

Agile Software Tools

Overview

- Kanban
- Trello
- Jira
- Scrumban and Kanplan

Kanban

- Kanban is Japanese for ‘visual sign’ or ‘card’.
- Originated in 40’s in Toyota.
- It is basically a board divided into lanes with cards representing work to be done.
 - Cards move from lane to lane as they are completed.
- It is a framework like Scrum, and does not prescribe how the detailed work is done.
- It is less formal than Scrum.
- Kanban can be used for many tasks, not just software development.

4 Principles

1. Visualise Work.
 - It is easy to see the ‘big picture’ since all the work still to be done appears on the one board.
 - Each task fits on to a single index card or even postit note.
2. Limit Work in Progress
 - Each lane has a limit to the number of cards that it can contain.
 - It reduces the number of partially completed tasks.
 - If a lane fills up then one of the partially finished tasks must be completed and moved to another lane to make room for a new card.

Principles (2)

3. Focus on the flow, there are metrics for measuring progress.
 - i. Work in progress or process. (WIP)
 - ii. Queues
 - iii. Blockers
 - iv. Lead Time and Cycle Time
 - v. Throughput
4. Continuous Improvement
 - Use metrics to learn

Comparison with Scrum

- Scrum also uses cards to define work to be done.
 - Story cards can be placed in 3 lanes, product backlog, iteration backlog and completed.
- Scrum has a fixed iteration cycle.
 - This limits the number of stories that are in progress and satisfies the lane limit so there are not too many incomplete stories.
- Scrum has a team structure, with Scrum Master and Product Owner.
 - Kanban does not say anything about how the work is done.
- Kanban does not have a system of estimating effort for each task.
- Both Scrum and Kanban prioritise tasks using the MoSCoW system.
- In Kanban, the highest priority task is moved from one lane to another first.

Kanban Metric: WIP

- Work in **progress** is the total amount of work that is still to be done.
 - The **project backlog**.
- Work in **process** is the total amount of work that is currently being worked on.
 - The **sprint backlog**.
- WIP can refer to both of them.
- In Kanban this is measured in number of tasks, while in Scrum the story points on each card are totalled.

Kanban Metric: Queues

- Tasks in queues have finished one stage of processing and are waiting to go to the next stage.
- They could be waiting because of the lane limit for the next piece of work for this task.
- If queues form then more effort can be expended in the lane causing the queue.
- This concept is less useful for software development because there is basically only one lane where work is going on, the sprint.

Kanban Metric: Blockers

- These are tasks that can't move forward in the process because they are waiting for some external information.
- They can't move forward even if there is space in the next lane.
- In the software development context, stories can be blocked for a number of reasons:
 - Waiting for information from the customer.
 - Waiting for the result of an experiment (spike).
- Blocked items are not normally a problem so long as there are enough unblocked items for the development team to work on.
 - There are always enough stories for the next iteration.

Kanban Metric: Lead and Cycle Time

- Lead time is the time it takes for an item to be delivered to the customer.
 - Measured from initial request to final delivery.
 - In software development it is the project elapsed time.
- Cycle time is the average time that an item stays in one lane.
 - In software development, this is the length of the iteration.

Kanban Metric: Throughput

- The throughput is the average number of items processed in a given time unit.
 - Items per week.
 - In software development it is the average number of story points completed per iteration – the sprint velocity.

Kanban Summary

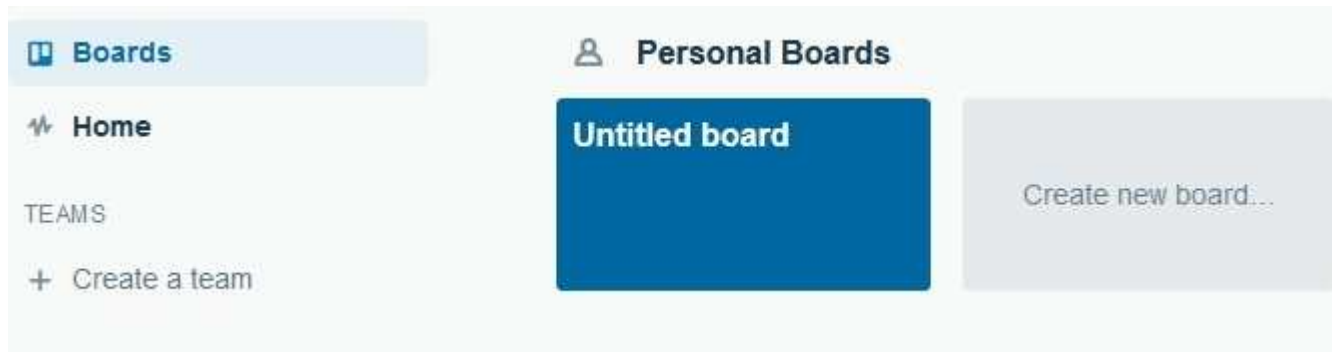
- Kanban is a general purpose agile approach with even less structure than Scrum.
- It is often adapted as a way of visualising the progress of stories in Scrum.
 - A Kanban board with story cards pinned to the board.
- It is not normally used on its own to develop software.
- It is good for systems where the priority of a task can change.
- It can be modelled in Trello.

Trello

- Trello is a program that is basically a Kanban board that can be shared between users.
- It has a free basic version and a subscription for more advanced features.

Creating an Account


- Sign up at www.trello.com
 - Choose a username
 - Choose a password.
 - Provide a linked email account.



Creating a Team

- Choose a team name.
- The trello user creating a team is automatically a member.
 - The team administrator
- Add trello users by their trello user name
 - Can also use email address.
- We don't have any boards at the moment.
 - One board per project.
- Business class is the paid version.
 - There are always links encouraging you to upgrade.

