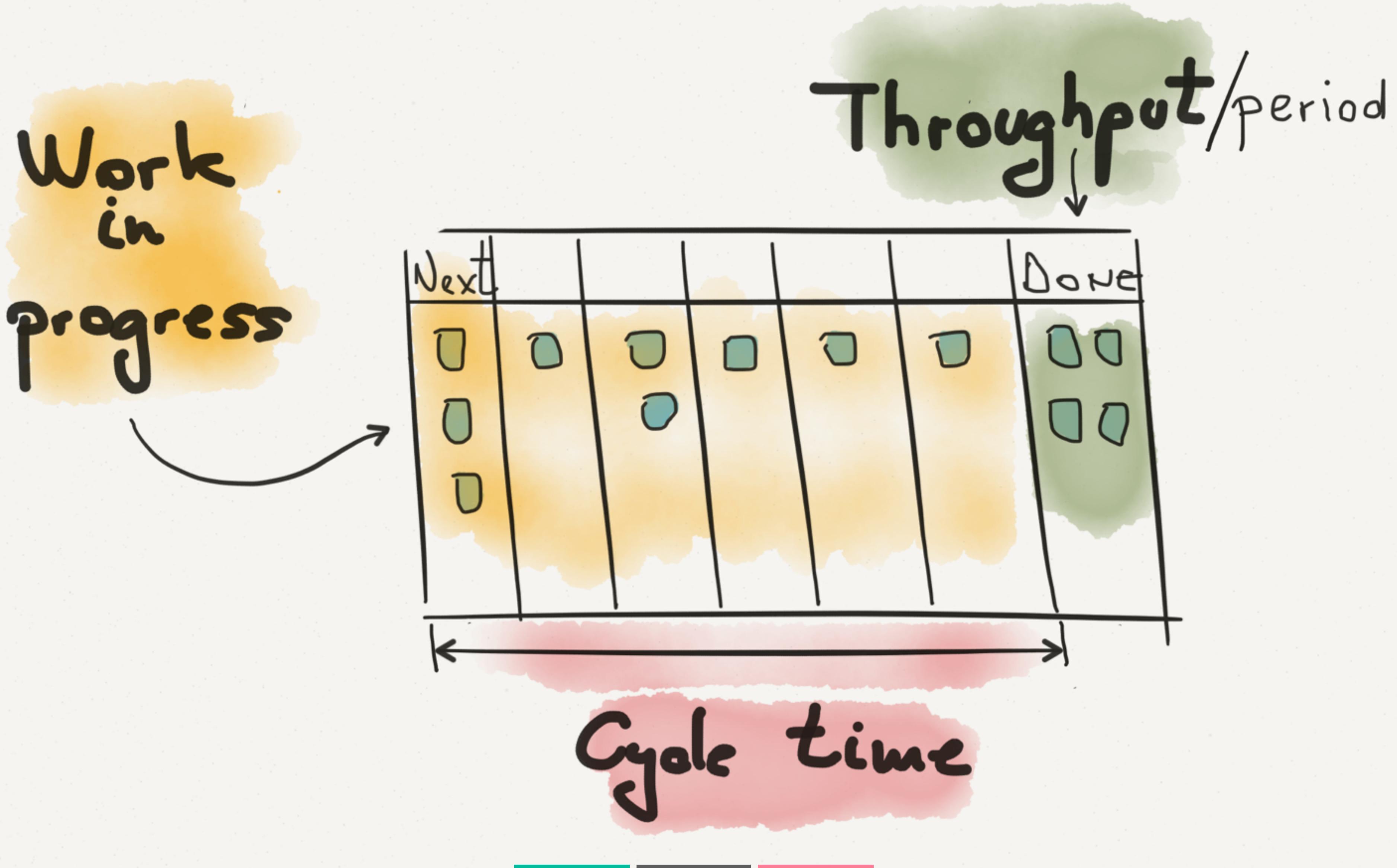
Limit WIP across the system

Introduce WIP limiters across all states

NEXT	ANALYSIS IN PROGRESS	ANALYSIS DONE	DEV IN PROGRESS	DEV DONE	TEST	DONE
	wip LIMIT	wip LIMIT	wip LIMIT	w.l.		

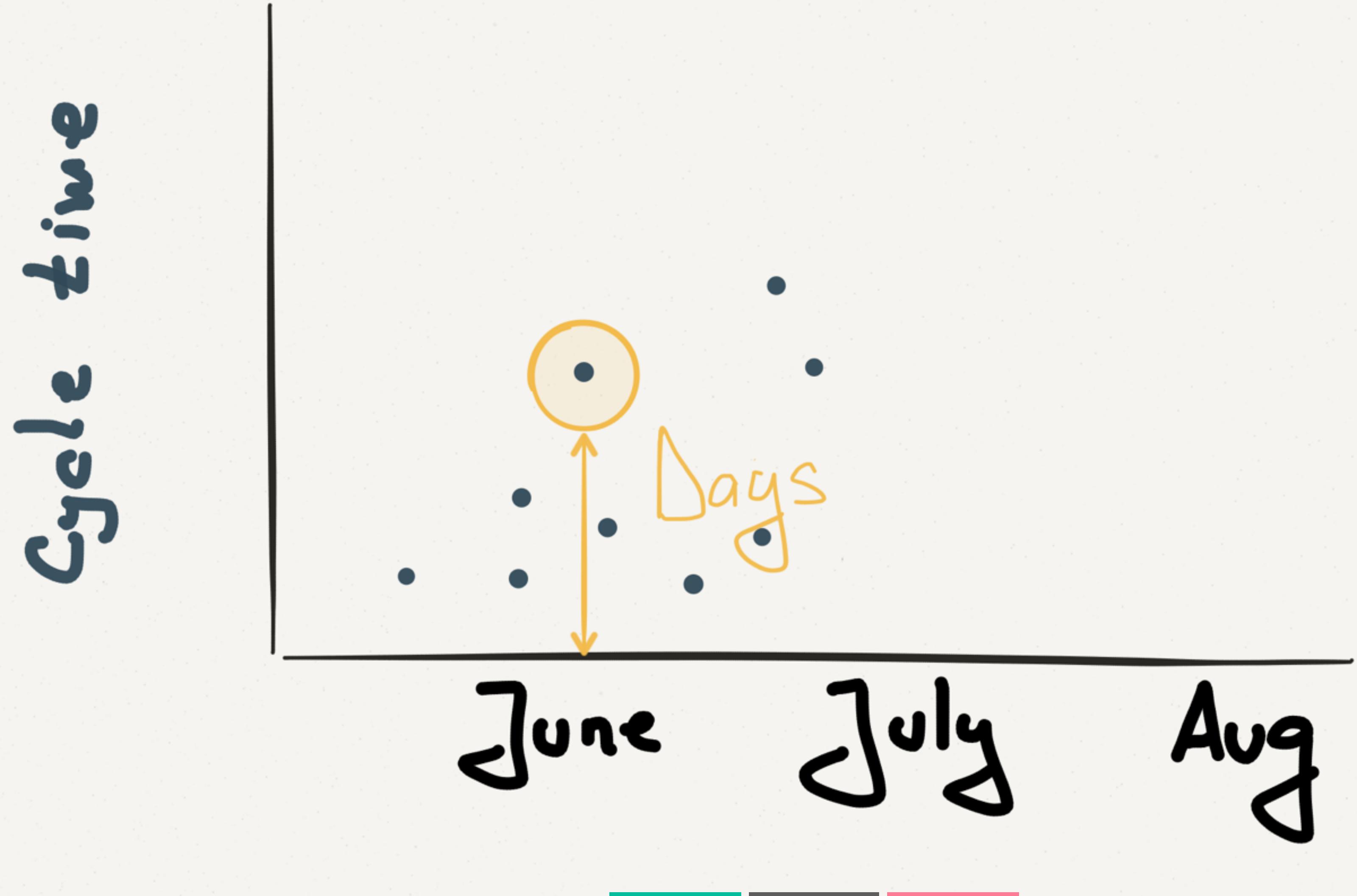
Measure

Measure 'Cycle time' and 'Throughput'

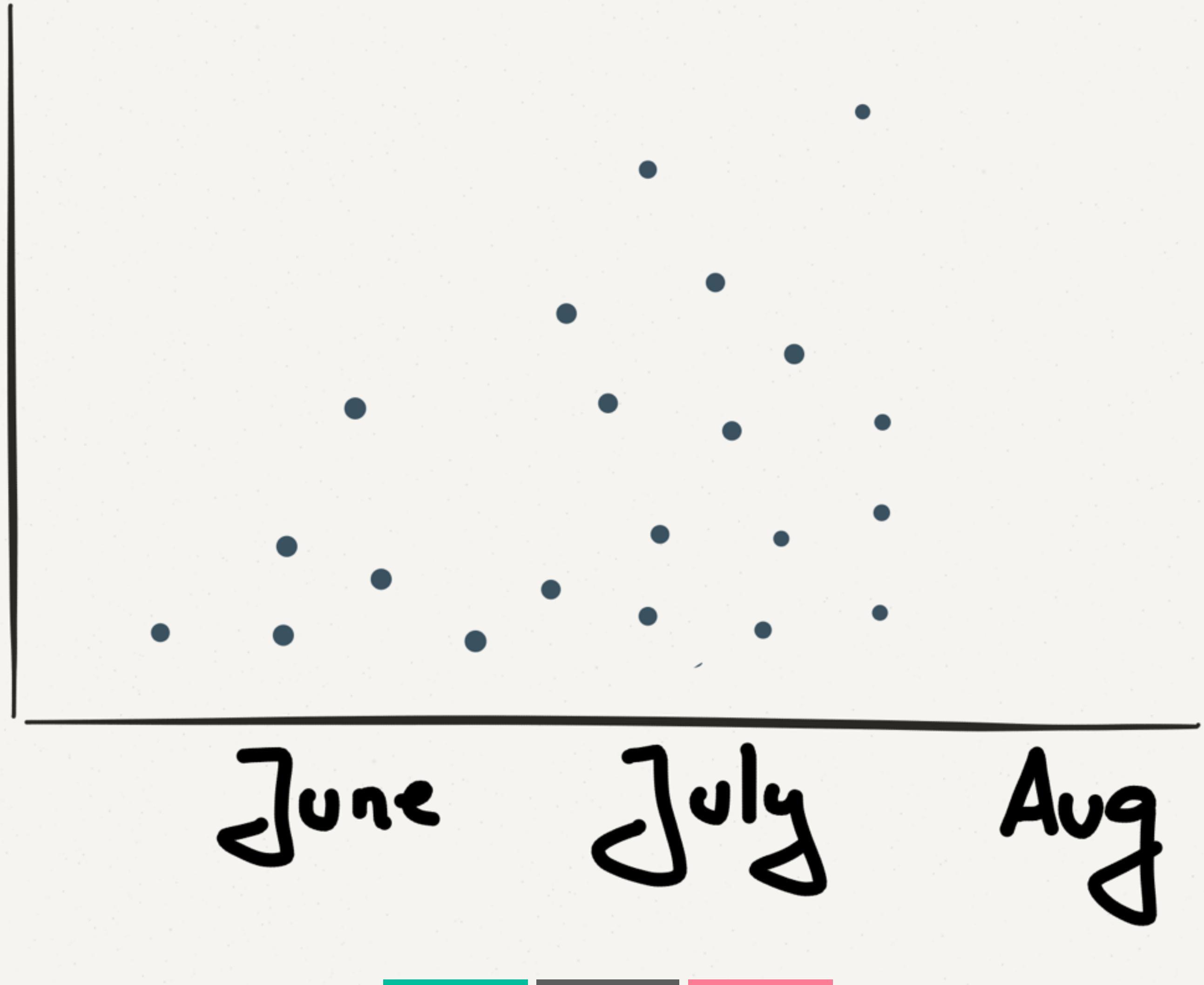


Visualise

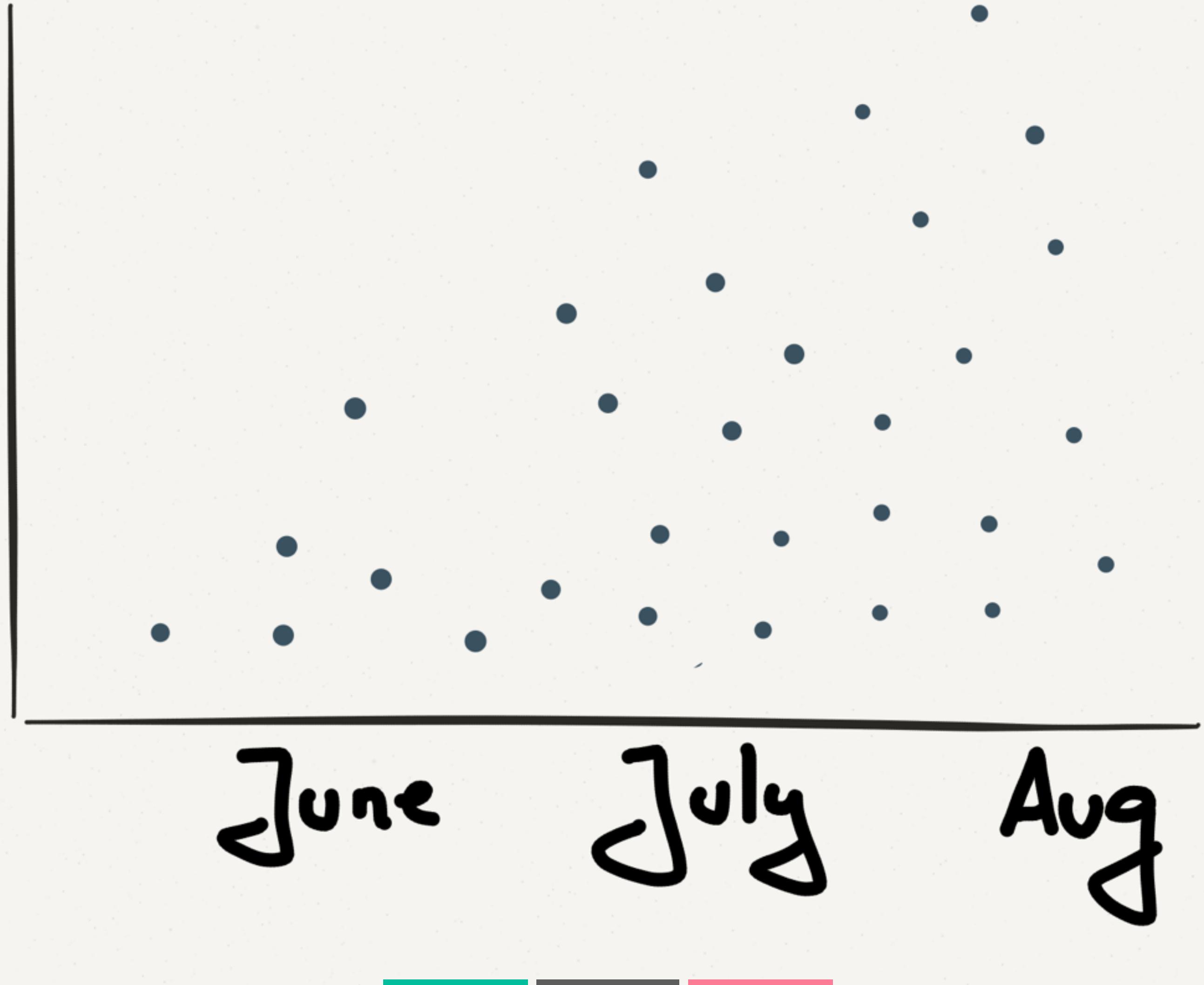
Visualise ‘Cycle time’ using Scatterplots

