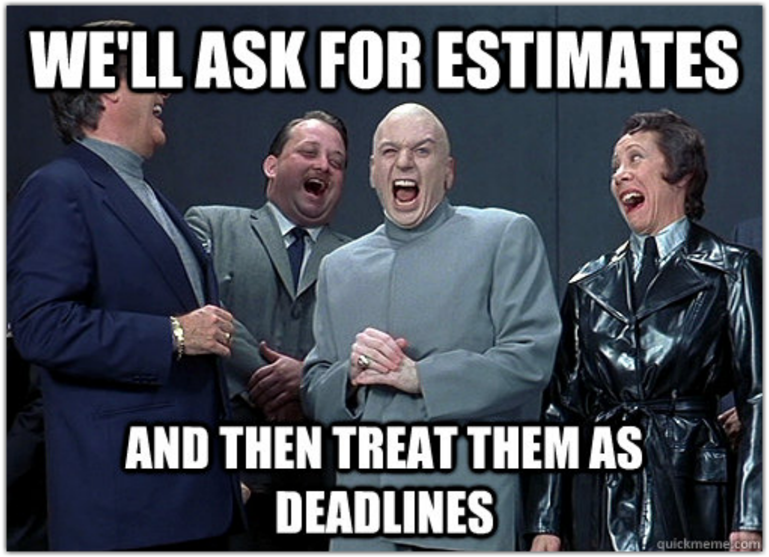


Agile Estimation

HPC-04 Software Engineering

Prof. Dr. Christoph Schober

Why Estimate Stories in Agile?

Estimation in Agile serves several important purposes:

- Facilitates Prioritization: Helps teams prioritize which stories to work on first.
- Improves Predictability: Enhances the team's ability to meet sprint goals and deadlines.
- Enhances Communication: Encourages better communication among team members and stakeholders.
- Identifies Risks: Highlights potential challenges and risks early in the project.

Estimation Techniques

Estimations need a unit system which describes the complexity of a task.

- Real time: Assign person days required for a task ("Create database setup" → 4h)
- Fibonacci Sequence Estimation: Assigns story points based on the Fibonacci sequence (1, 2, 3, 5, 8, 13, ...).
- T-Shirt Sizing: Represents story sizes using T-shirt sizes (XS, S, M, L, XL).

→ When not using real time the team has to agree on the duration of "a story point".

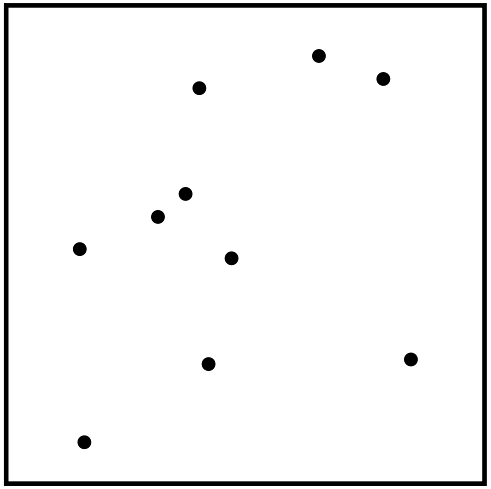
→ Often previous experience is used "a 1 is equivalent to that story from the last sprint"

→ Important: Effort of a story point is team specific and can not be used to compare "throughput" of different teams! ("Team X has done 20 story points last sprint, but you only did 12!")

Various techniques can then be used to estimate story points.

- Planning Poker: Team members individually estimate stories and discuss until consensus is reached.
- Bucket System Estimation: Stories are grouped into buckets or categories to simplify estimation.

Fibonacci Sequences or the Weber-Fechner-Law



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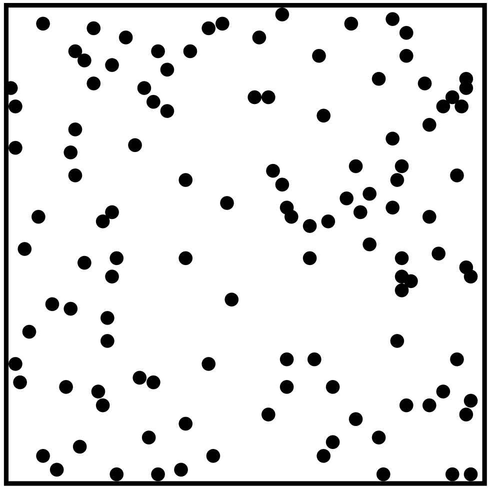

