

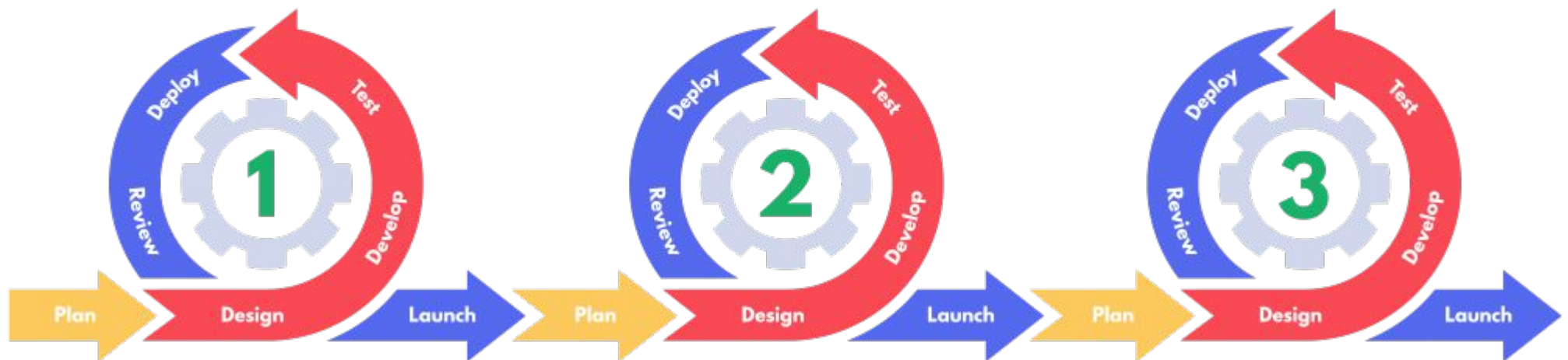
Agile Software Model

Zarin Hadika

What is agile software development?

- Agile software development is an iterative and incremental approach to building software that emphasizes flexibility, customer collaboration, continuous feedback, and continuous improvement.