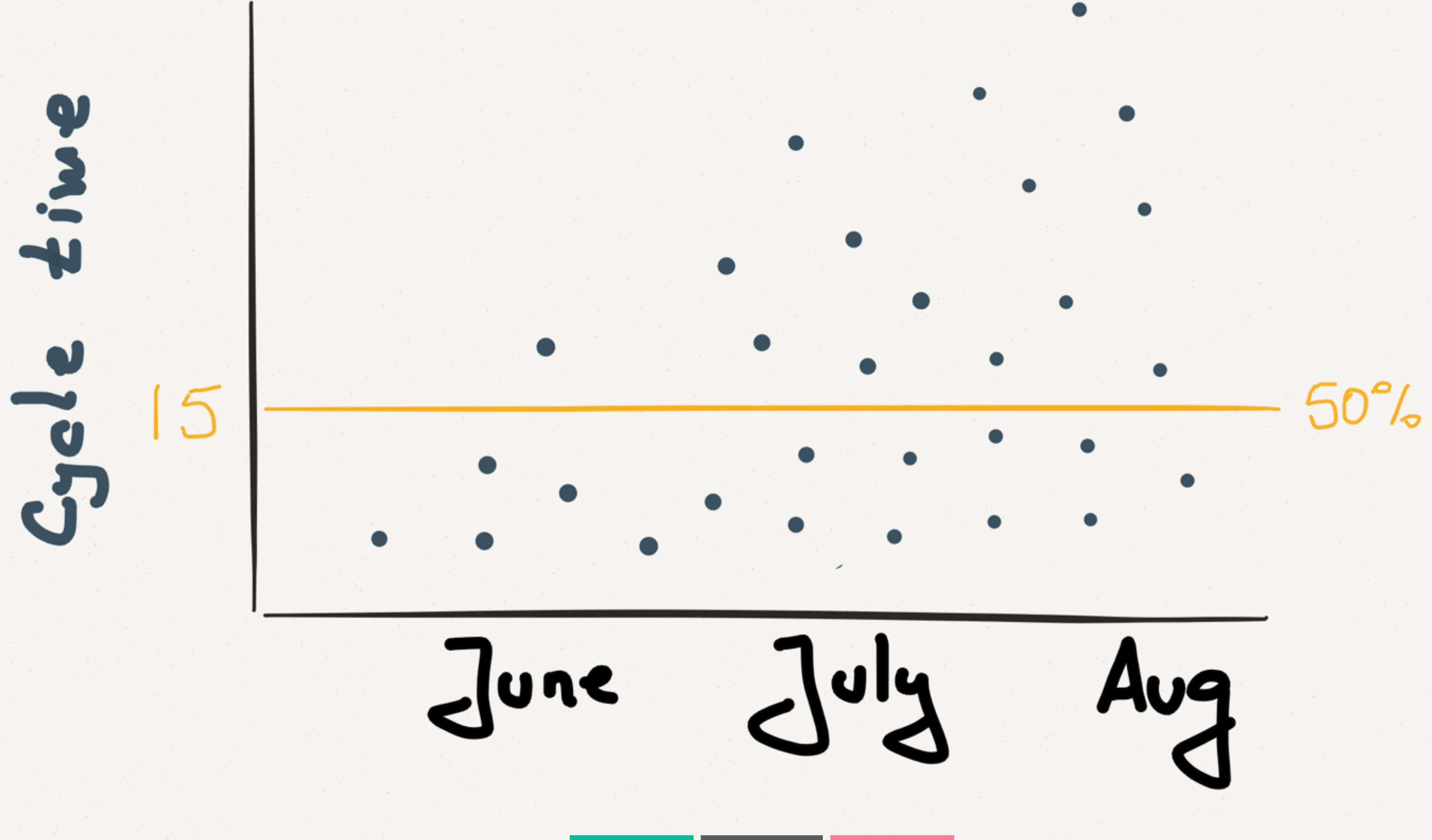


Cycle time



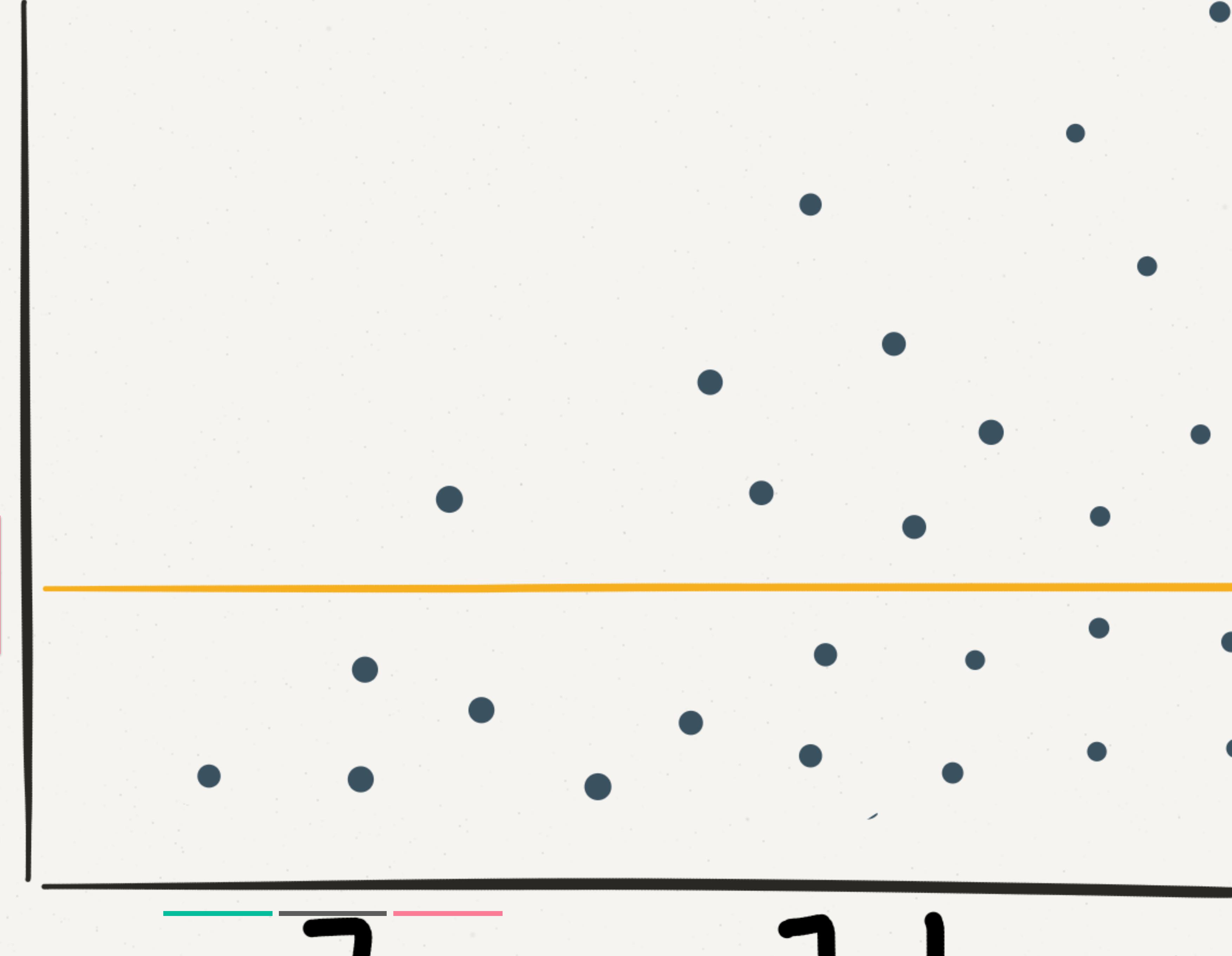
Cycle time

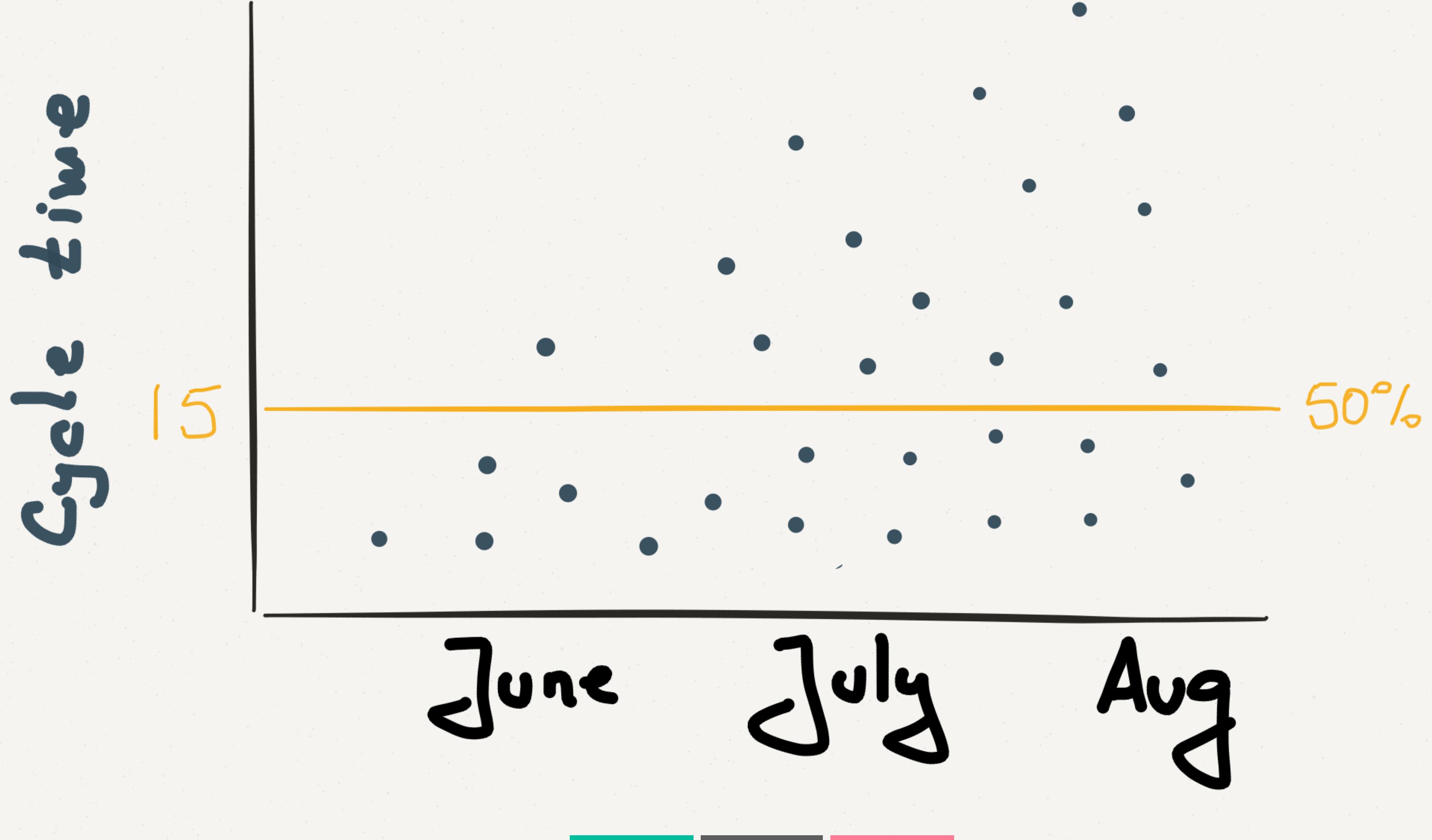


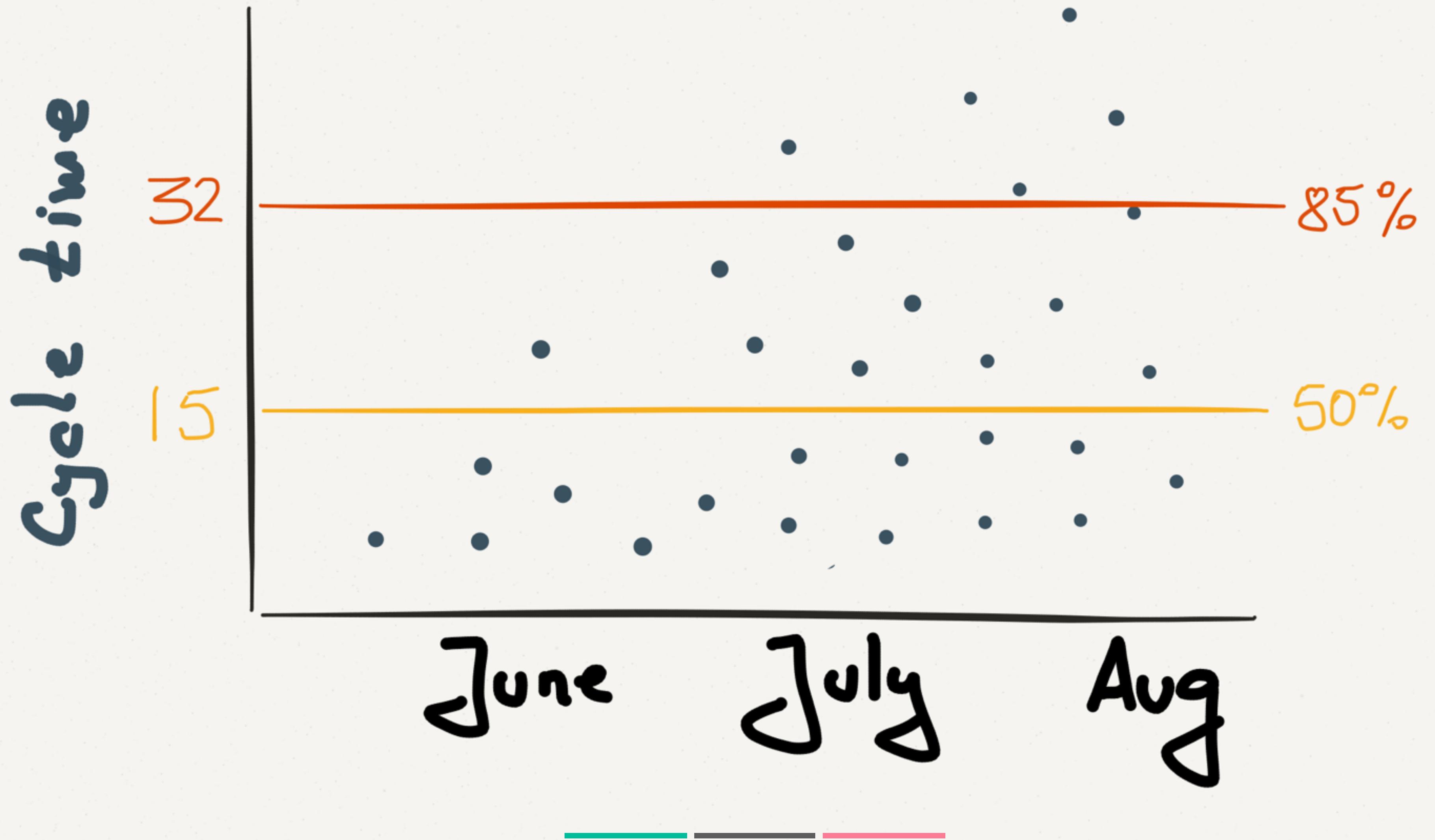


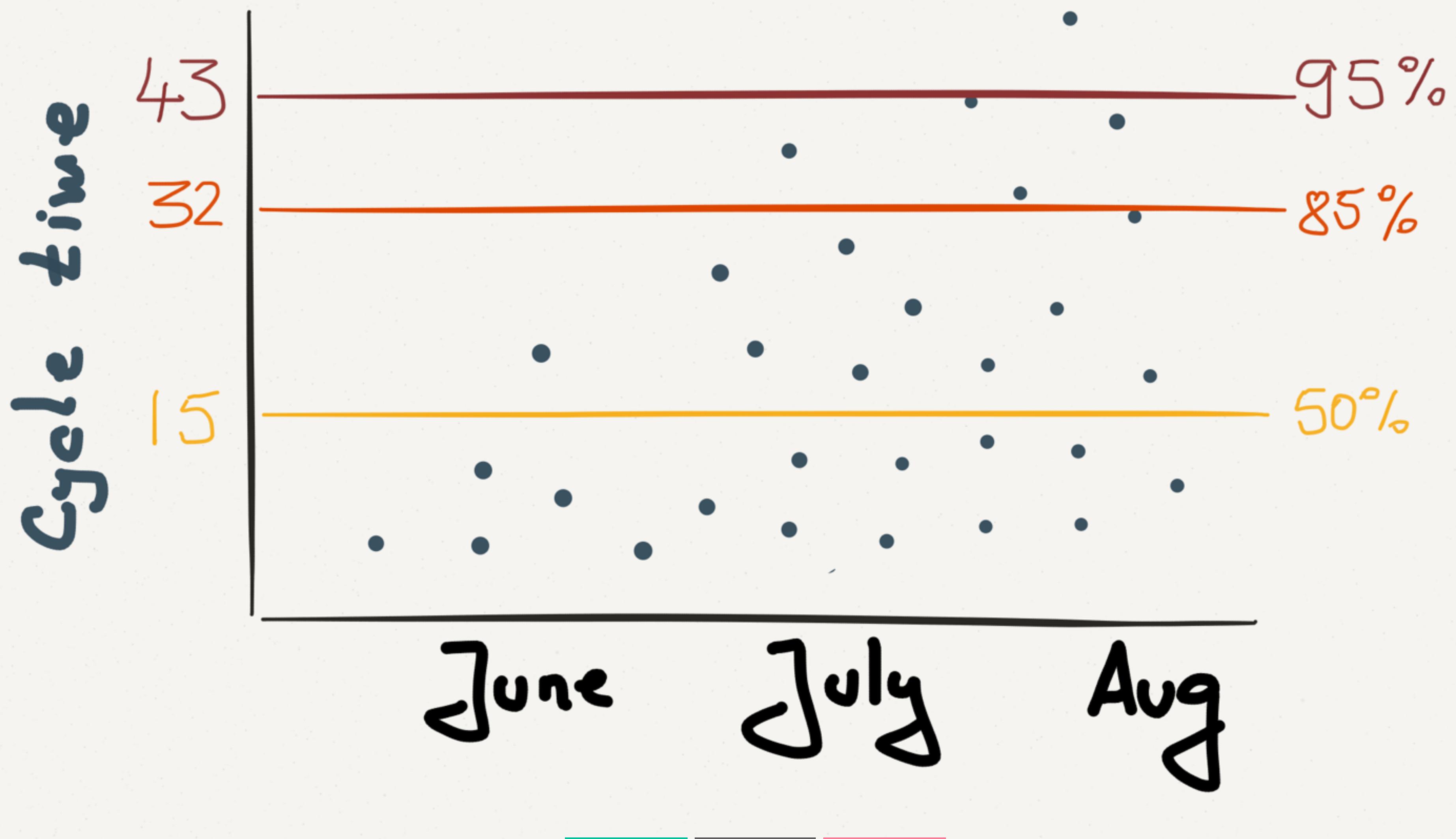
Cycle time

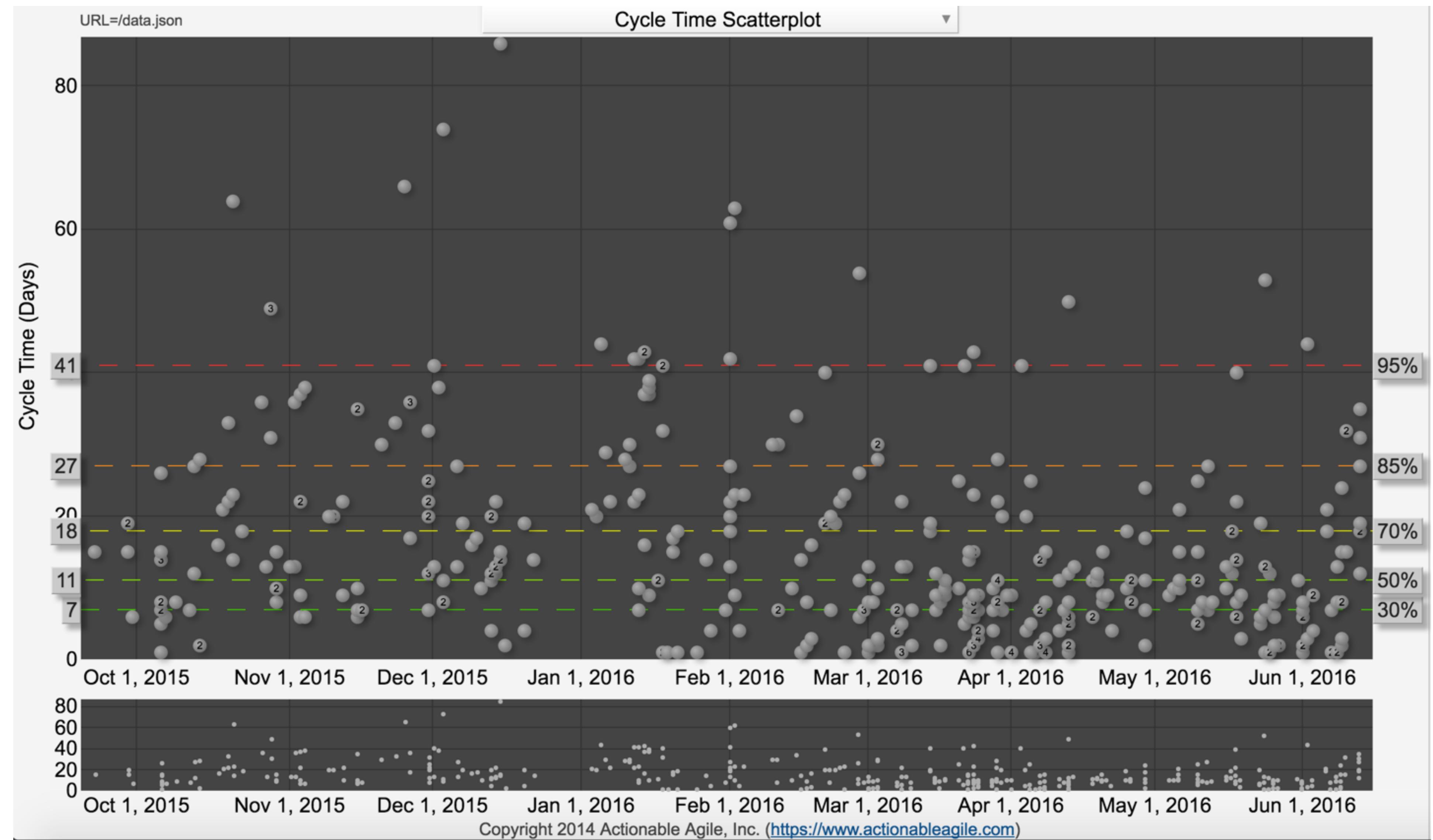
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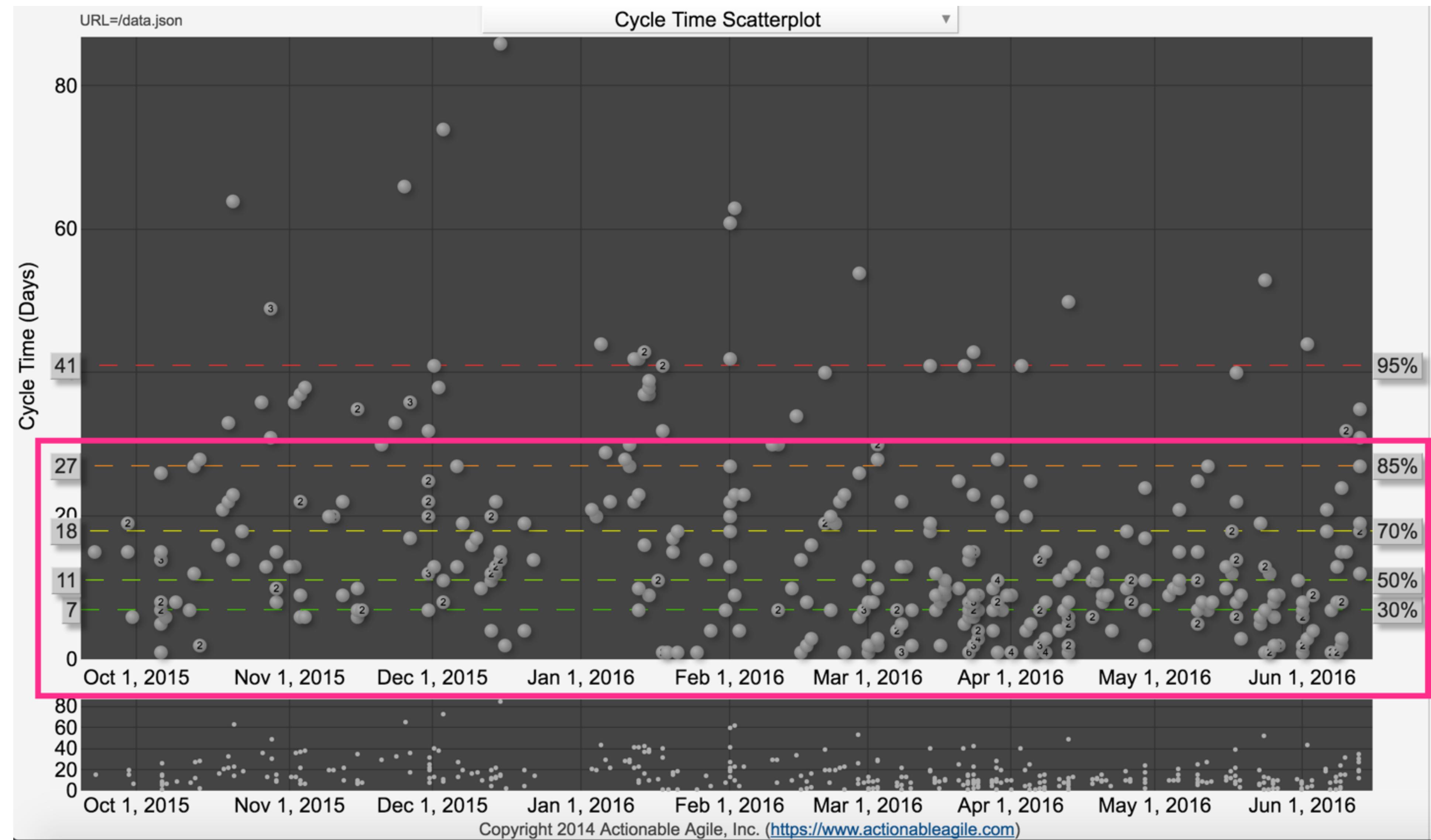