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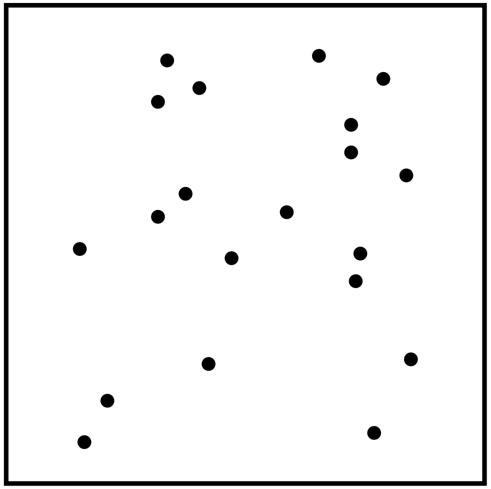

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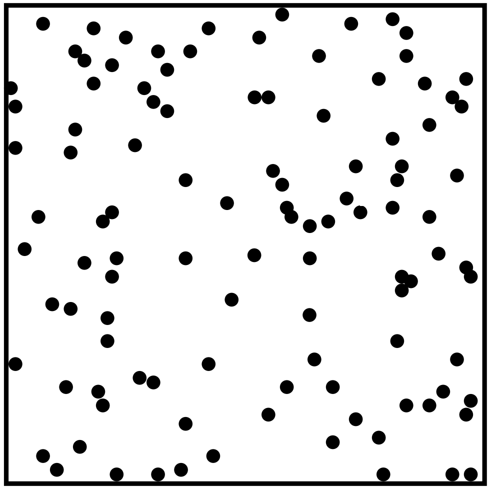

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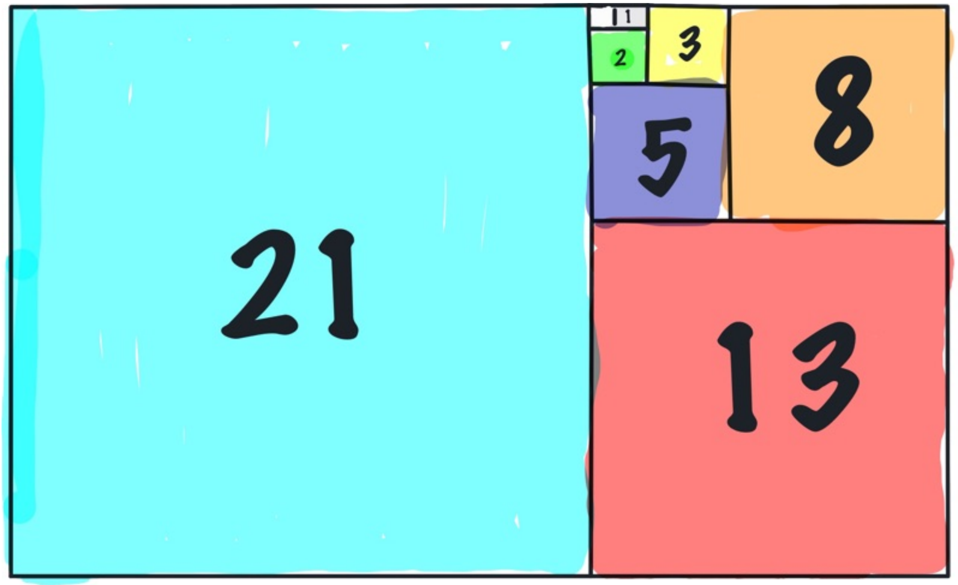
Fibonacci Sequences or the Weber-Fechner-Law

The (simplified) Weber-Fechner-Law says that humans perceive differences based on percentages rather than absolute numbers.