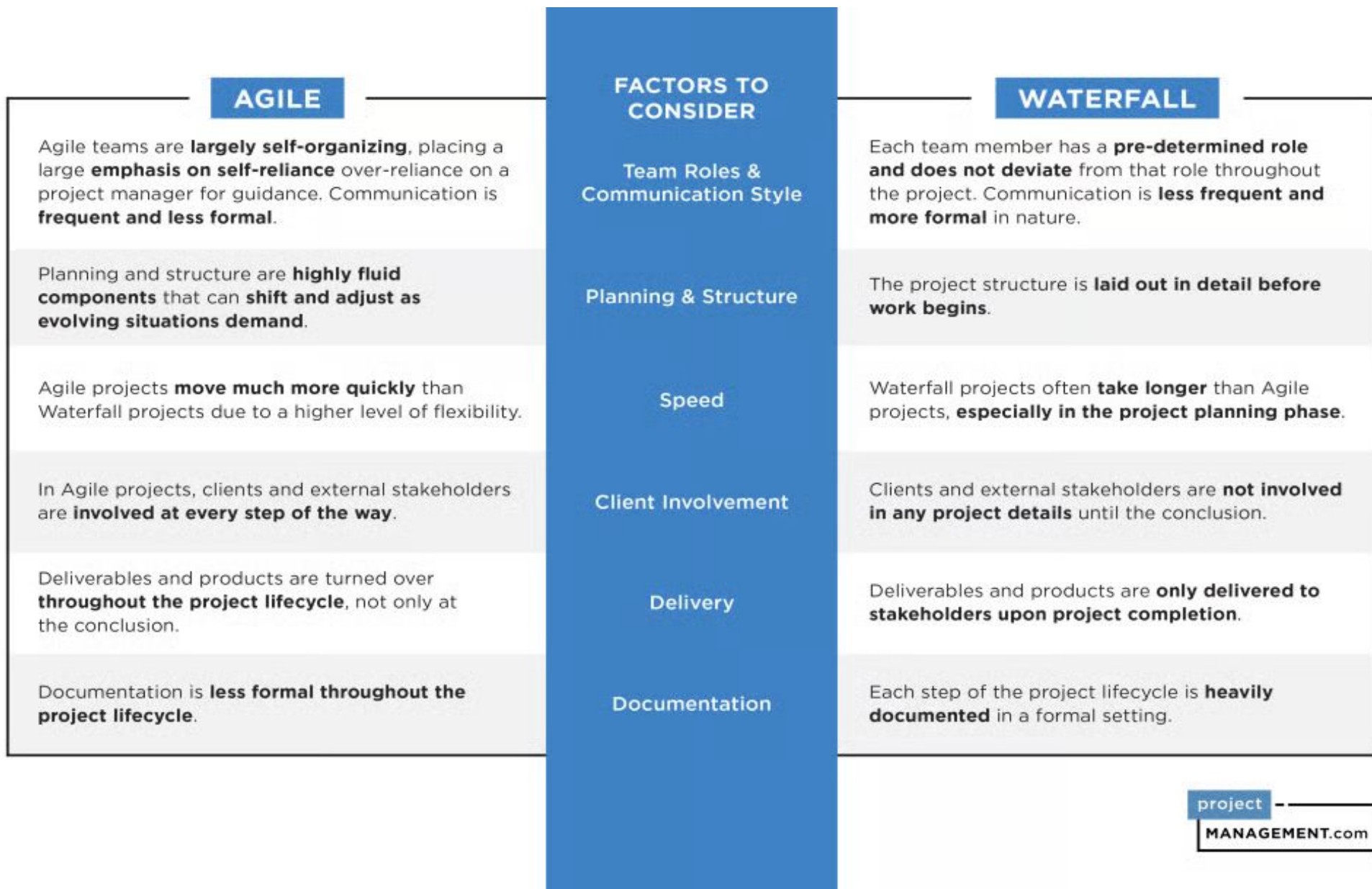
AGILE DEVELOPMENT





VS

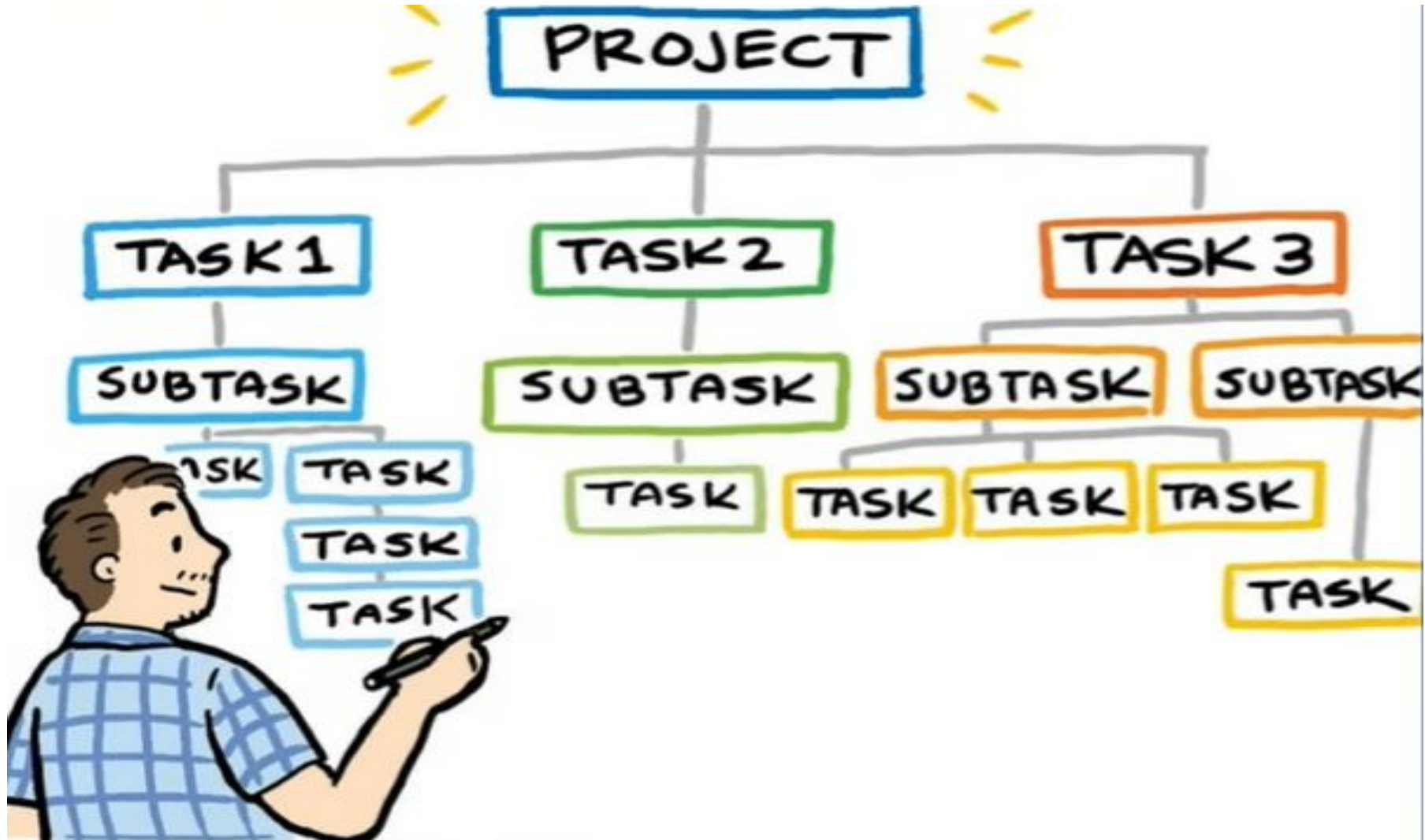




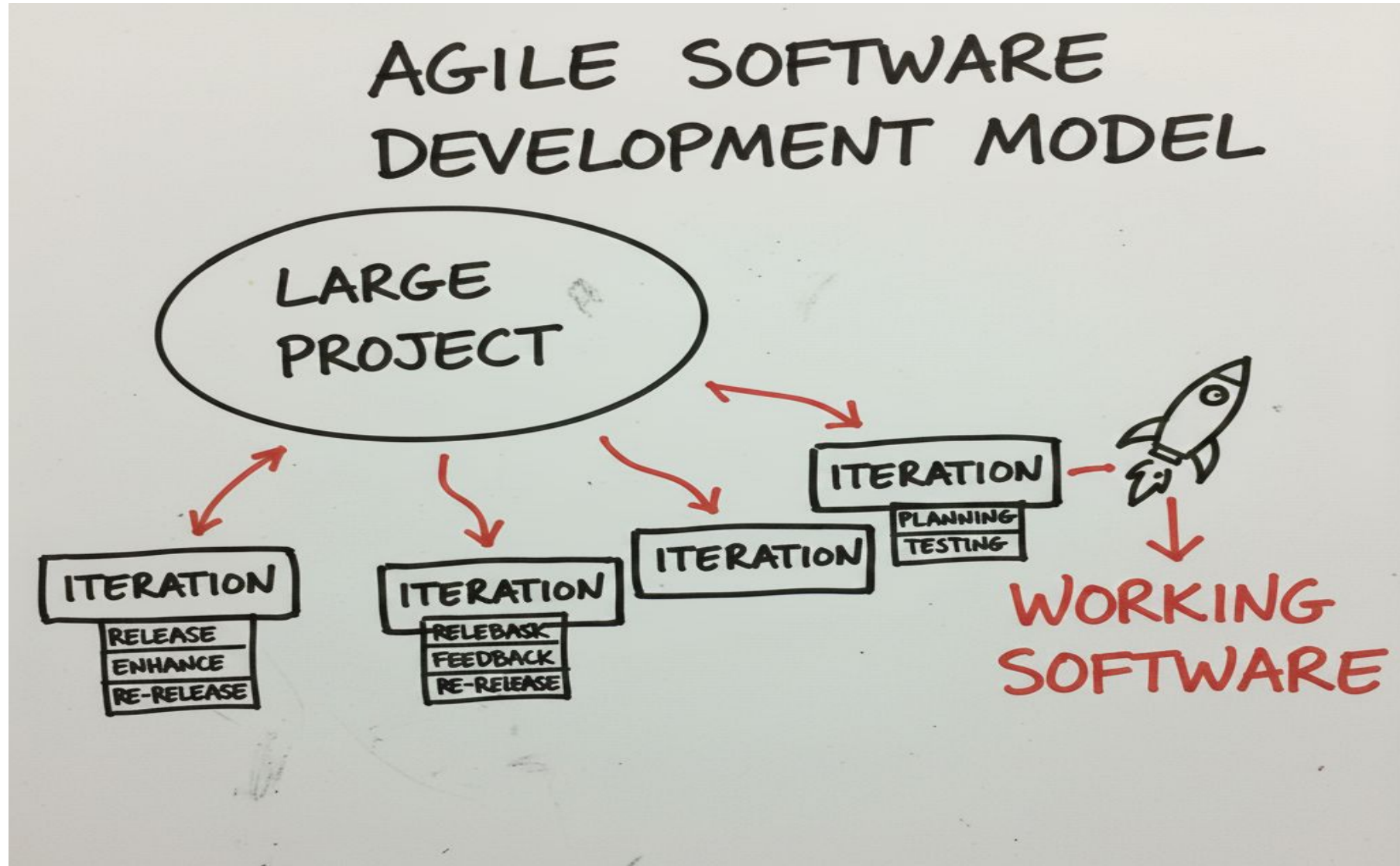
Agile Vs Waterfall



Working procedure of Agile



Working procedure of Agile

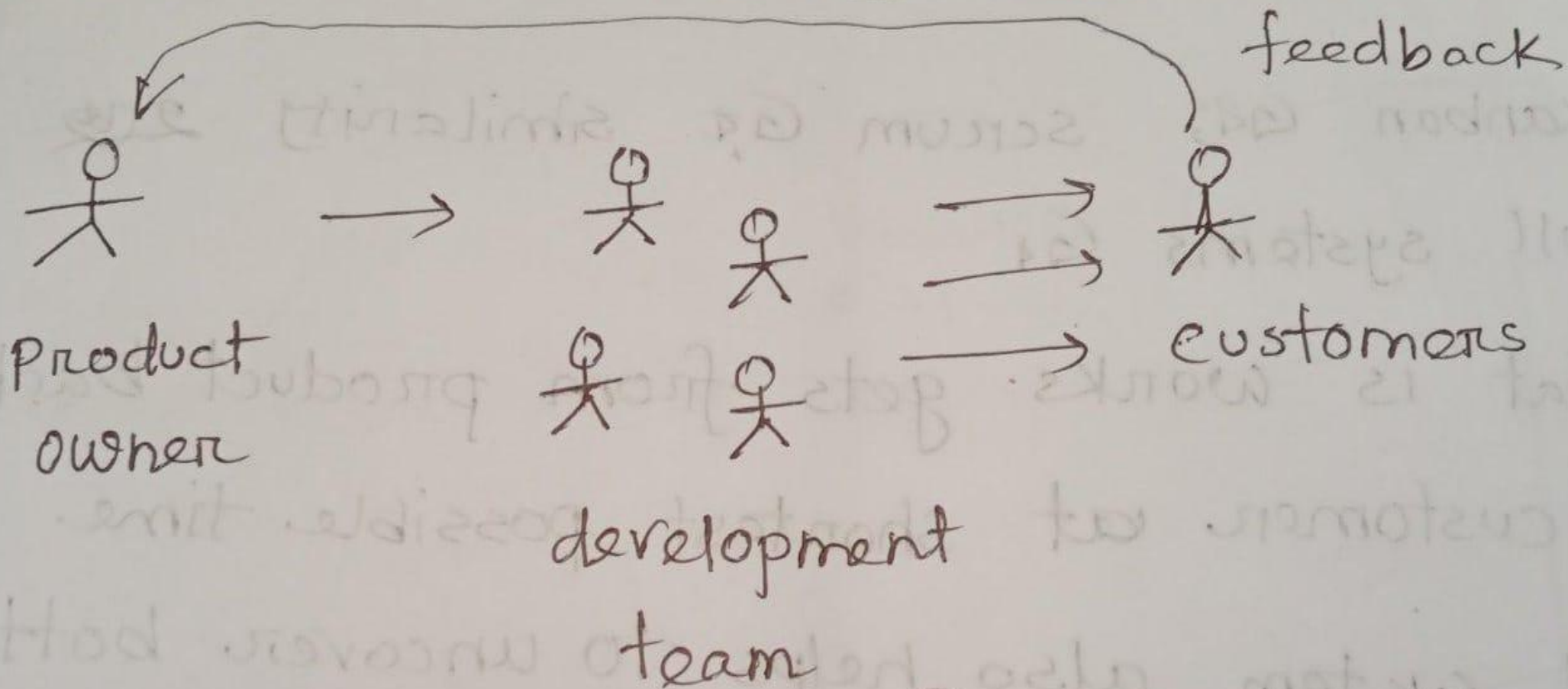


Key features of Agile Software development model

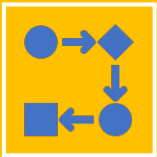
1. Customer Collaboration : Agile focuses on what the customer actually needs, and this can evolve as the project goes on.