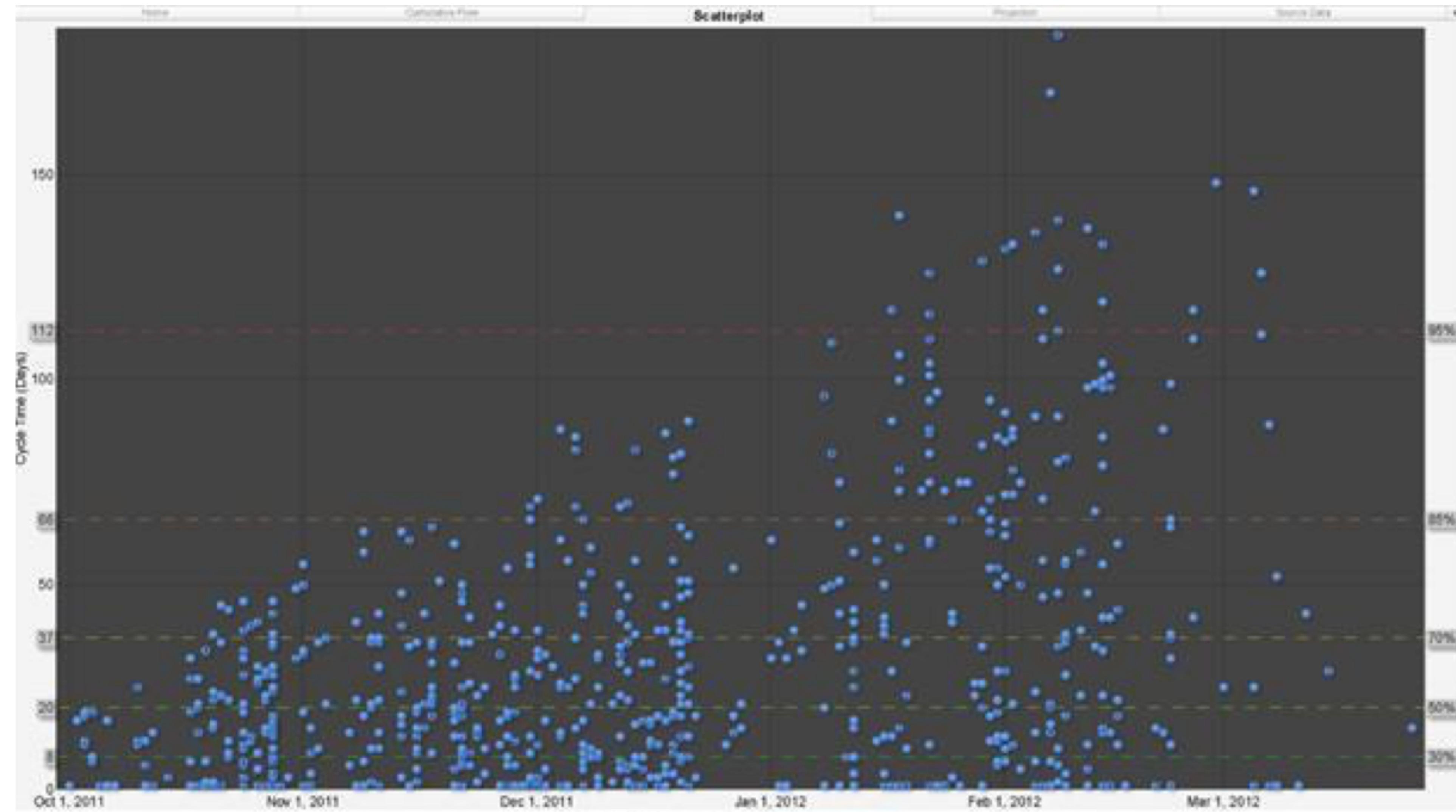


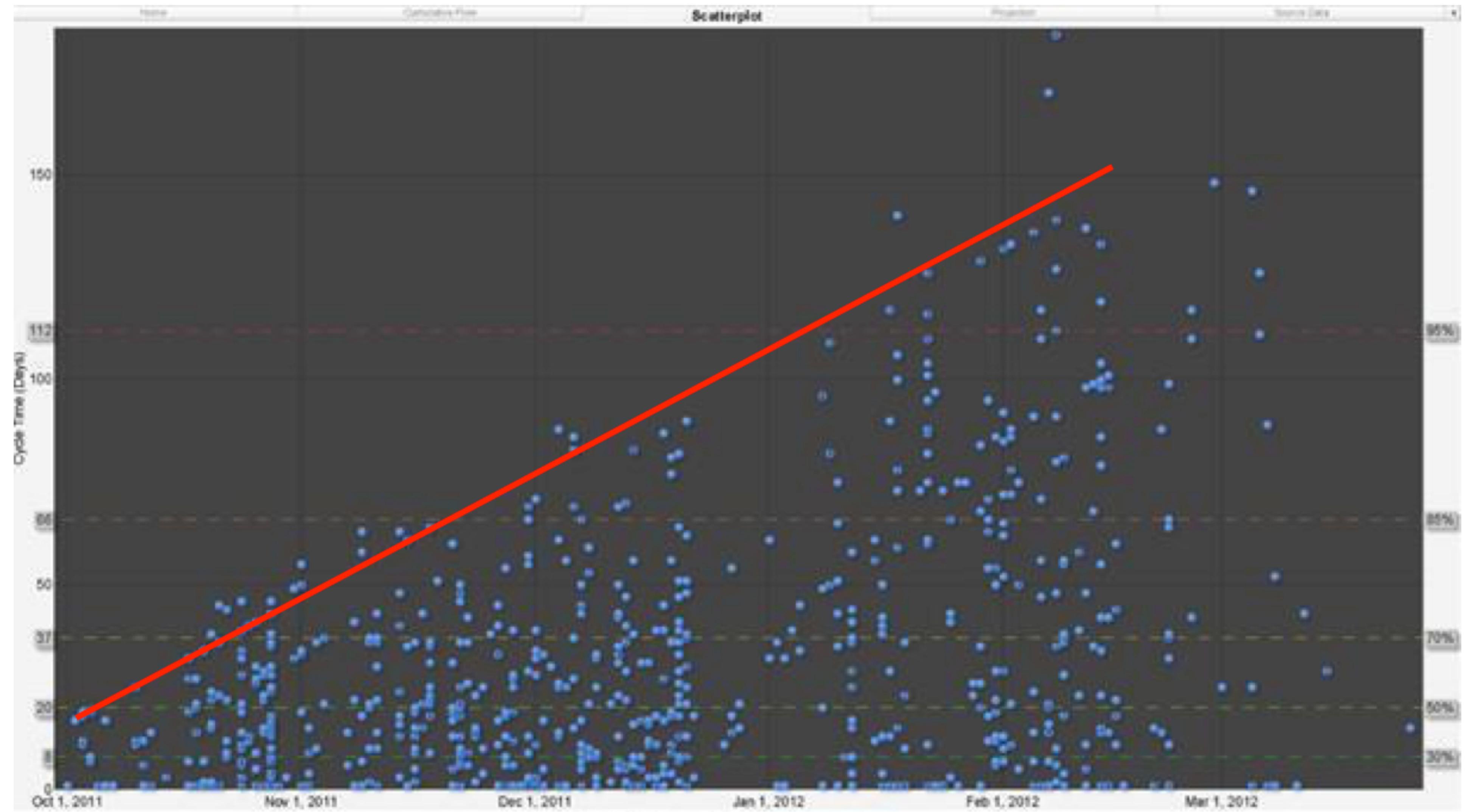


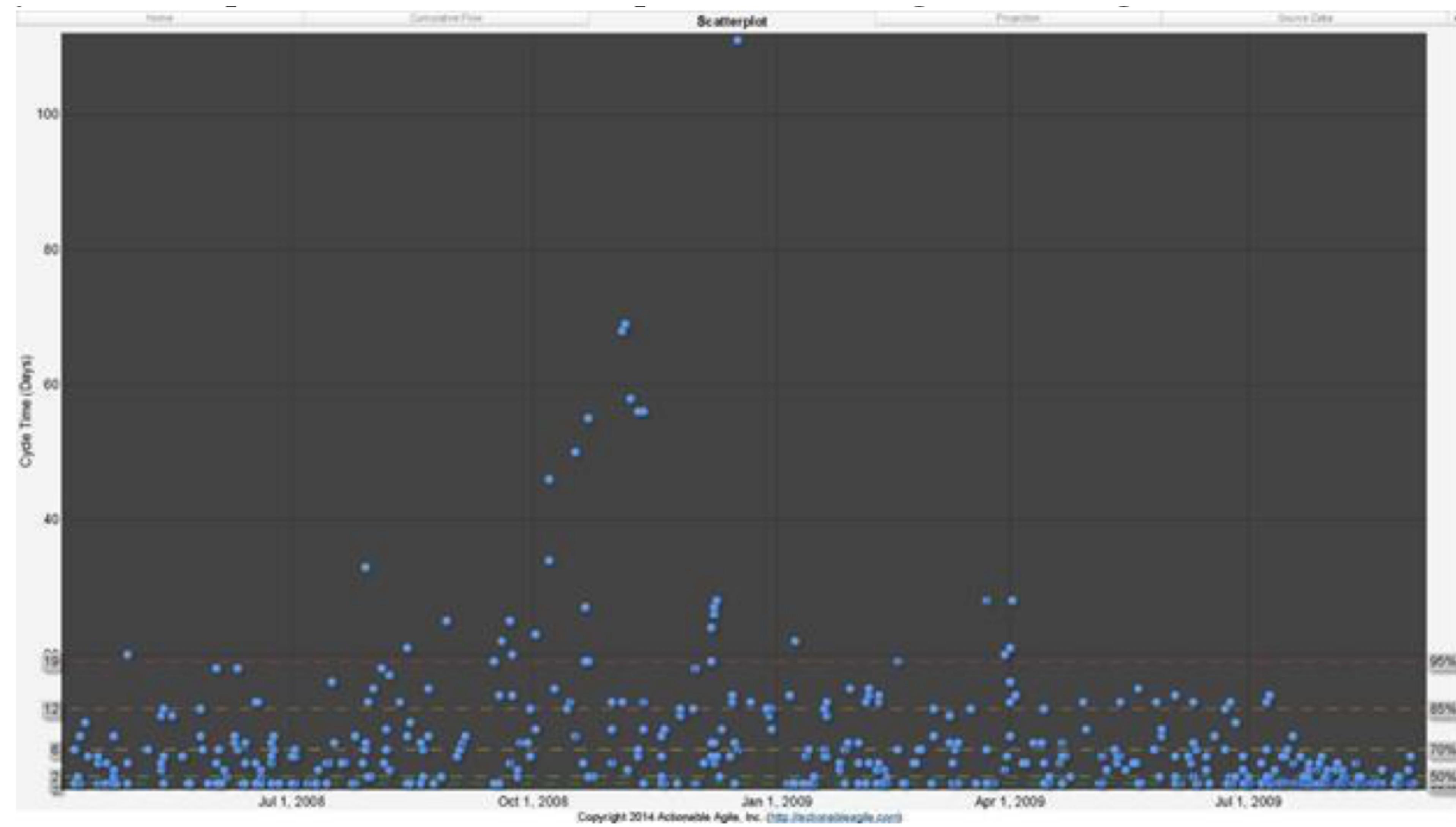


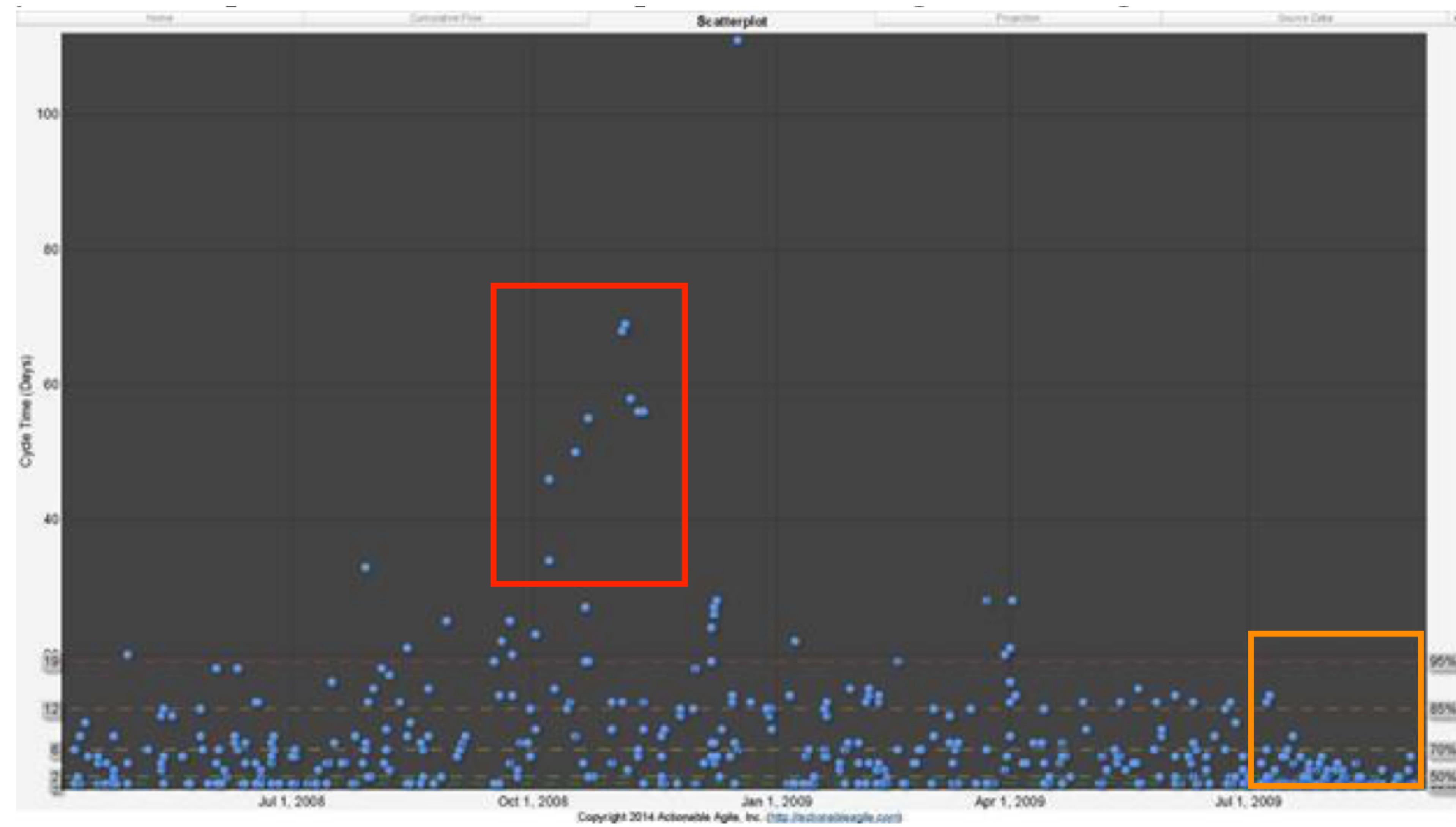


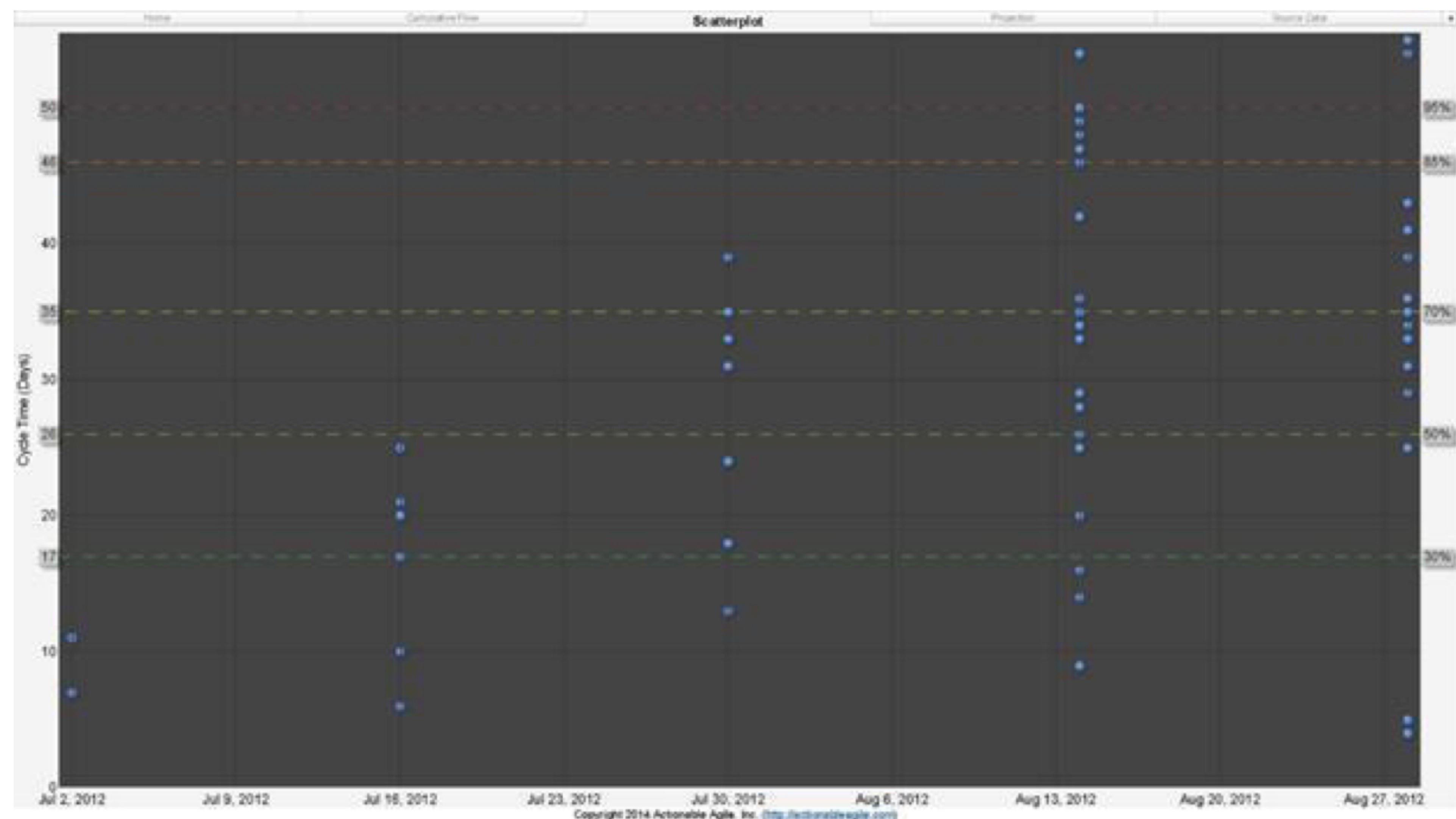






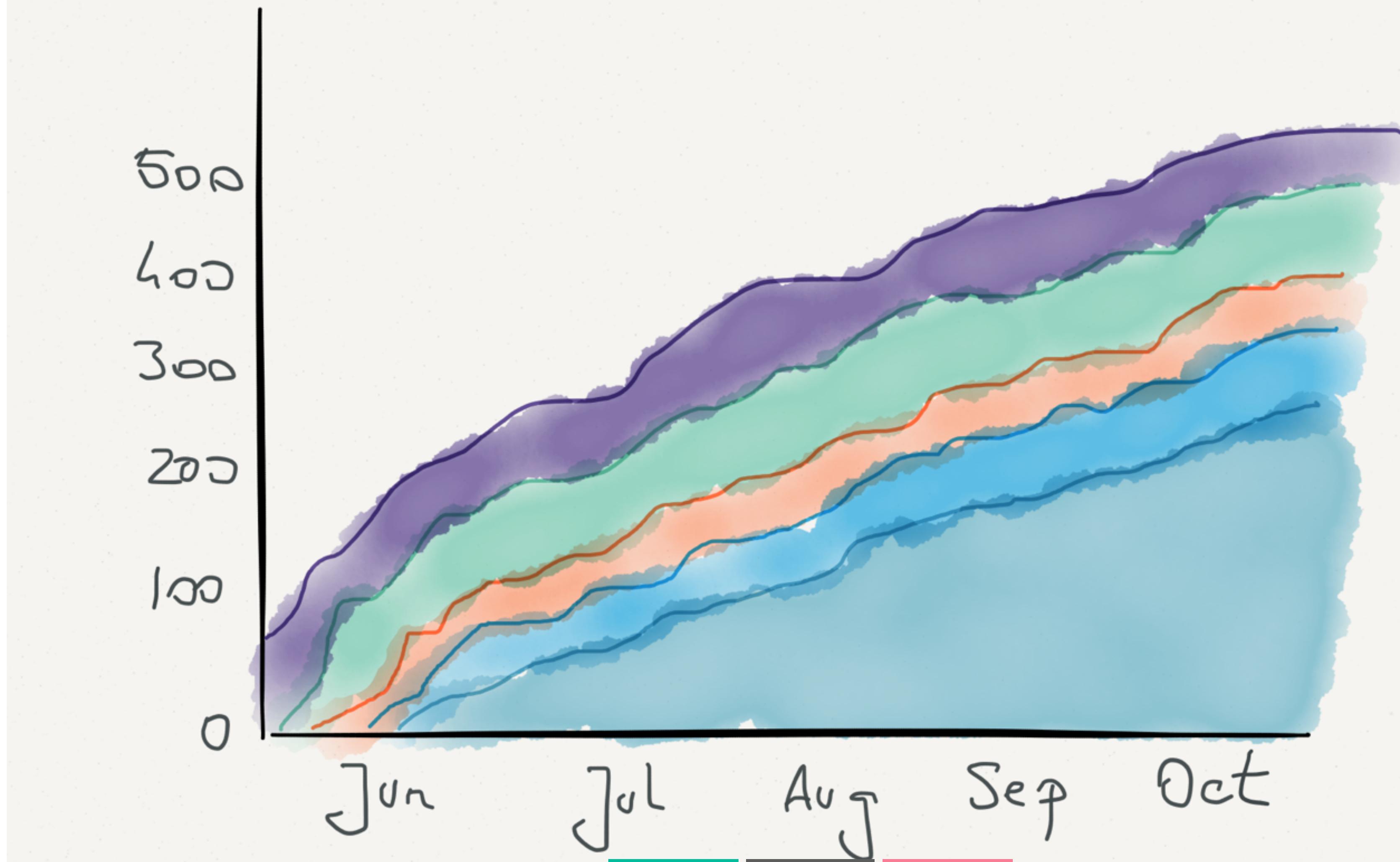




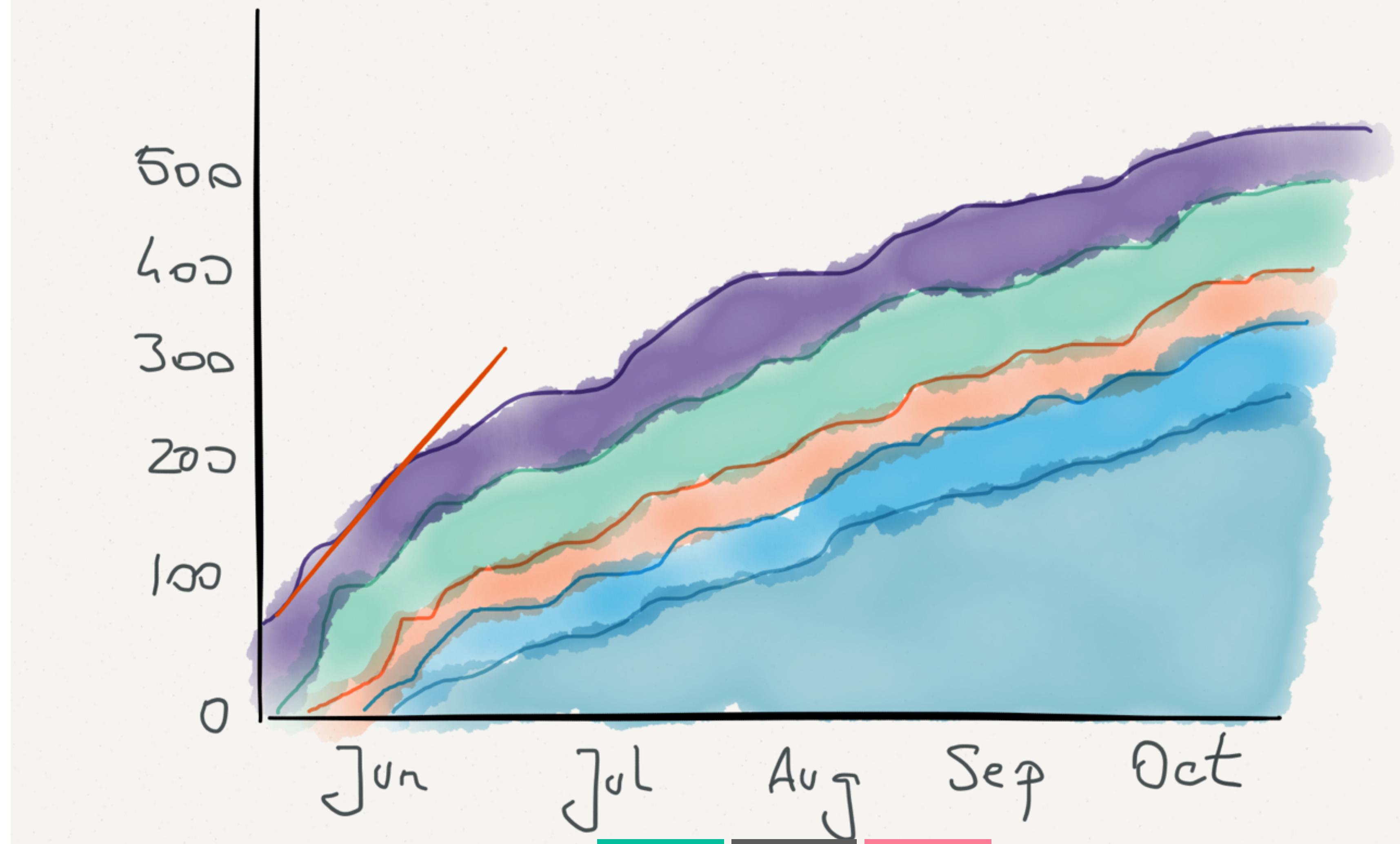


Use Cumulative Flow Diagrams to validate impact of our actions