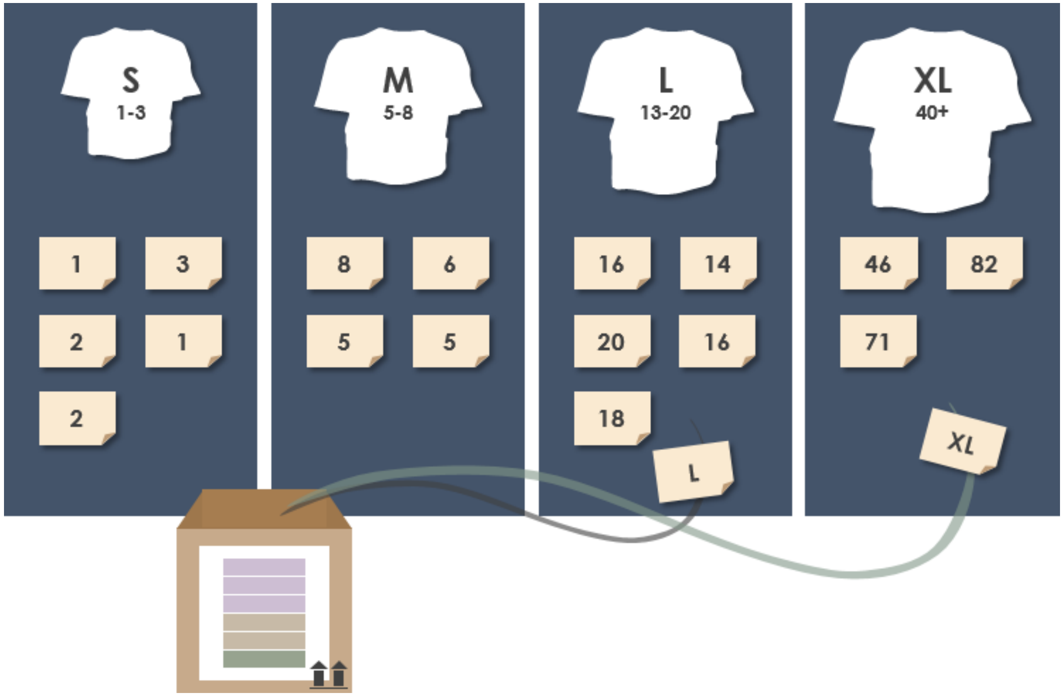
- deciding if a small story has 1 or 2 points is easier than if a large one has 41 or 42 points
- linear sequences become inaccurate for higher values
- numeric systems with equally sized relative increments work well



T-Shirt Sizing

Another approach to avoid the "Weber-Fechner-trap" is T-Shirt-Sizing:

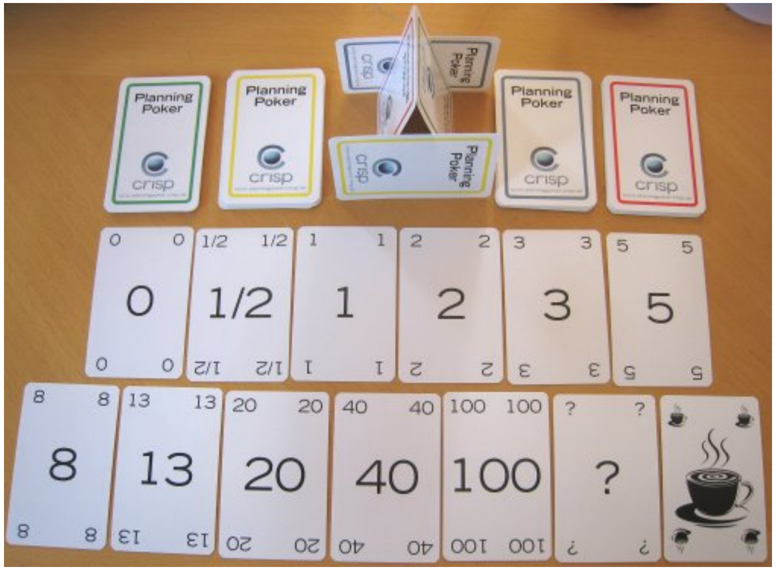
- XS: Extra Small - The smallest and simplest tasks.
- S: Small - A bit more work than XS but still relatively simple.
- M: Medium - Tasks with moderate complexity and effort.
- L: Large - Complex tasks that will require a significant effort.
- XL: Extra Large - The most complex and time-consuming tasks.



