## 1.3. KANBAN and SCRUM

So, there is no single Agile methodology. The authors of the manifesto tried to compile one, but then decided that creating a template for all situations would not work and would limit the scope of Agile. Instead, there is a group of approaches to put Agile values and principles into practice.

We`ll talk about some of the tools for implementing Agile.

Kanban (Jap. カンバン kamban) is considered to be one of the ways of flexible project implementation. It was originally introduced by the Toyota Corporation as a system of production and supply organization to implement the just-in-time principle. In Japanese, the word means "billboard, signboard, card". In car factories, cards were used to communicate information from one stage to the next about how many and which parts would be needed. To work with Kanban, workflow steps must be defined. In Kanban, these are represented as columns and tasks are labelled with special cards. The card moves through the stages, like a part in a factory moving from machine to machine, and at each stage the percentage of completion becomes higher. The output is a product element ready to be delivered to the customer. The board with columns and cards can be either real or virtual (electronic). In Kanban, it is allowed to leave an unfinished task at one of the stages if its priority has changed and there are other urgent tasks.
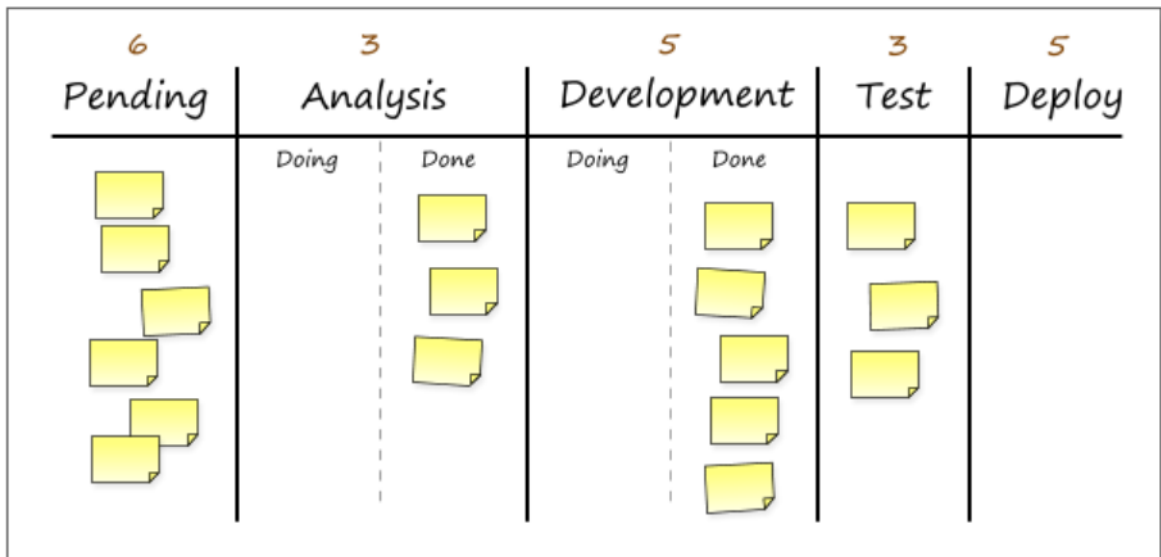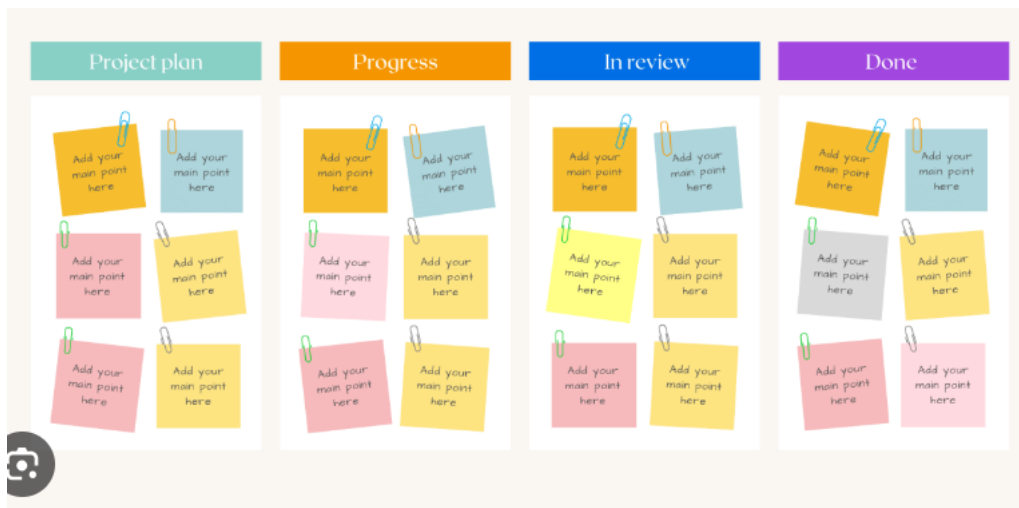
Figure 1.6. Examples of Kanban boards

Let`s list the main elements of this approach.