next analysis develop. testing done



next analysis develop. testing done



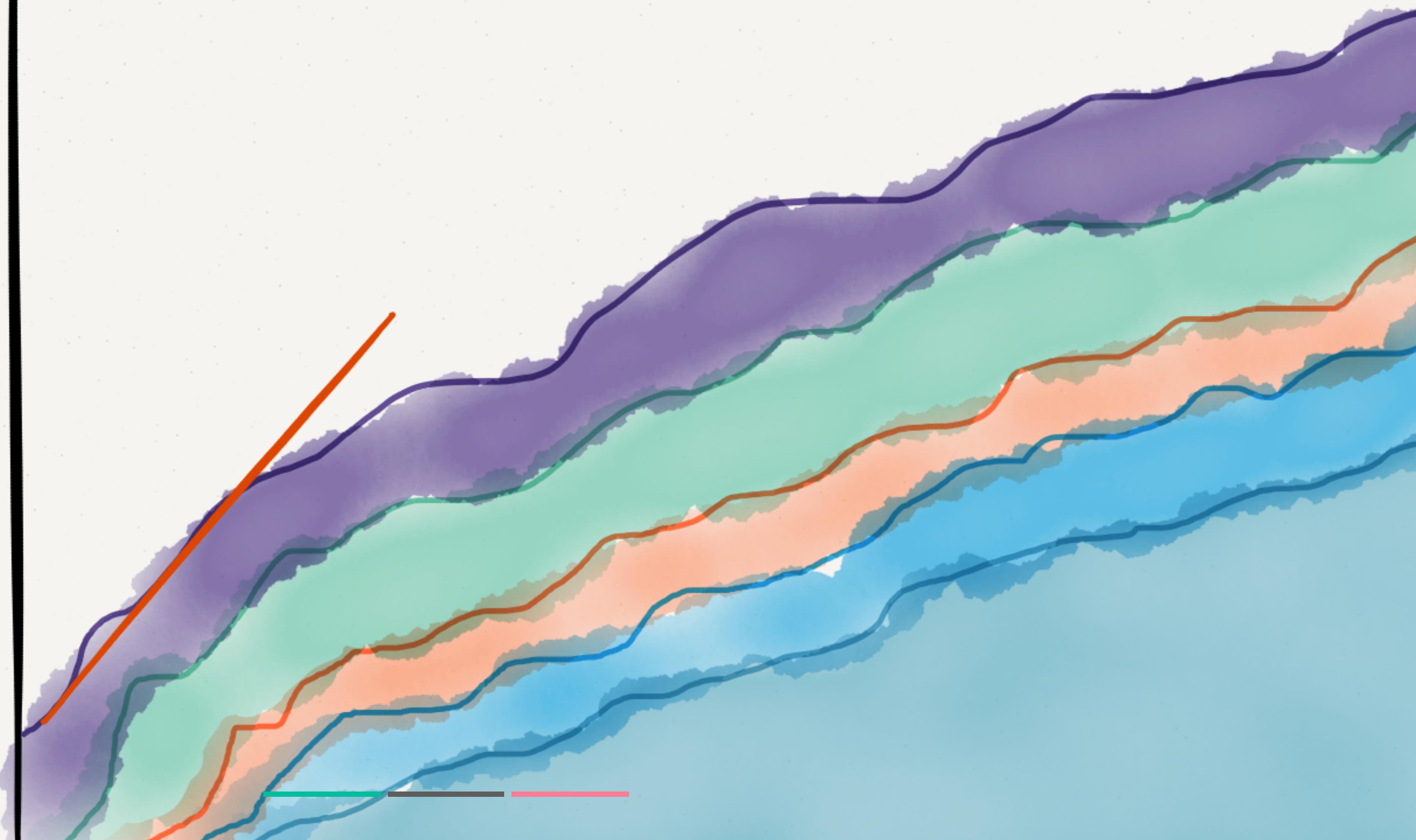
500

400

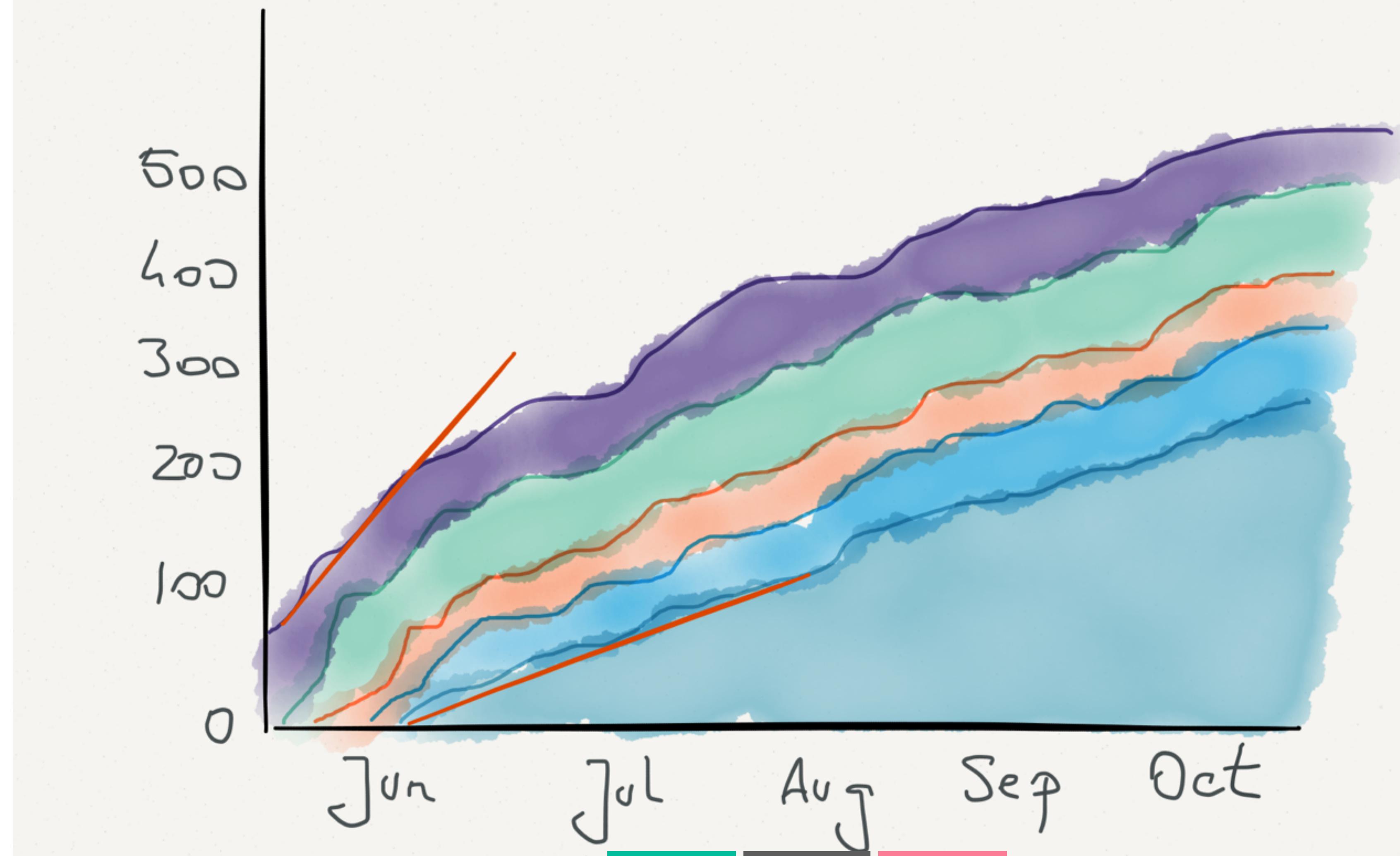
300

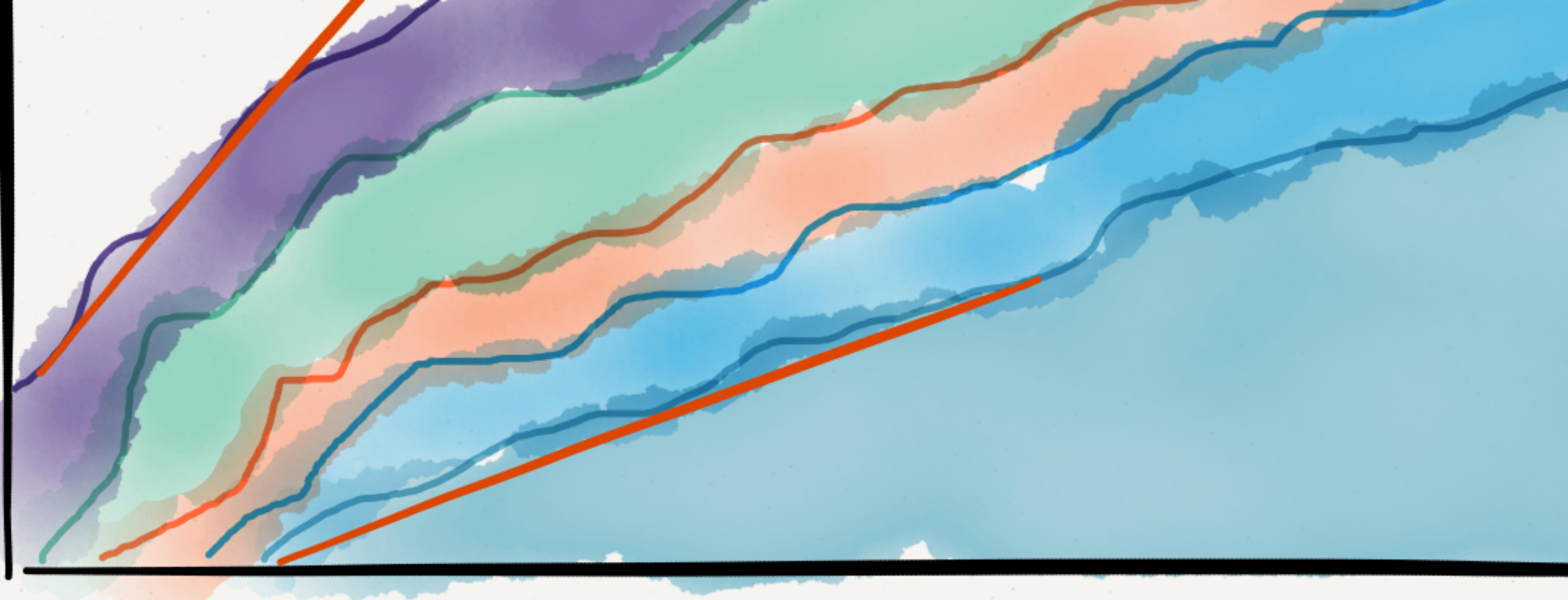
200

100



next analysis develop. testing done





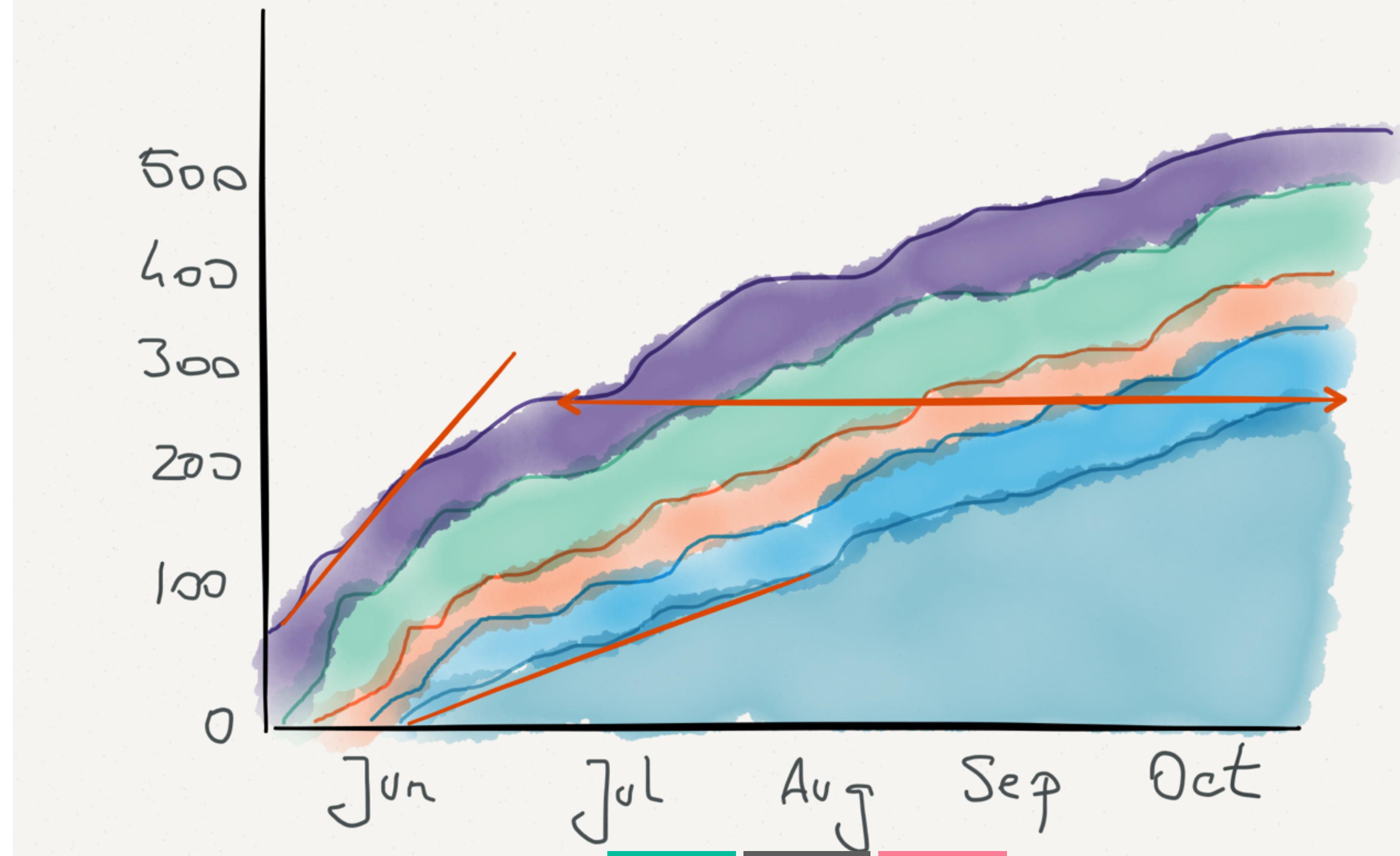
Jun

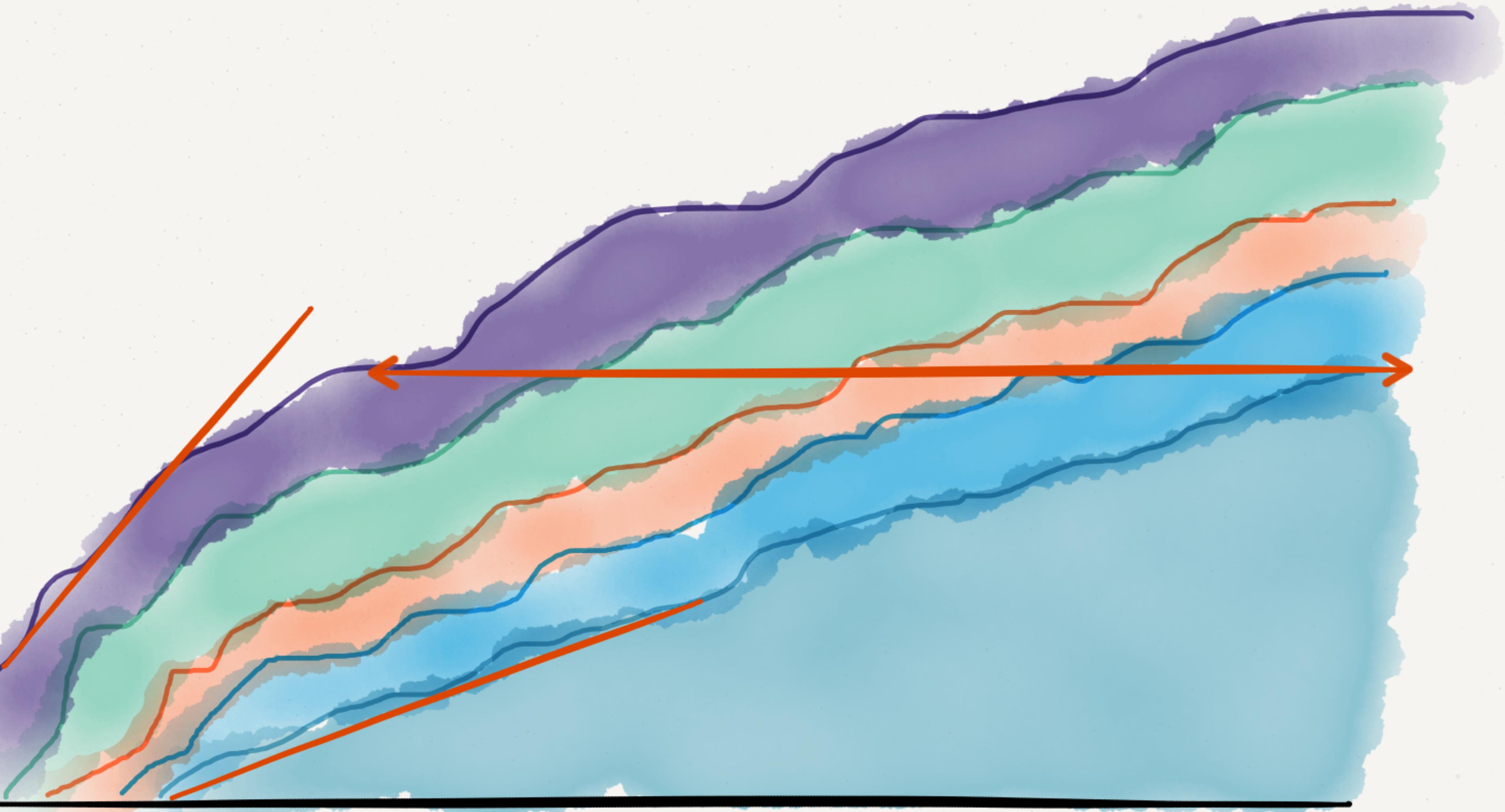