2. Flexibility : If something changes , e.g., technology , customer needs, or market trends , teams can fire and adapt easily.
3. Team Collaboration :Everyone in the team from developers to customers , communicate regularly to stay aligned.

Several Frameworks of Agile

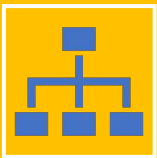
1. Kanban
2. Scrum
3. XP
4. DSDM
5. FDD
6. AUP
7. Agile Modeling



Scrum Model



Scrum is an incremental and iterative model.

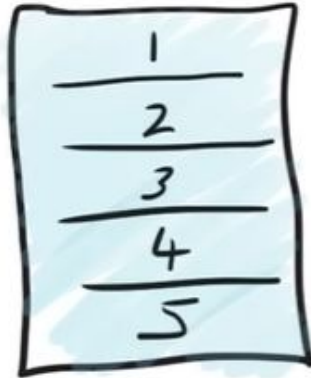


Important terms for scrum model : Sprints, Scrum Master , Product Backlog, Sprint Backlog, Scrum Board , Sprint Retrospective, Sprint Review ,Pull System

STAKEHOLDERS



**PRODUCT
OWNER**



**PRODUCT
BACKLOG**



SCRUM MASTER



**DEVELOPMENT
TEAM**



CUSTOMERS



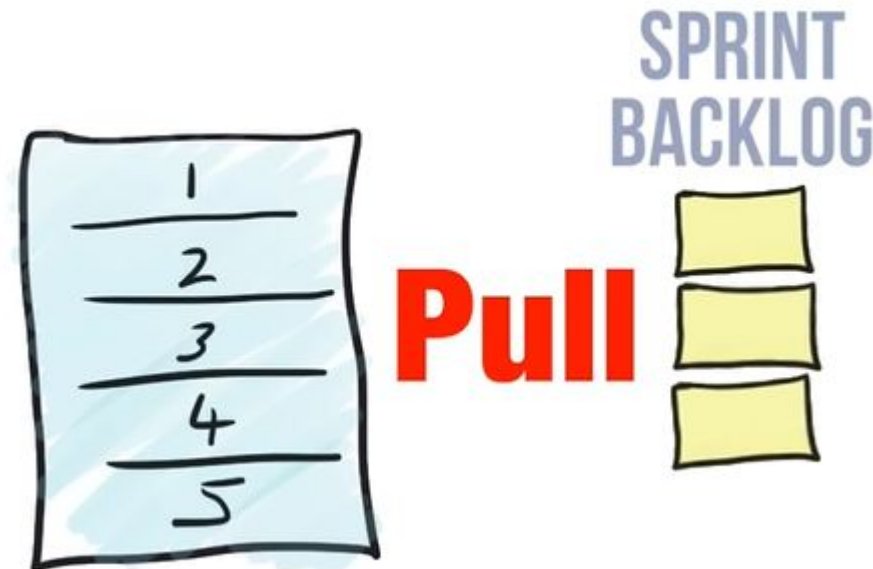
Sprint Planning Meeting

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1. Product owner collects the feedback from customers/users and stakeholders and creates a priority list according to the features and user stories , which is known as **product backlog**.
2. In Scrum, the team divides the overall work into iterations called sprints. **A sprint** is a time-bounded cycle during which a specific set of tasks (from the product backlog) is completed. Each sprint usually lasts 2 weeks to 1 month. Scrum teams work in series of sprints. Each sprint starts with sprint planning meeting which is run by scrum master and attended by the product owner and development team.