Cards. For each task (work) an individual real or electronic card is created, in which all necessary information about the task is entered.

Limitation on the number of tasks per stage. The number of cards at one stage is strictly regulated. Thanks to this, you can see at a glance when there is a "jam" in the flow of operations that needs to be eliminated.

Continuous flow. Tasks from the queue get into the flow in the order of priority.

Continuous improvement. Constantly analysing the process and looking for ways to improve performance.

In general, Kanban is often thought of as only part of the broader **Lean** system, which is based on the concept of lean manufacturing. About 10 years before the Agile Manifesto, two of its authors Ken Schwaber (president of a software improvement company) and Jeff Sutherland (technical director of a healthcare software company) proposed the **Scrum** approach. The term comes from rugby, where "scrum" means "fight", "battle". Scrum is a framework with rigid rules and boundaries.

Scrum breaks a project down into parts that can be used immediately by the customer to deliver value. These parts are called ***product backlogs***. In Russian practice, the word "***backlog***" is most often used. The customer's representative in the team then prioritizes these parts. The most important parts are first selected for execution in a Sprint, an iteration in Scrum (each Sprint usually lasts from 2 to 4 weeks).

The basic Sprint procedures are as follows.

Backlog Refinement Meeting (Backlog Grooming). Similar to the planning phase in classic project management. It is held on the first day of each Sprint. It reviews what has already been done on the project as a whole, what remains to be done and decides what to do next. It determines which tasks are the highest priority at this stage.

Sprint Planning. The team jointly decides what exactly its members will do during the next iteration, how to achieve the goal set at the previous meeting. Teams can use different planning and evaluation tools at this stage, as long as they do not contradict the principles and logic of Scrum. Sprint planning is done at the very beginning of the iteration, after the Product Streamlining Meeting.

Daily Flyouts. Each day of the Sprint, ideally at the same time, team members spend about 15 minutes sharing information about the status of tasks and project status. There is no discussion of problems or decision-making at the meeting - if there are any issues or conflicts after the meetings, the involved members discuss them separately. A flyout, on the other hand, is for sharing information and keeping all team members up to date on the status of the project.

Sprint Retrospective. This takes place immediately after the Sprint Debriefing and before planning the next Sprint. The team finds out how smoothly and coherently the implementation of the stage went. Problems encountered in work, methodology and communication are examined.
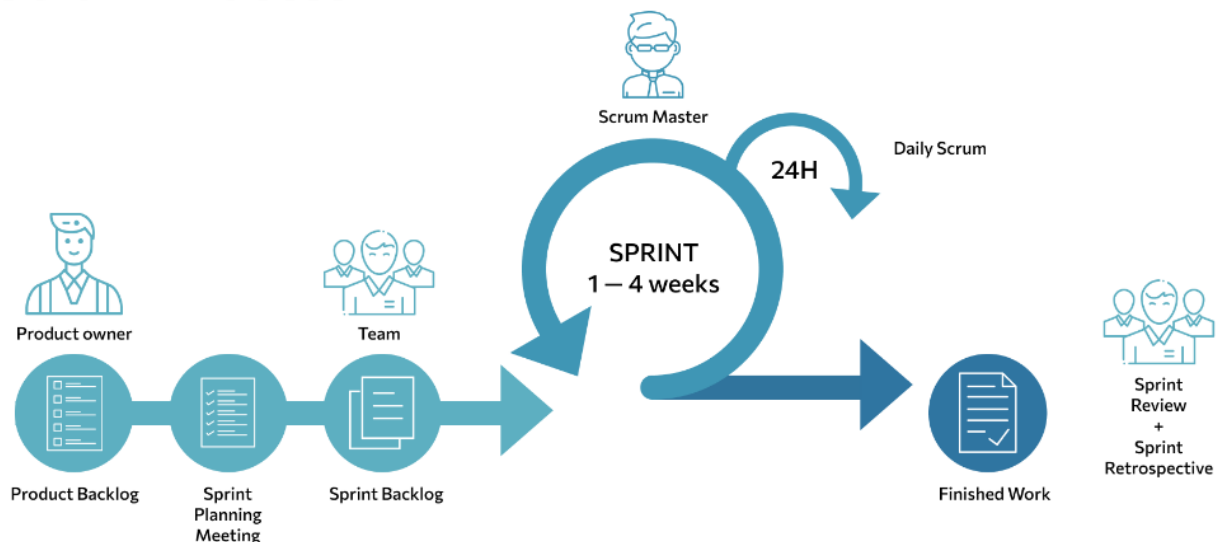

Figure 1.7. Scrum process

The following main components can be identified in the comparison of Kanban and Scrum.

Scrum:

- dividing the work into parts called Sprints;

- sprints are planned based on the requirements for that particular point in time;

- relative estimation of the time to complete the work;

- reviewing each Sprint to see how it went and what could be improved;

- feedback on the delivered product;

- daily meetings (very short).

Kanban:

- weekly meetings;

- continuous development;

- visualizing the process on a whiteboard;

- tackling the most important tasks first;

- incremental improvements.