Jul

Aug

Sep

next analysis develop. testing done



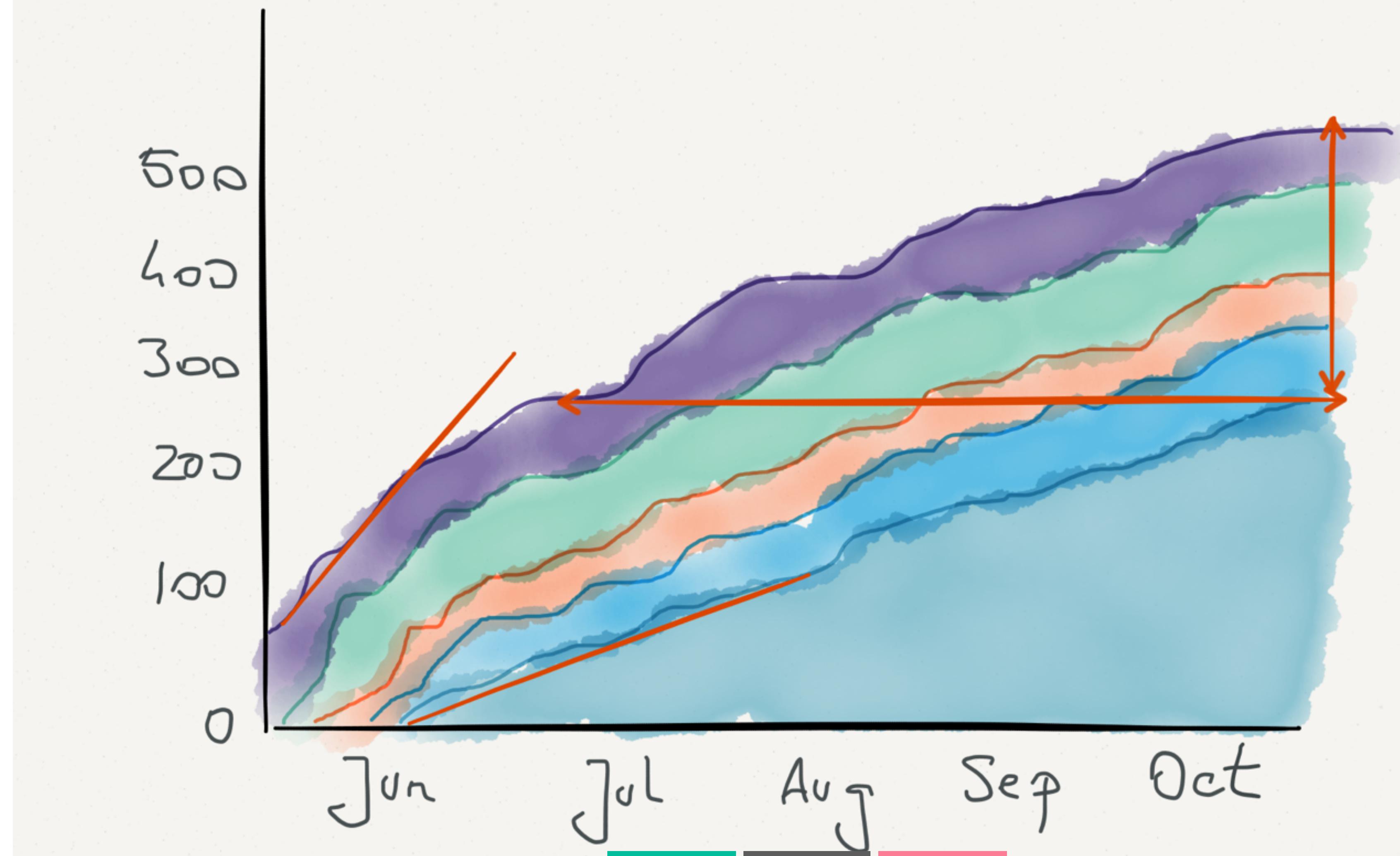


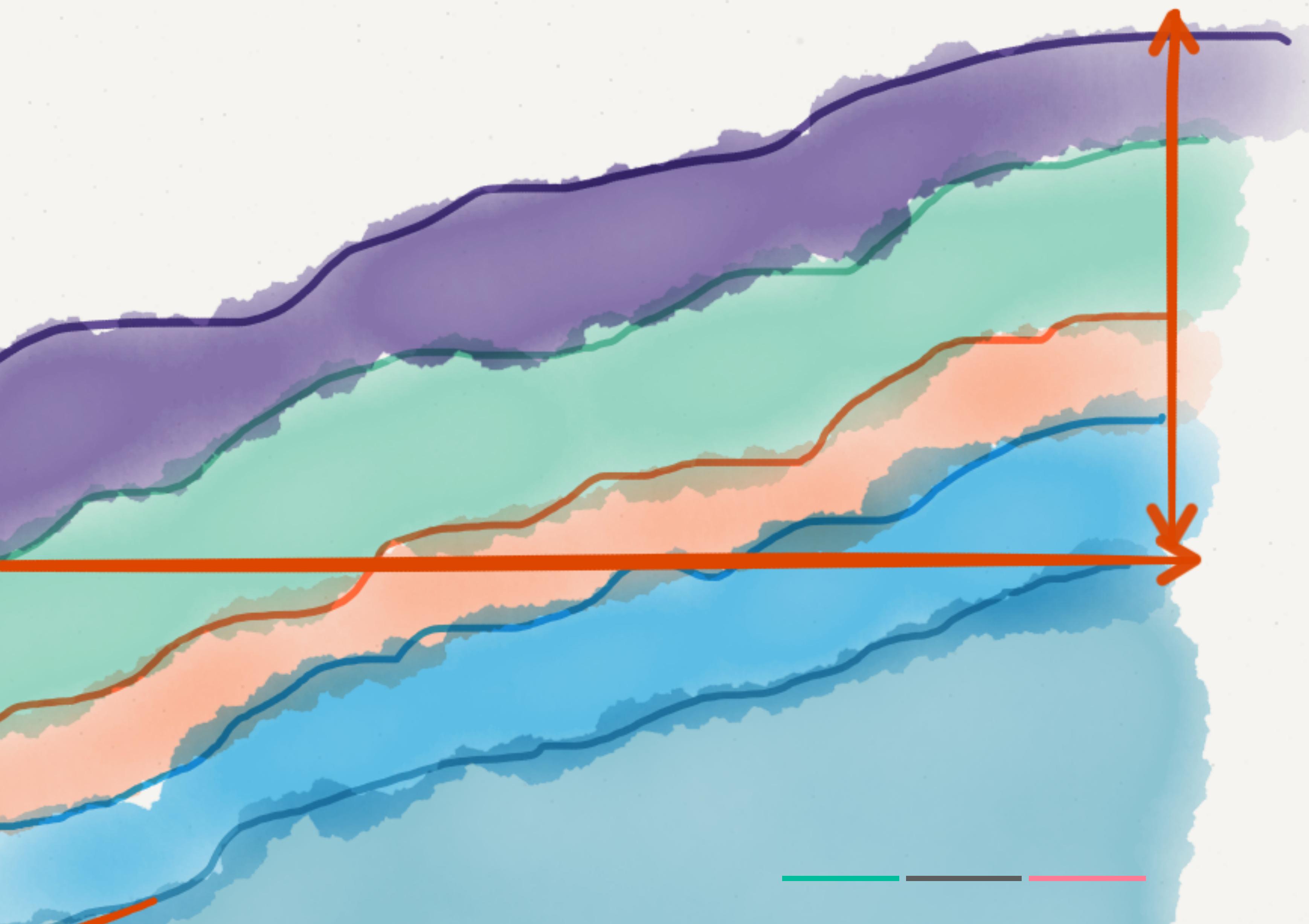
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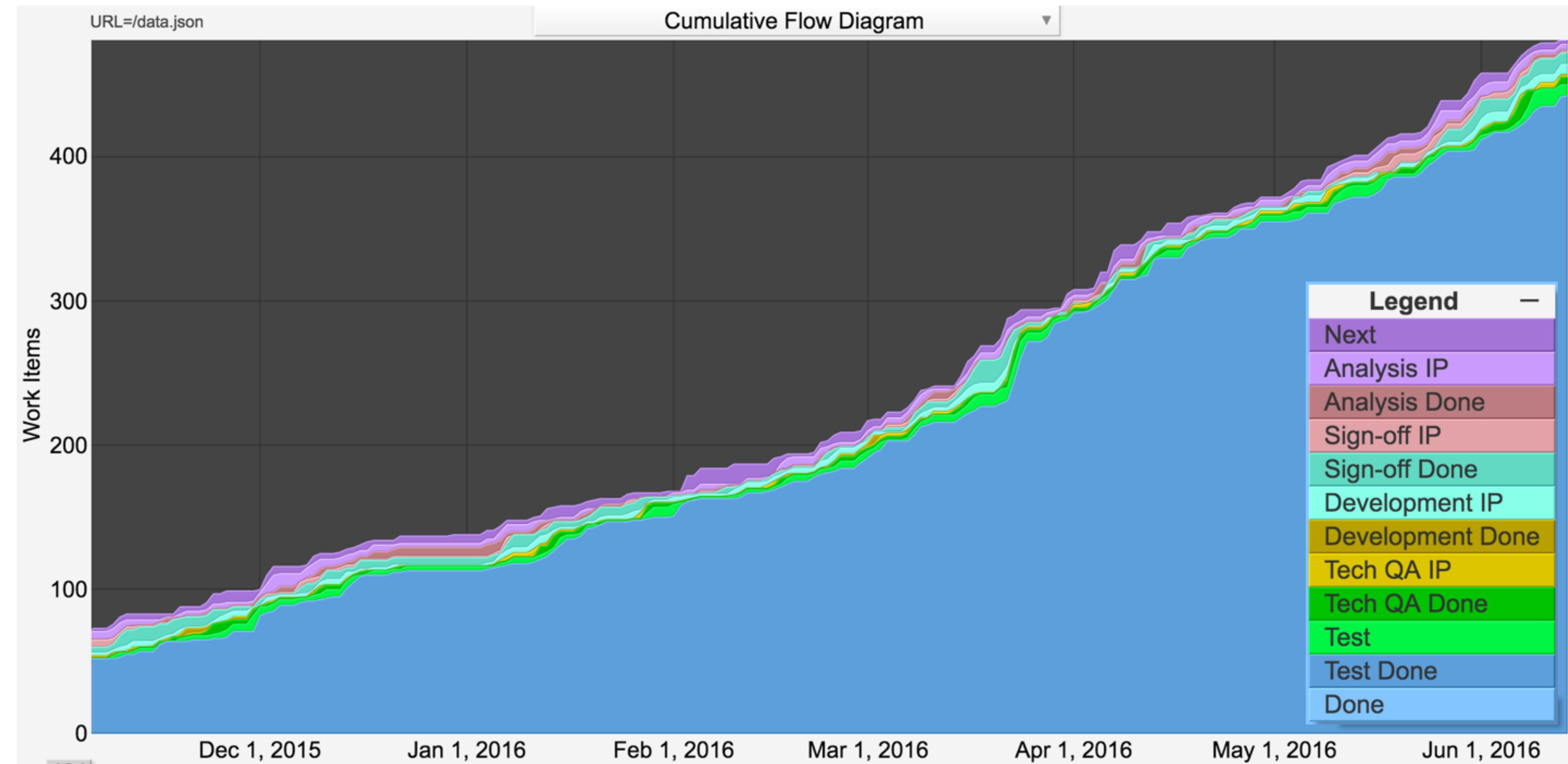
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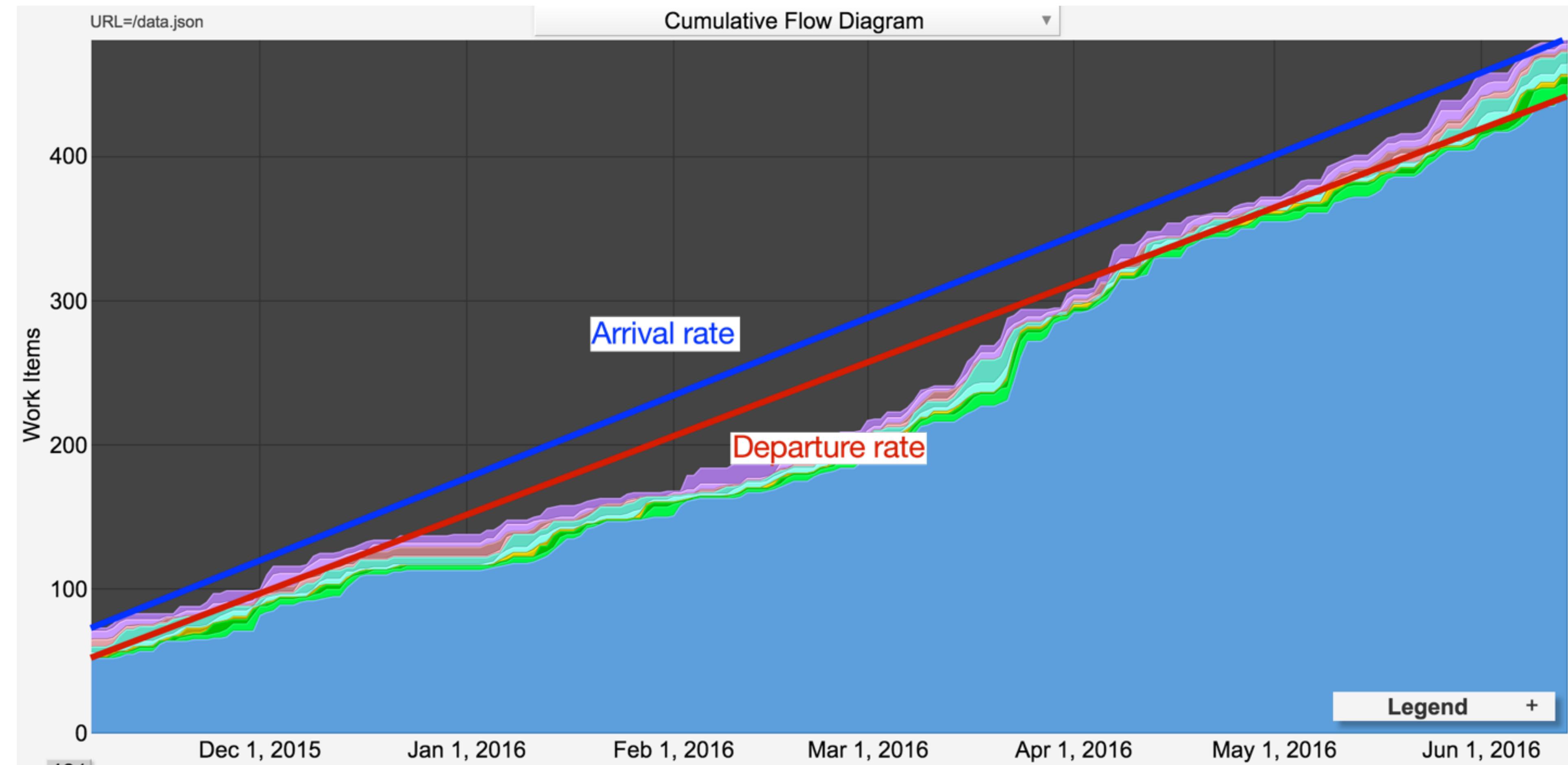
AUG — SEP OCT