- The product owner and development team have their own rituals and routines. **Scrum master** is the person whose task is to maintain the routines of product owner and development team and help them to adapt them (routines).
- Delivering items from the product backlog to the customer in the shortest possible time is called a **pull system**. Pull system also helps to uncover the bottlenecks in the process.
- Together they select high priority items from product backlog and development team believe that it(the prioritized items) can commit to deliver in a single backlog and these items are in **sprint backlog** now.



- Next two weeks to 1 month, the developer teams work with only those items in the sprint backlog , if further adjustment or any new features need to included it will be available for next sprint.
- Scrum team keep a board called **scrum board or agile board** to keep track of the work progress.
- Each day of the sprint there is a scrum meeting. It's a stand-up meeting where the team takes a maximum of 15 minutes to discuss progress.
- At the end of the sprint , the worked completed during the sprint is packaged for release, any incomplete items are returned to the product backlog.

1
2
3
4
5

TO DO	BUILD	TEST	DONE



- Sprint end with two rituals:

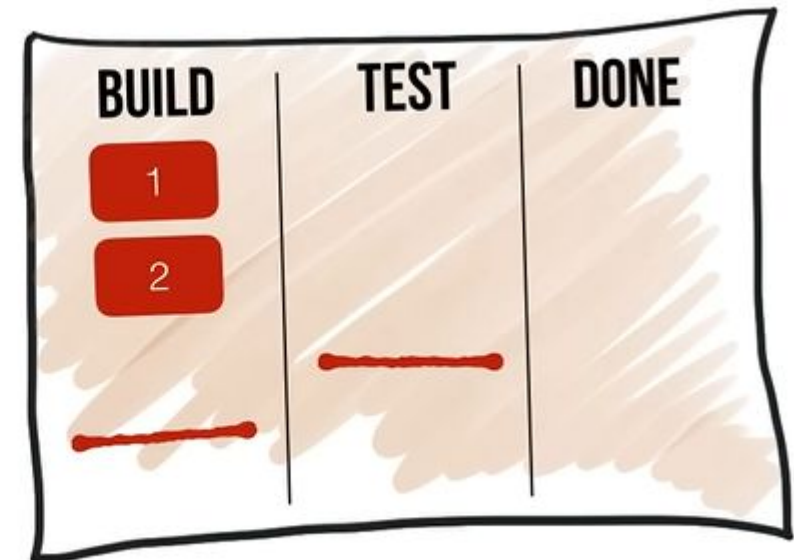
Sprint Review is a demonstration of new functionality to stakeholders.


Sprint Retrospective is an examination of what went well, what went badly and what could be improved.

The aim of the retrospective is the next sprint should be more sprint than the previous one.

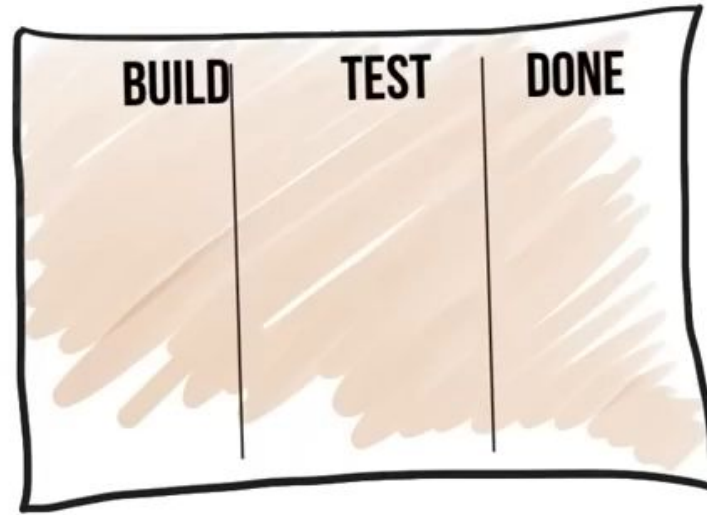
Kanban Model

1. Kanban is a continuous process.
2. There is no sprint backlog. The pull system in kanban happens in different way, Work In Progress Limits.
3. Each Kanban board's column has a Work in Progress Limit, related to teams' capacity.
4. The role of scrum master here is known as agile coach.