Planning Poker

Planning Poker is a collaborative estimation technique:

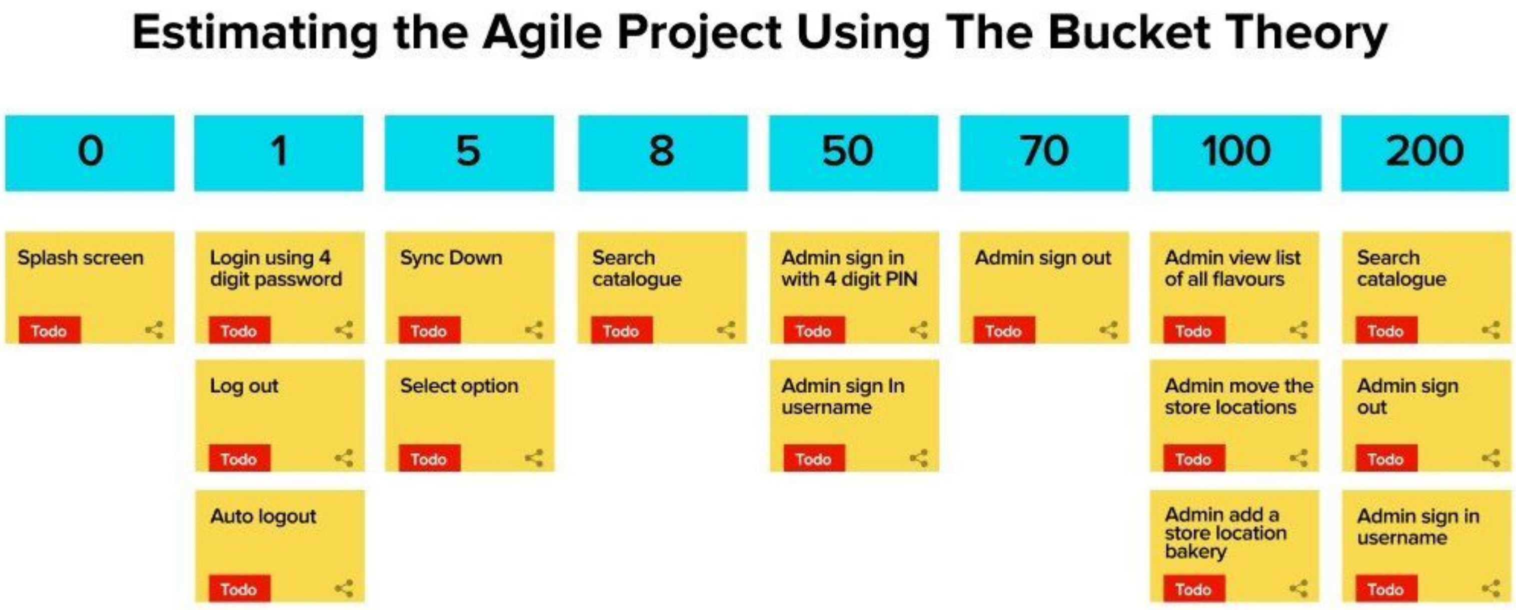
1. Team members individually estimate story points for a given task.
2. Estimates are revealed simultaneously and discussed openly.
3. Discussion continues until a consensus on the story points is reached.
4. Possible offline (with cards) or online (many apps/websites)



Bucket System Estimation

Bucket system estimation groups tasks into buckets or categories. Useful when a huge number of tasks must be estimated.

- Tasks are categorized based on their complexity or size.
- Teams assign story points to each bucket, making estimation easier.



Estimating the Agile Project Using The Bucket Theory

0	1	5	8	50	70	100	200
Splash screen Todo	Login using 4 digit password Todo	Sync Down Todo	Search catalogue Todo	Admin sign in with 4 digit PIN Todo	Admin sign out Todo	Admin view list of all flavours Todo	Search catalogue Todo
	Log out Todo	Select option Todo		Admin sign In username Todo		Admin move the store locations Todo	Admin sign out Todo
	Auto logout Todo					Admin add a store location bakery Todo	Admin sign in username Todo

Hands-On: Planning Poker

Your partner planned a nice evening dinner with your friends and invited them to taste your famous Spaghetti Bolognese. Unfortunately, you never really cooked Spaghetti Bolognese for others before and now need to plan the project.

You've asked ChatGPT to give you a nice set of user stories to follow and now need to estimate and prioritize them to make sure the evening will become a success!

Use https://planningpokeronline.com/

Please open https://t1p.de/9pm8f to join the game!