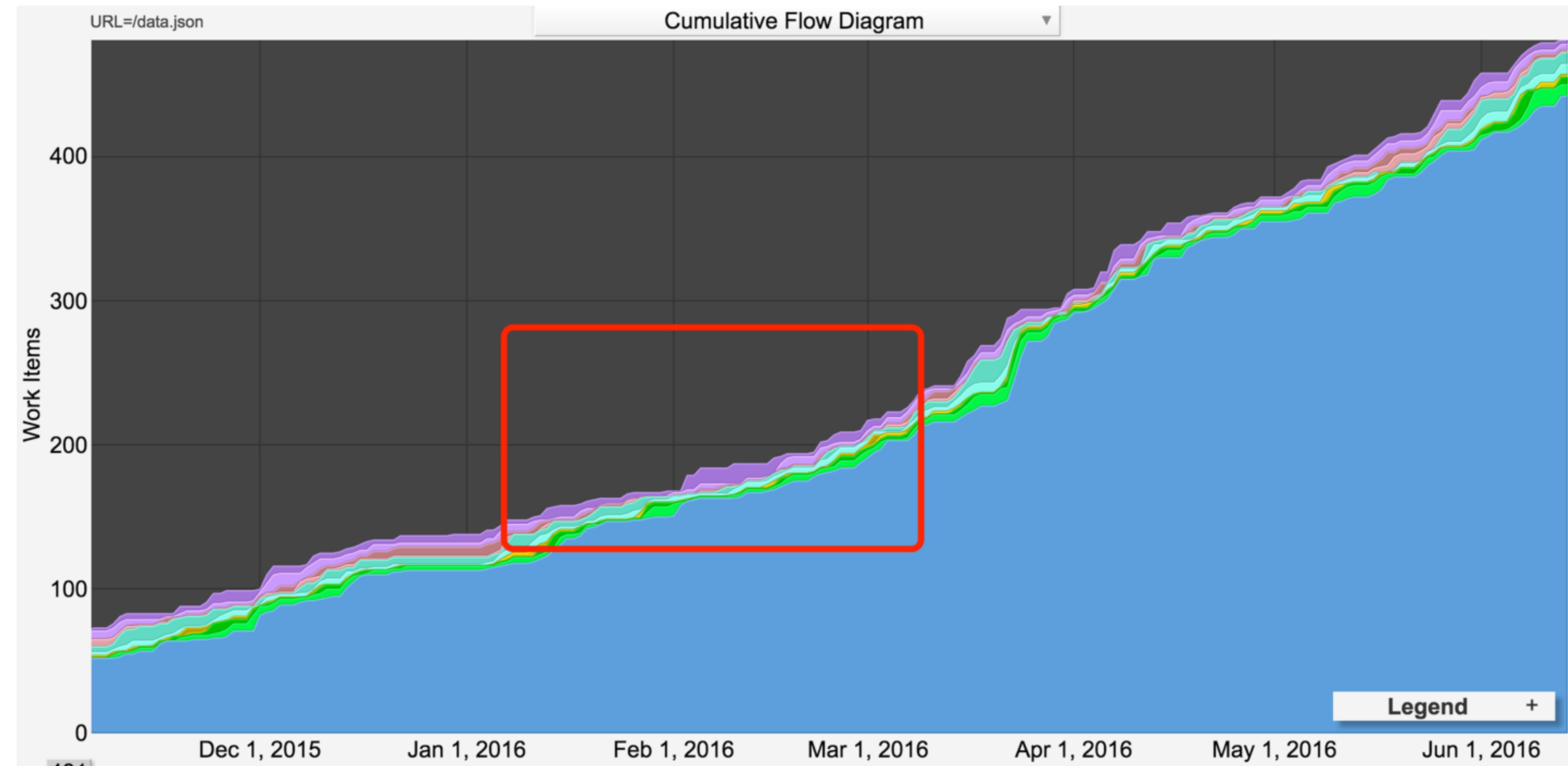
next analysis develop. testing done

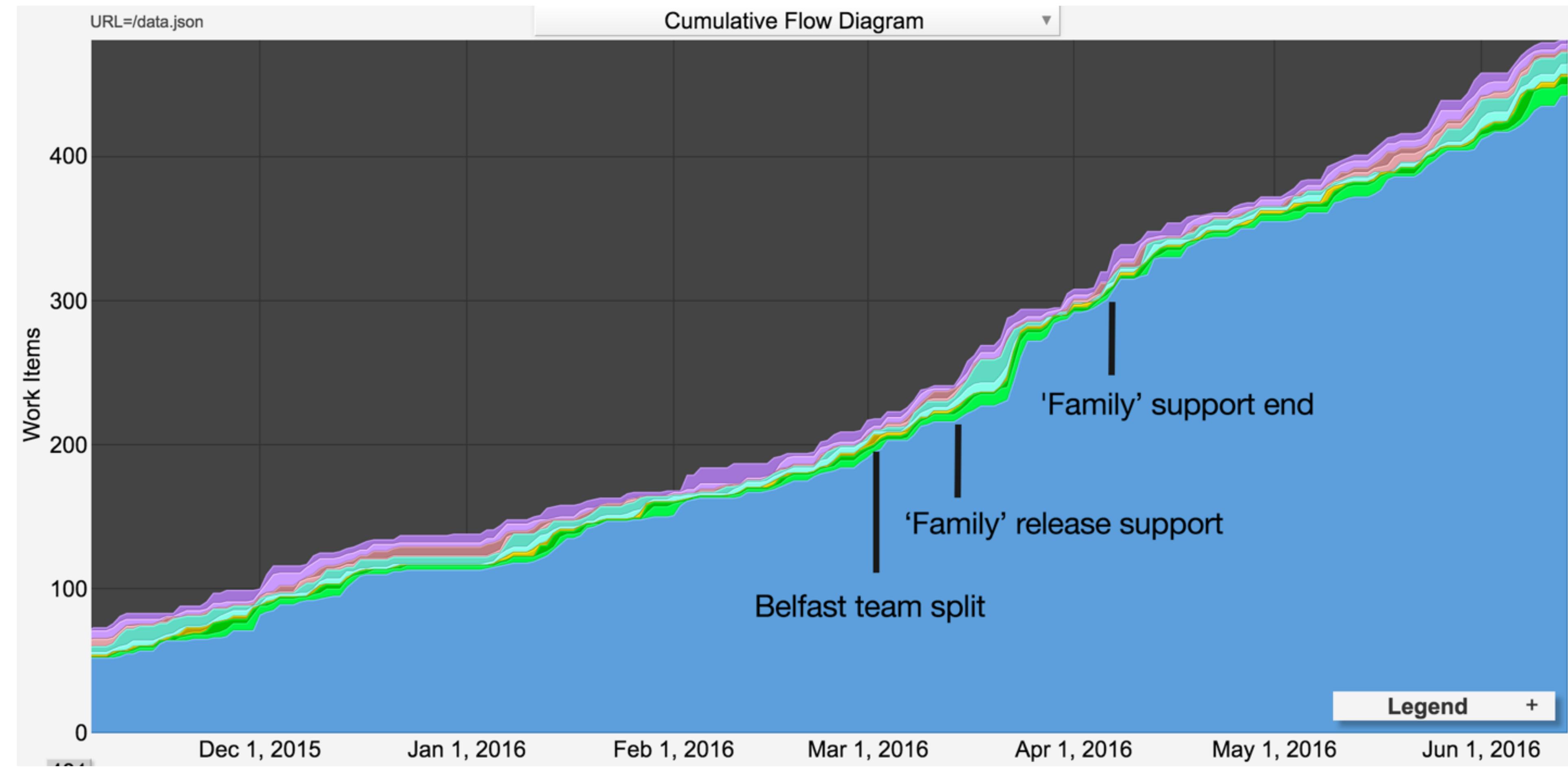




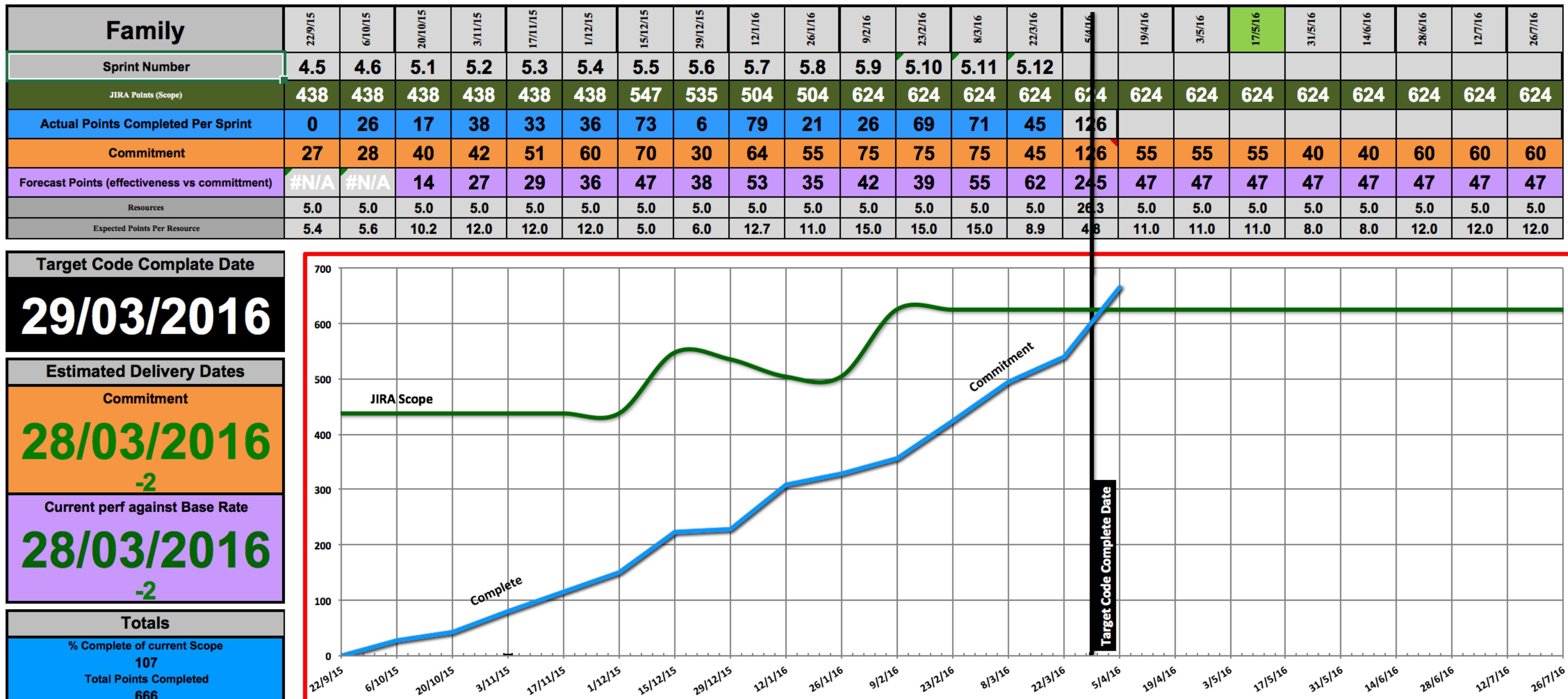




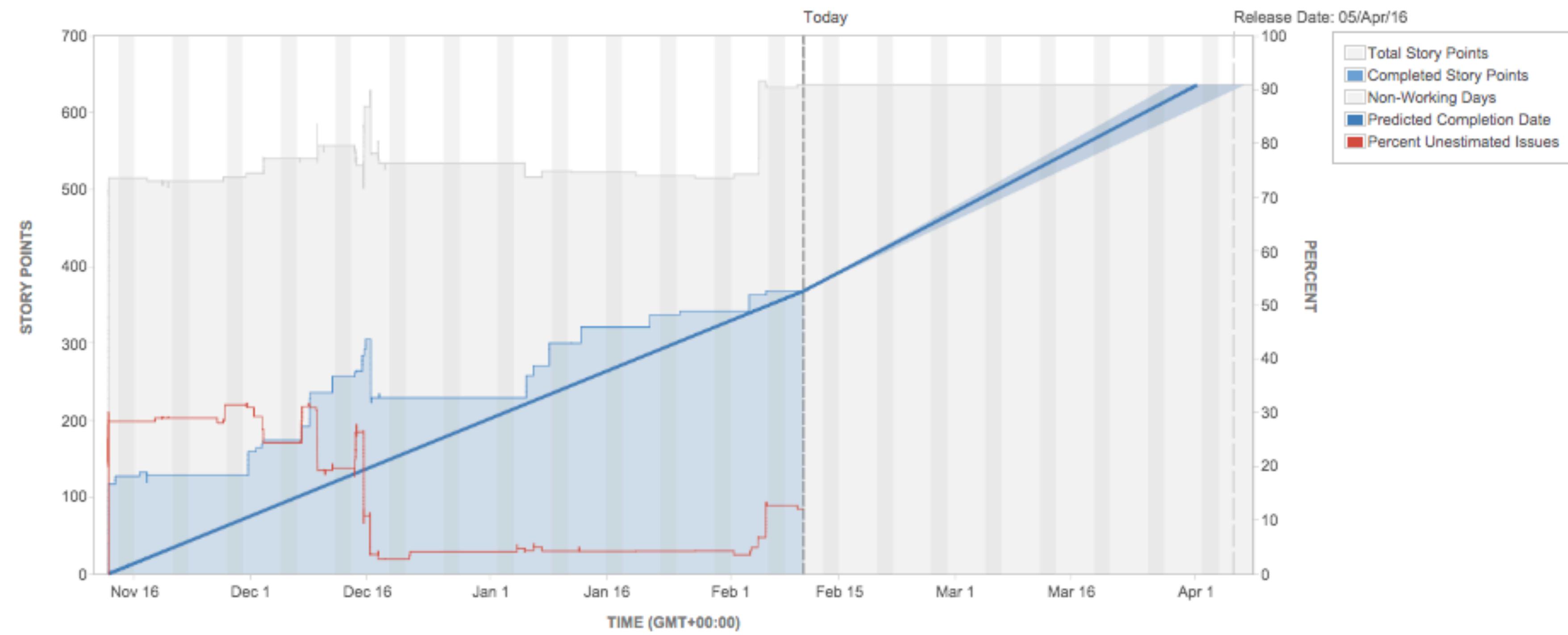




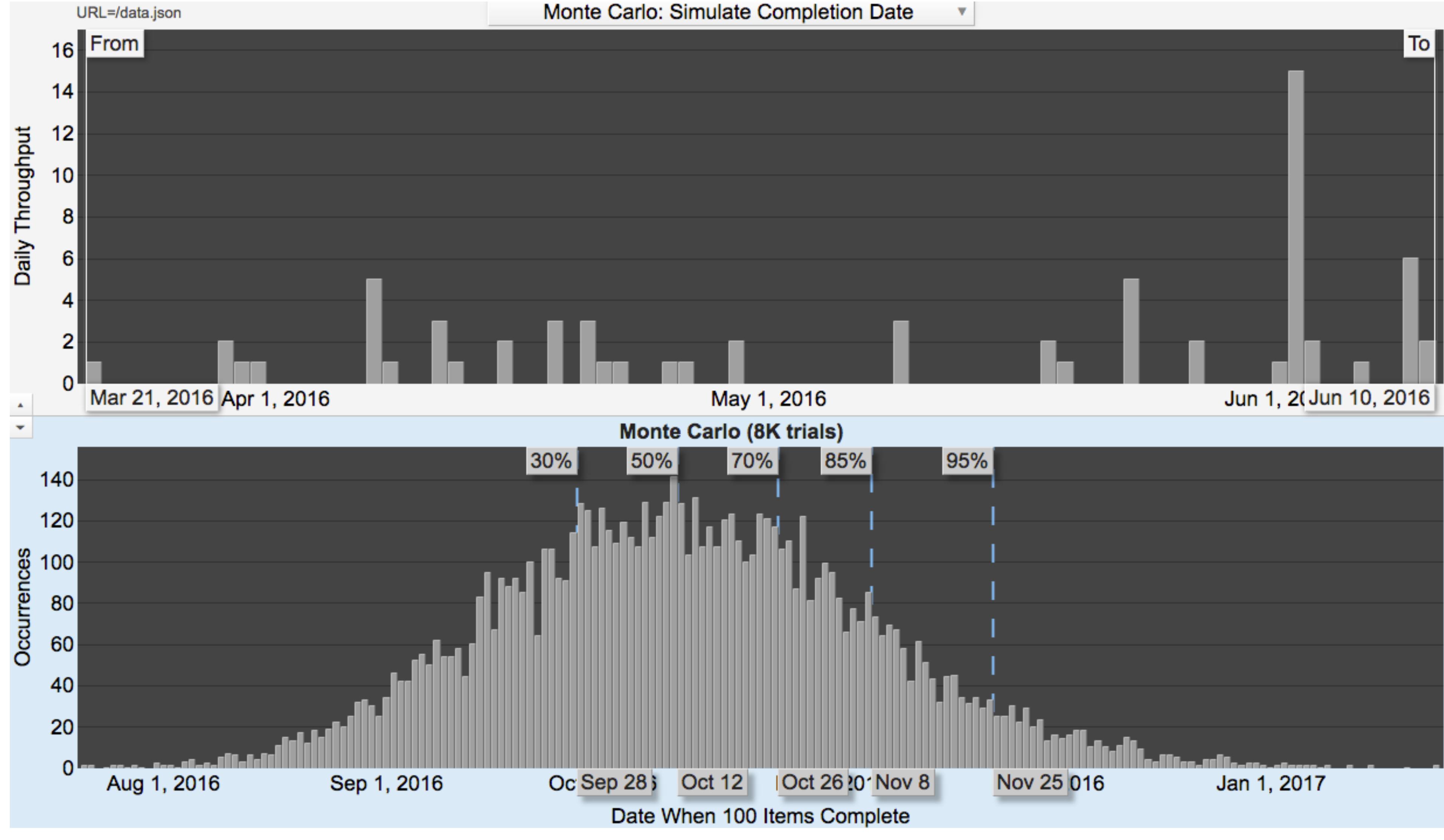
Burnup

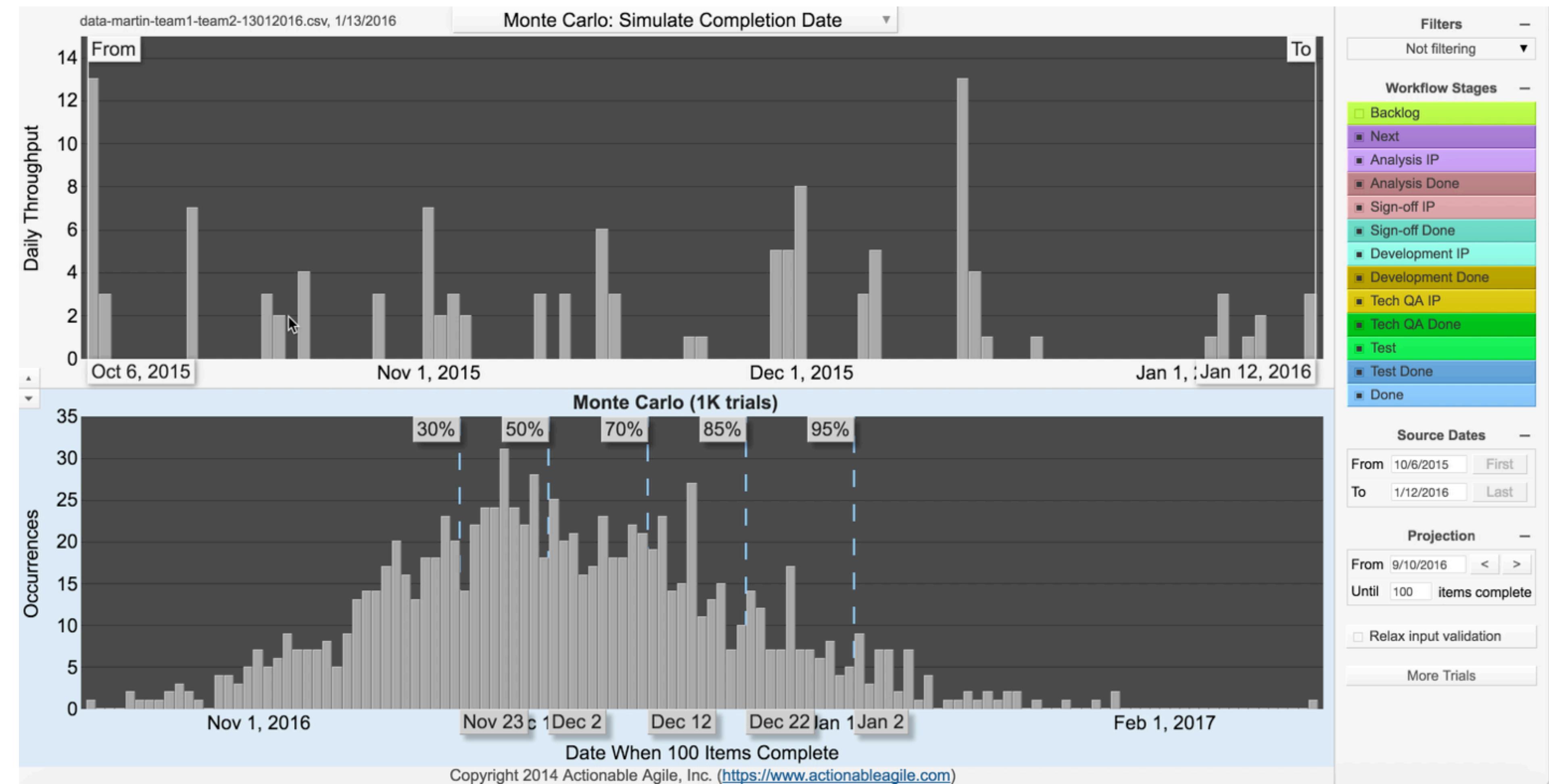


JIRA - Burnup



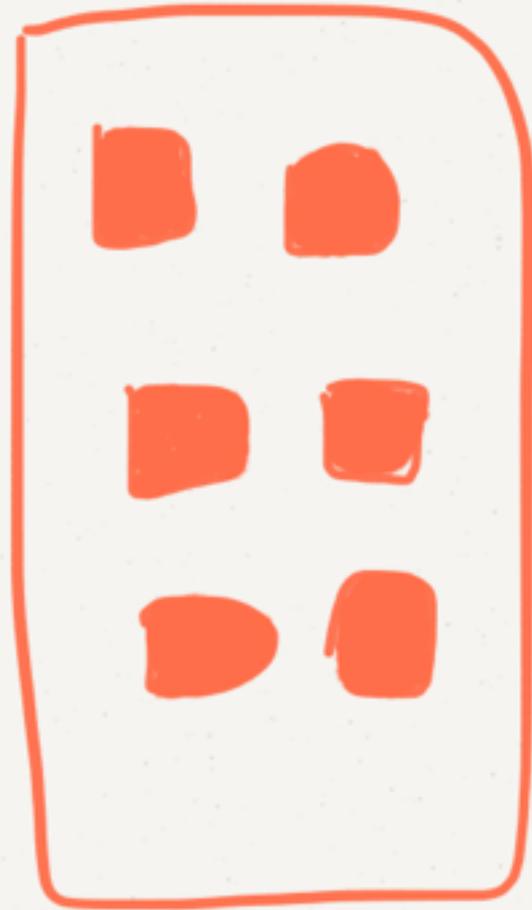
Statistical sampling based simulation - Monte Carlo simulations