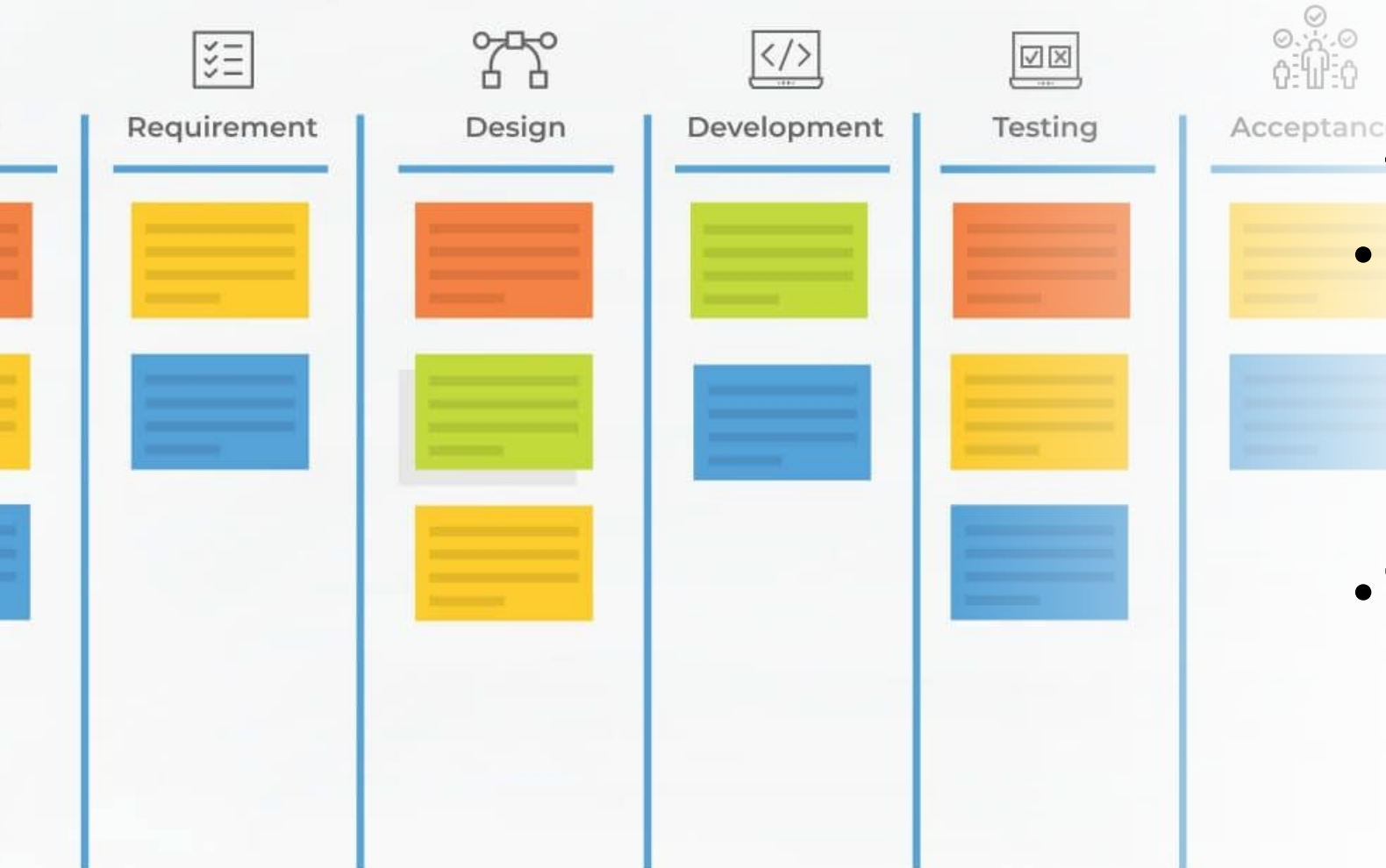
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BUILD	TEST	DONE



Kanban Board



- When testing of a particular feature or item is completed the corresponding item move to done .
- Empty column in kanban board is a signal to the previous column to send an item , that's pull system.
- The terms used for kanban are daily stand-up meeting, demo for stakeholders and retrospective.

Question

Then how pull happens between build to product backlog in kanban model? When to use kanban or Scrum model??