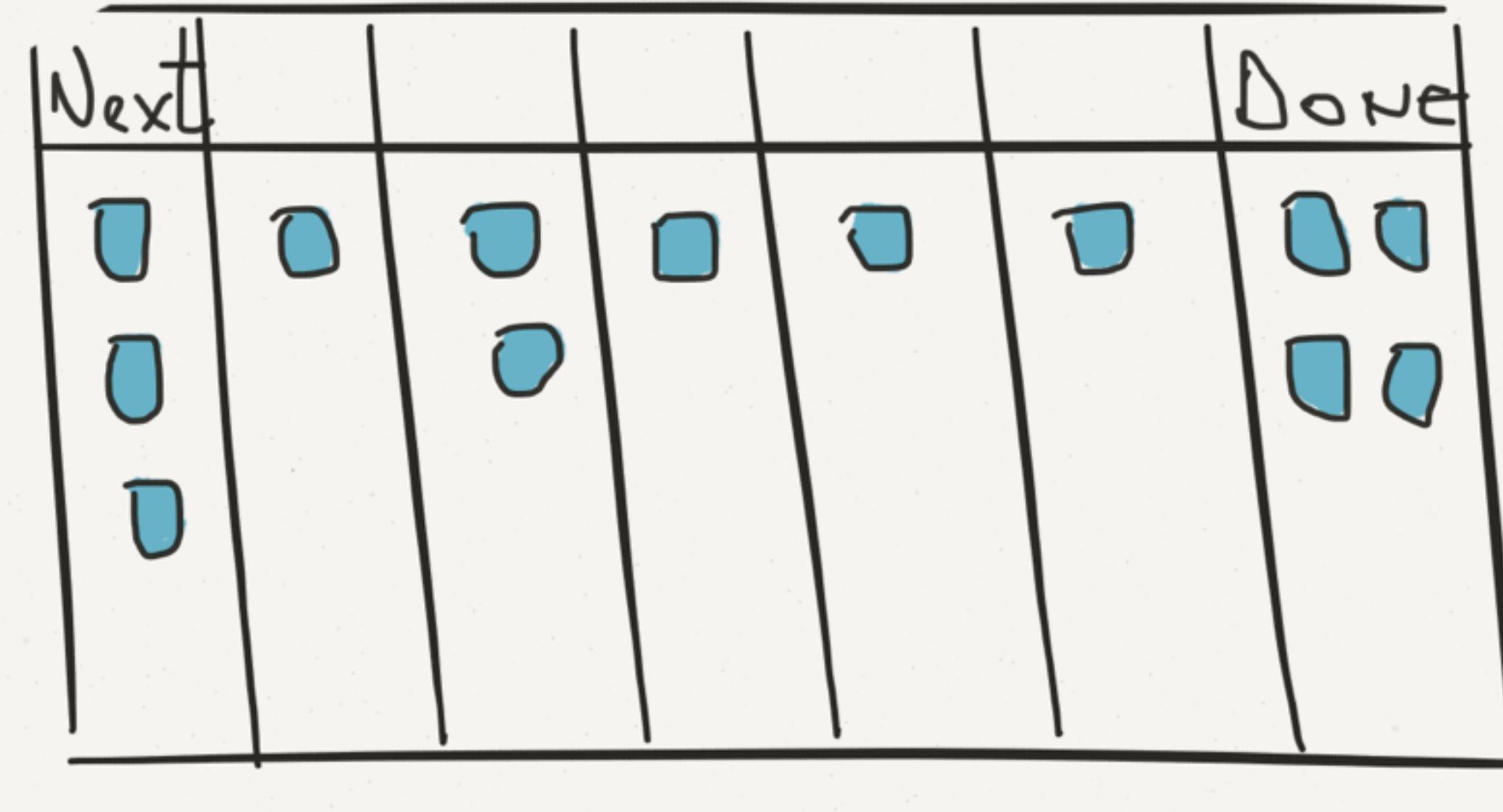
Kanban ceremonies

Backlog

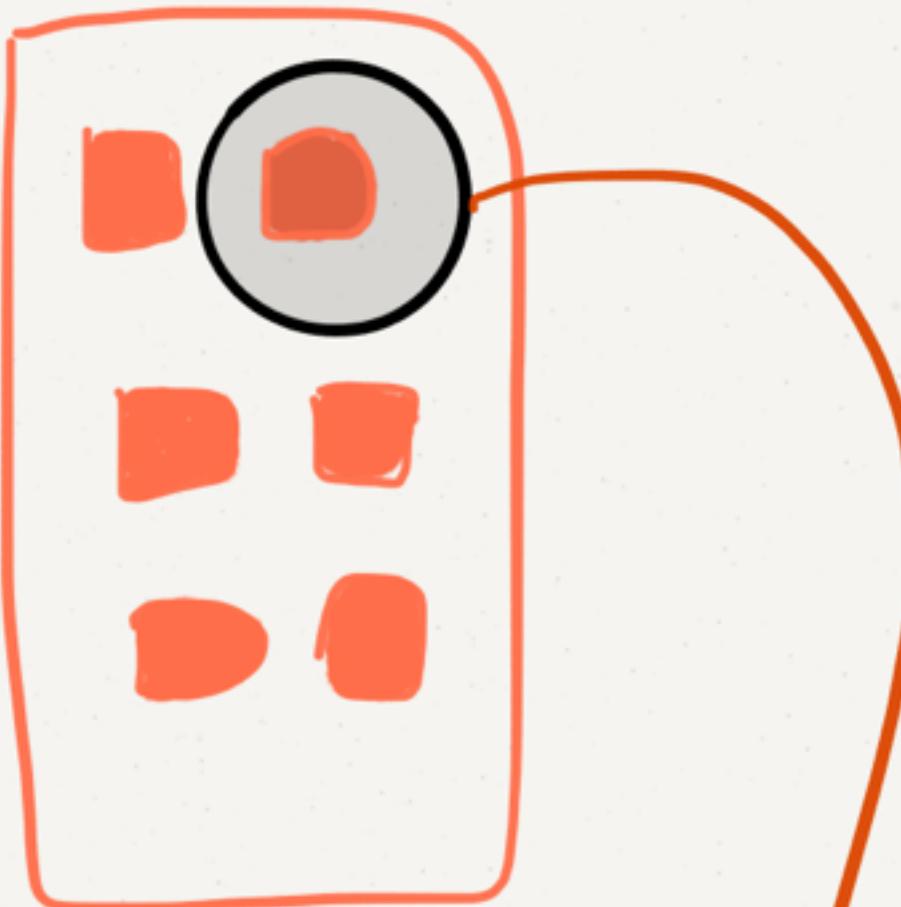


'Replenishment' ceremony

Work In Progress

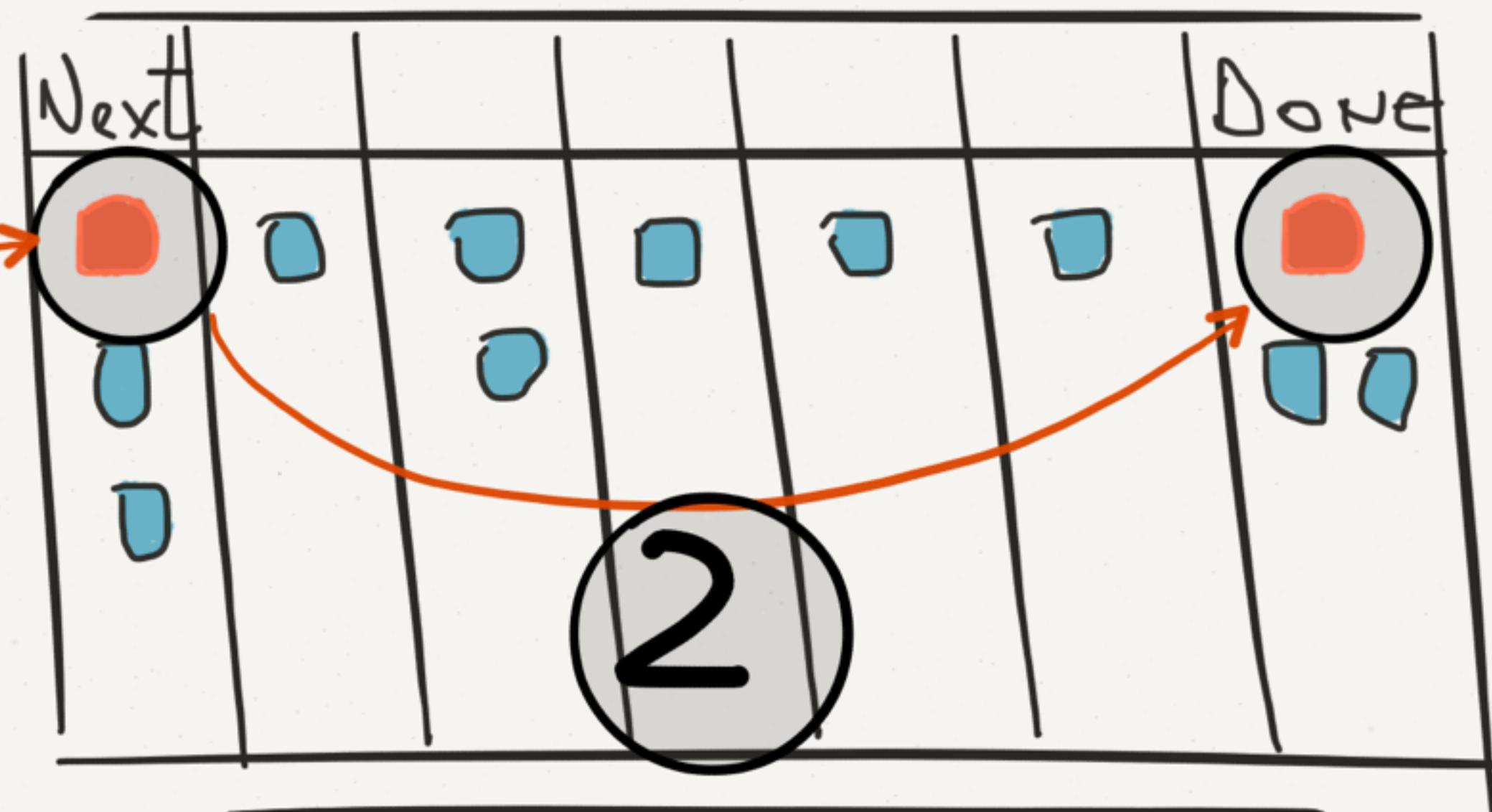


Backlog



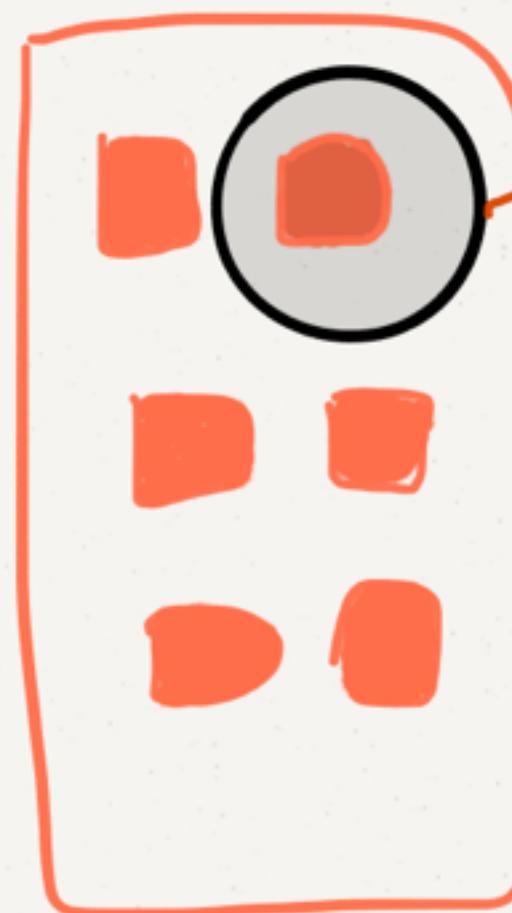
Just In Time

PRIORITIZATION



COMMITMENT

Backlog



Richt Thing

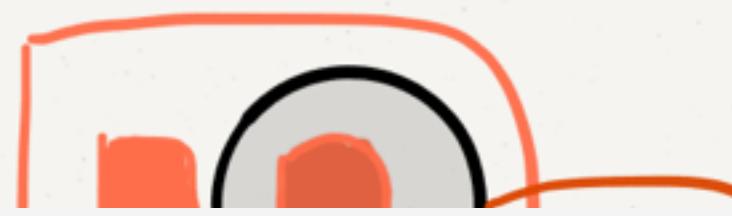
Next

Done

2

Richt Sizing

Backlog

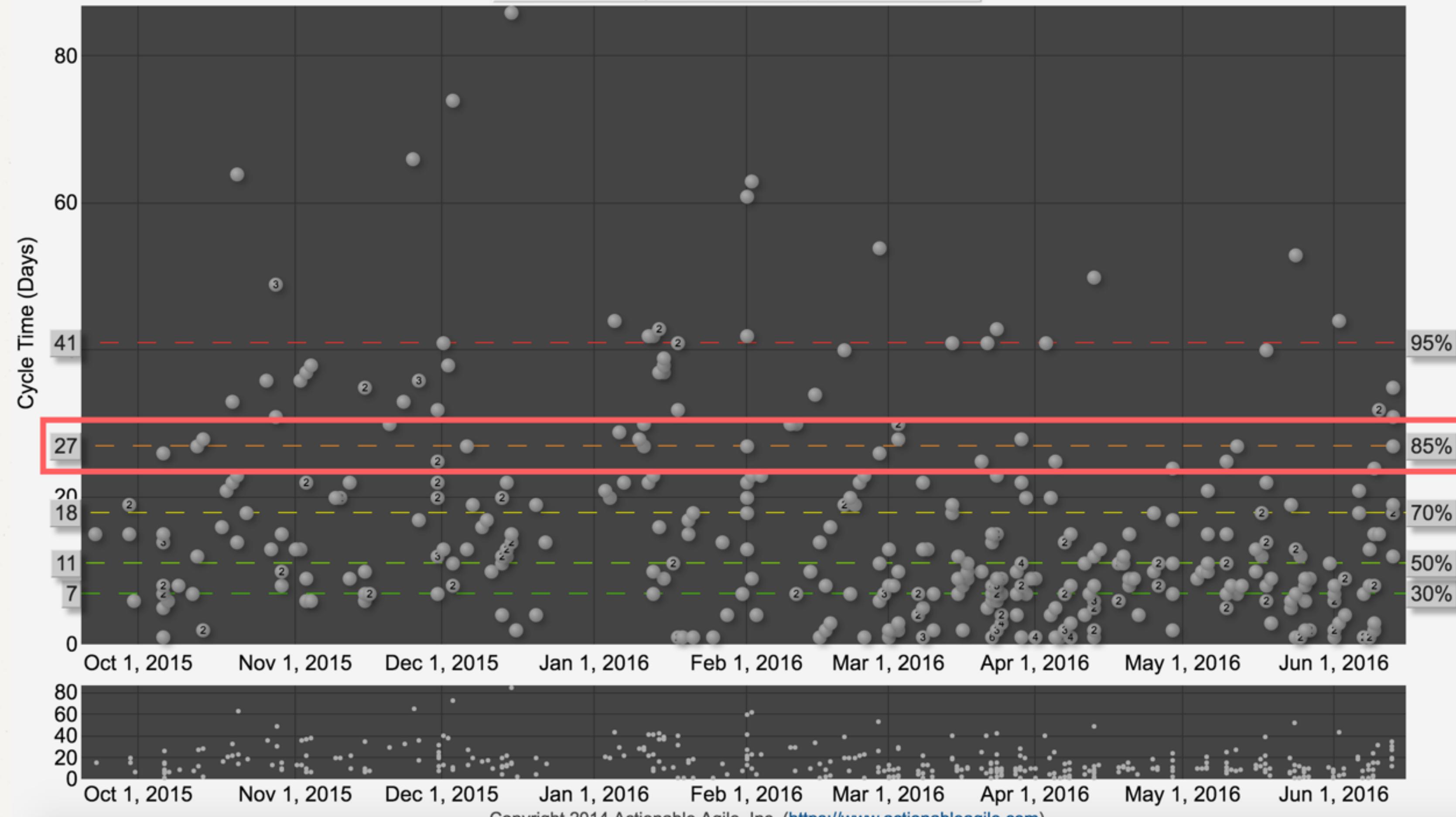


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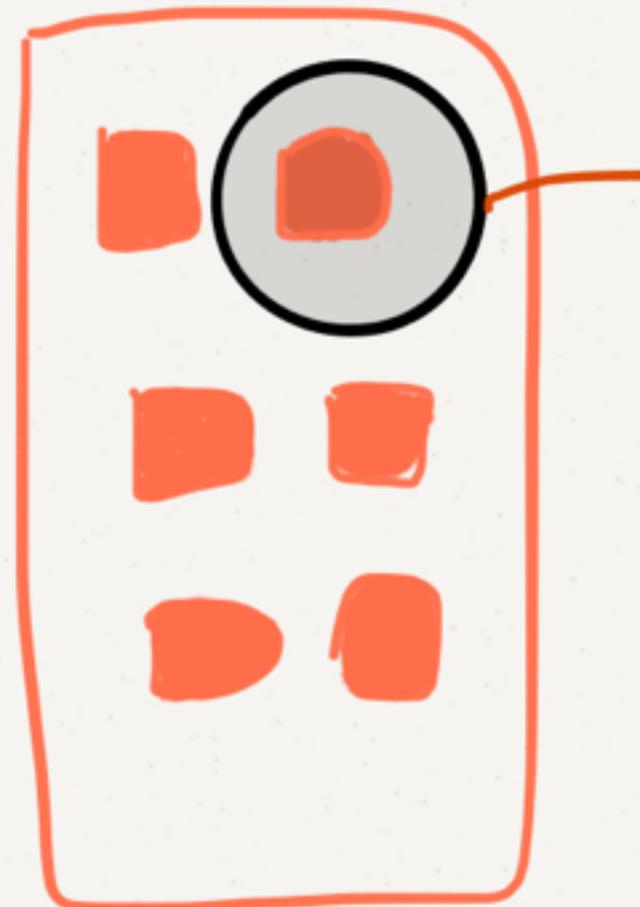
Right Sizing



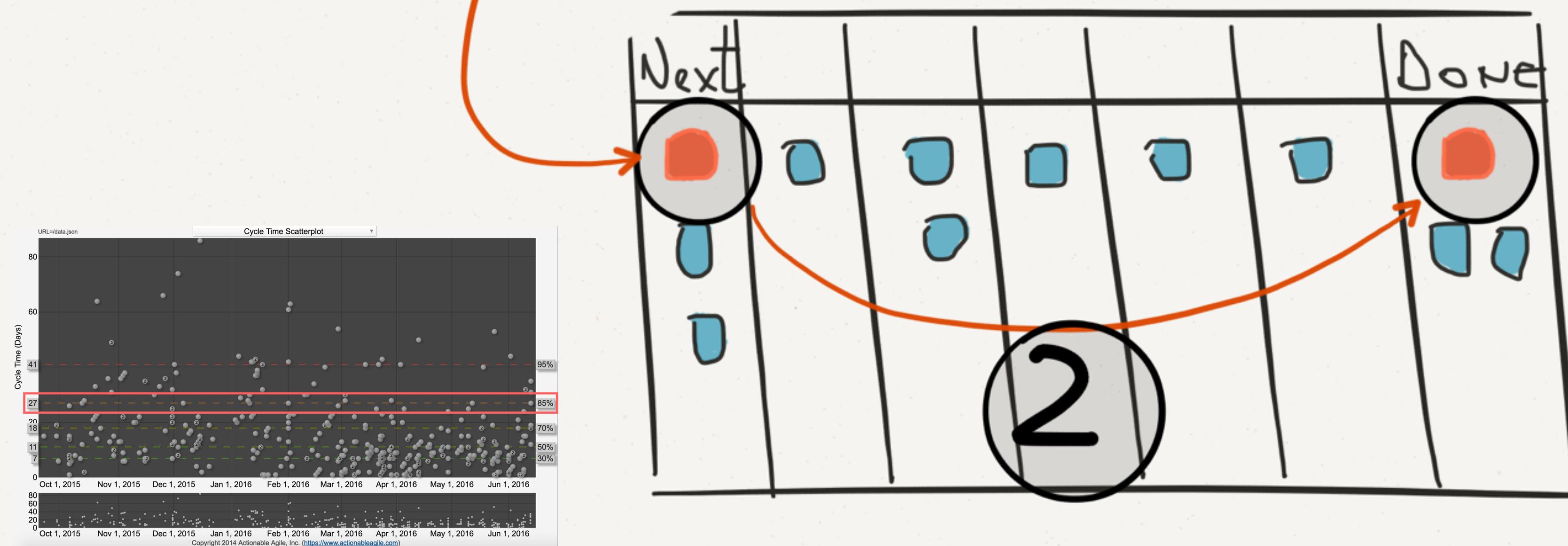
Cycle Time Scatterplot



Backlog

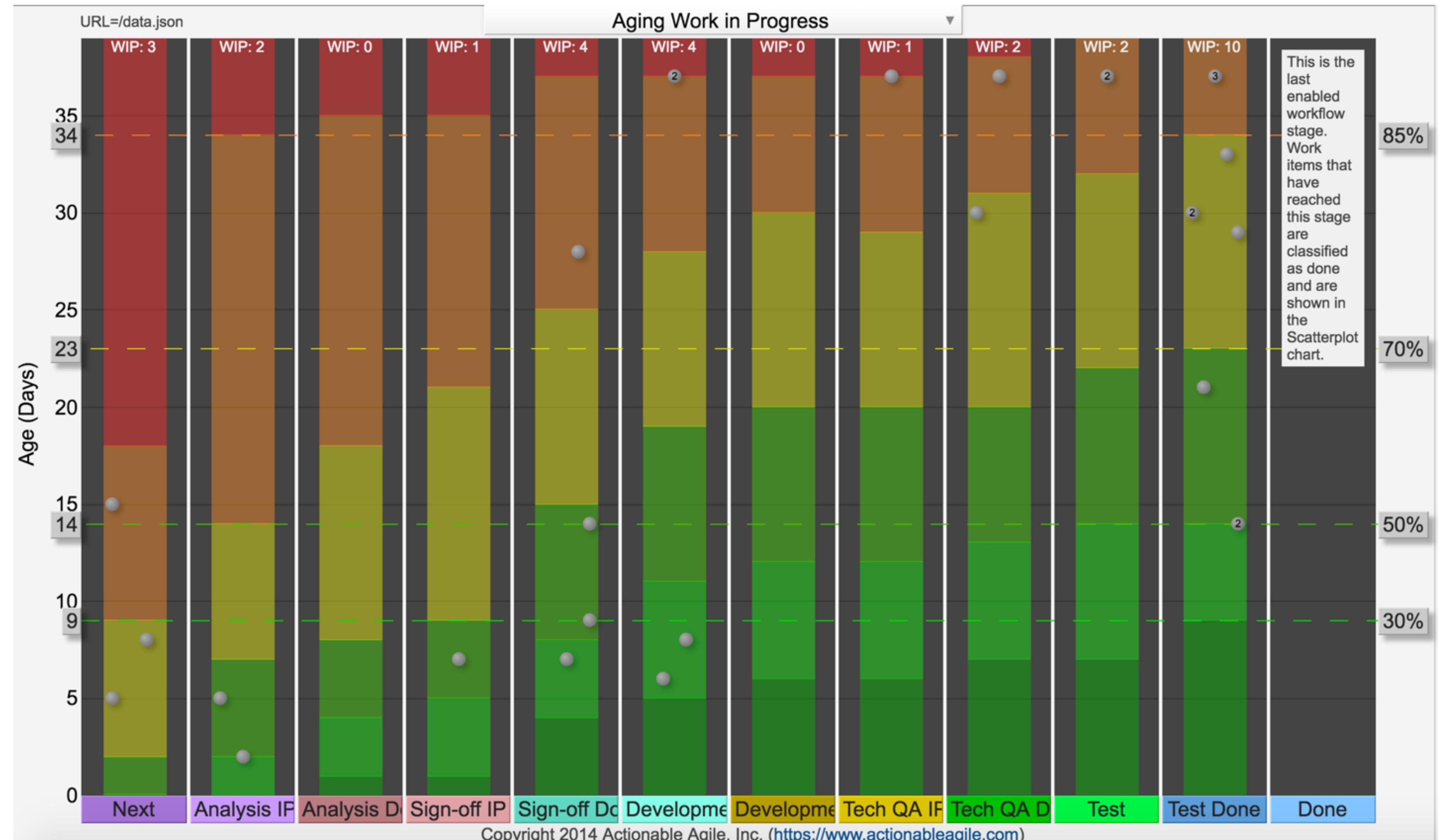


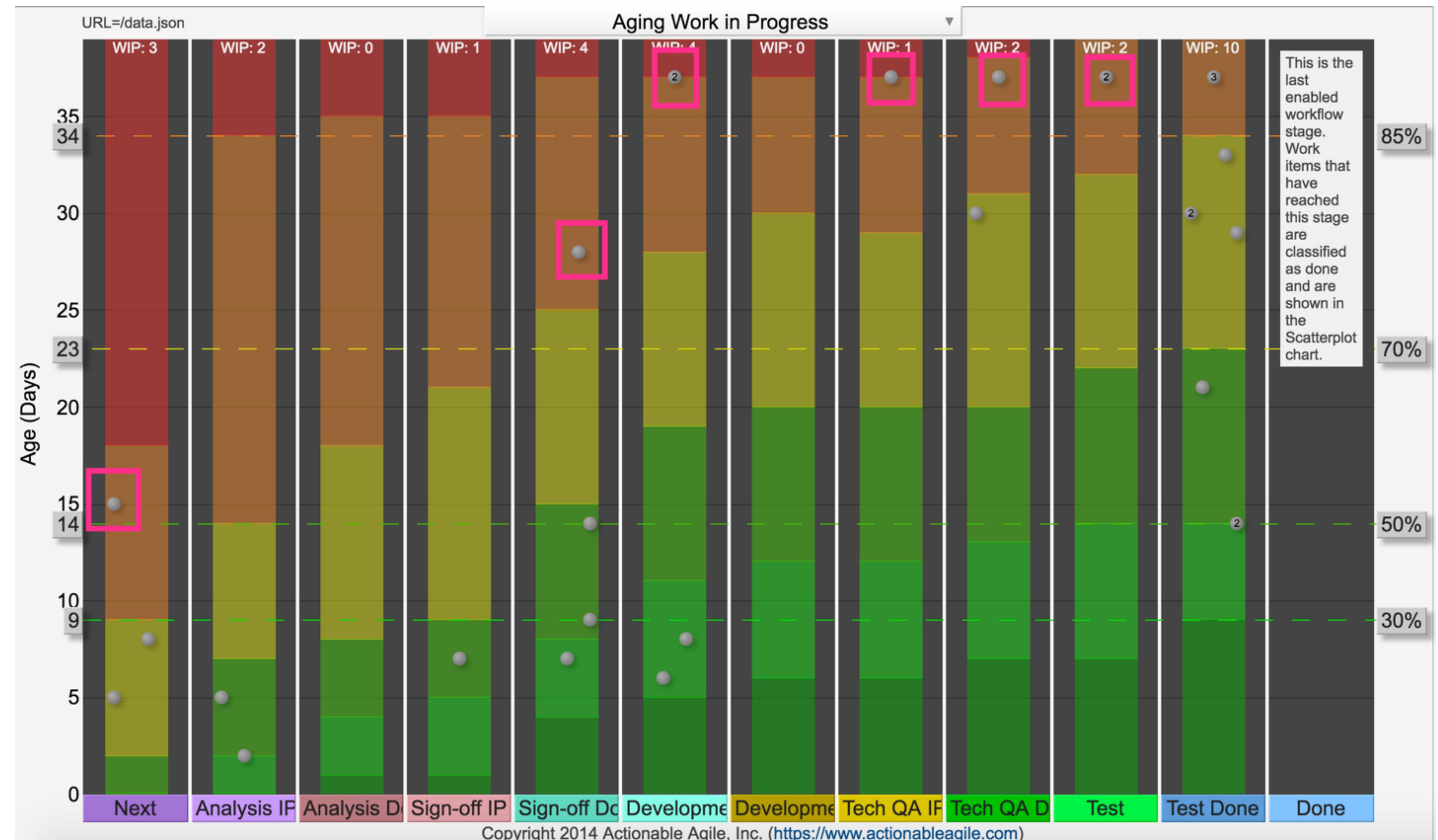
Right Sizing



Monitor aging items

Monitored ‘Aging WIP items’





Other

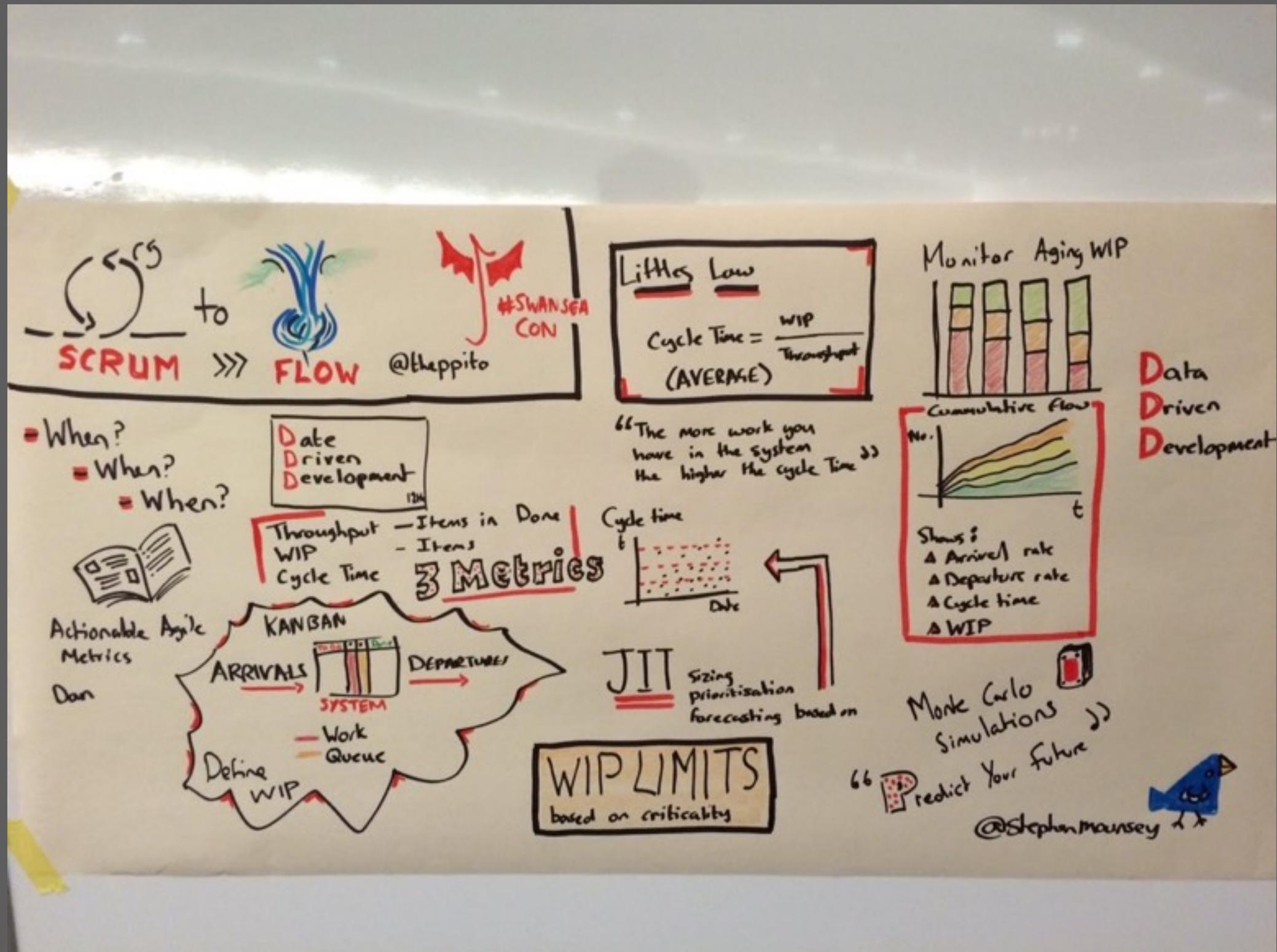
They [Hirotaka Takeuchi and Ikujiro Nonaka] talk about Scrum, which means to them cross-functional teams engaging in the dynamic conflict of ideas **"that generates 'ba,' the energy flow that surfaces knowledge that forms new products.** It's the innovation they are interested in and what westerner's call lean are a bunch of context dependent techniques that are side effects of knowledge generation.

One Page reports

HOTD release	
	Code completion date
Planned	14/06/2016
Forecasted	12/06/2016
85% confidence level	
Delta	2 days

BRP release	
	Code completion date
Planned	14/06/2016
Forecasted	22/06/2016
85% confidence level	
Delta	-8
	days

Thank you!



@theppito