The Poets

**The Poets** Private

Edit Team Profile

BoardsMembersSettingsBusiness Class

MEMBERS OF TEAM BOARDS

Team Members (2)


Guests

Team Members (2)

Team members can view and join all Team Visible boards and create new boards in the team.

Filter by name


Invite Team Members

**ronpoet**
@ronpoet

On 0 boards

Normal

Remove...

**rrwpoet**
@rrwpoet

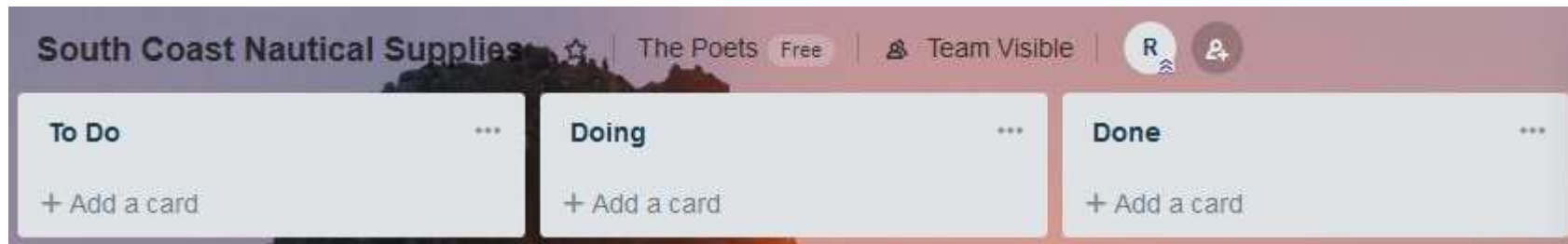
On 0 boards

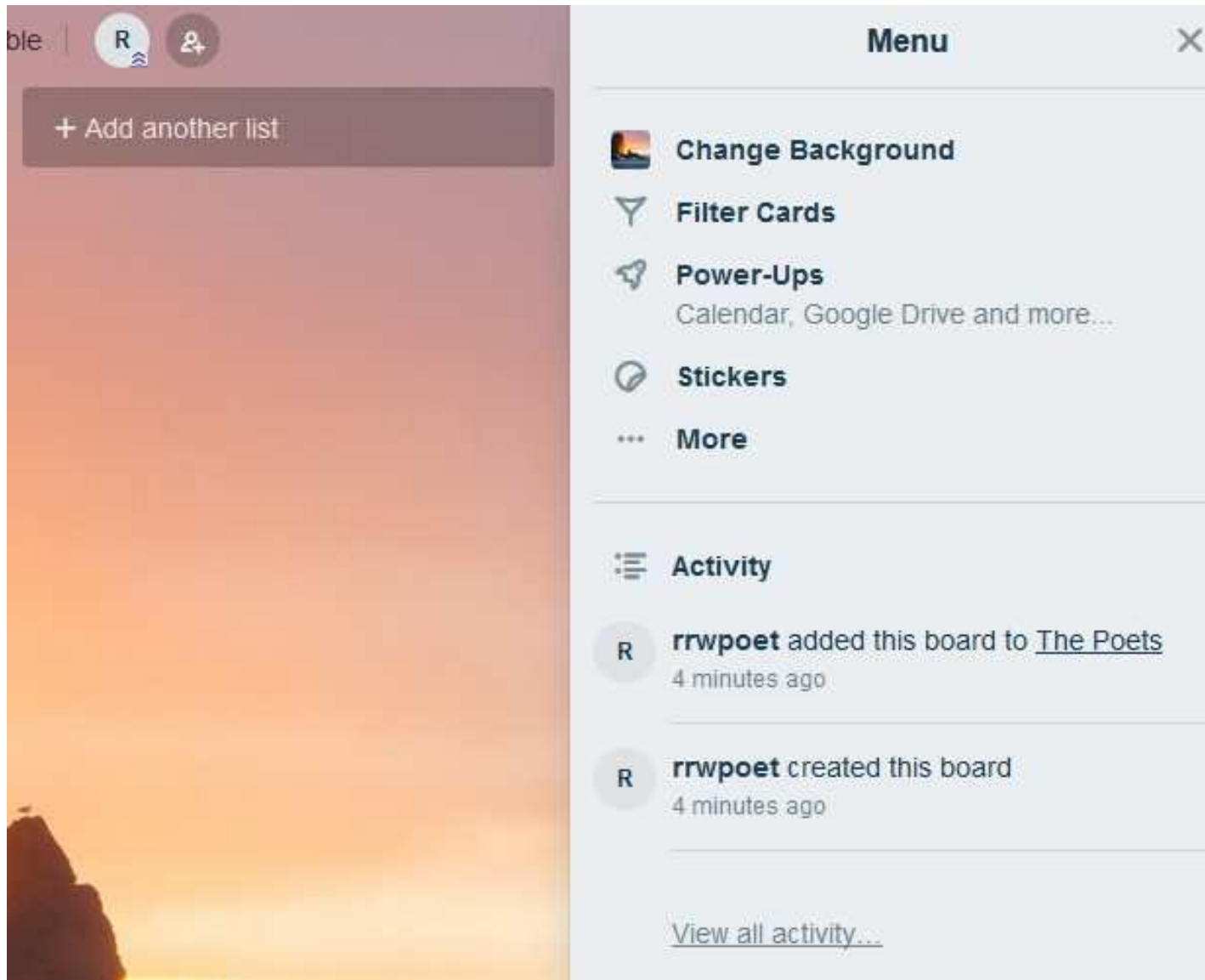
Admin

Leave

Creating a Board

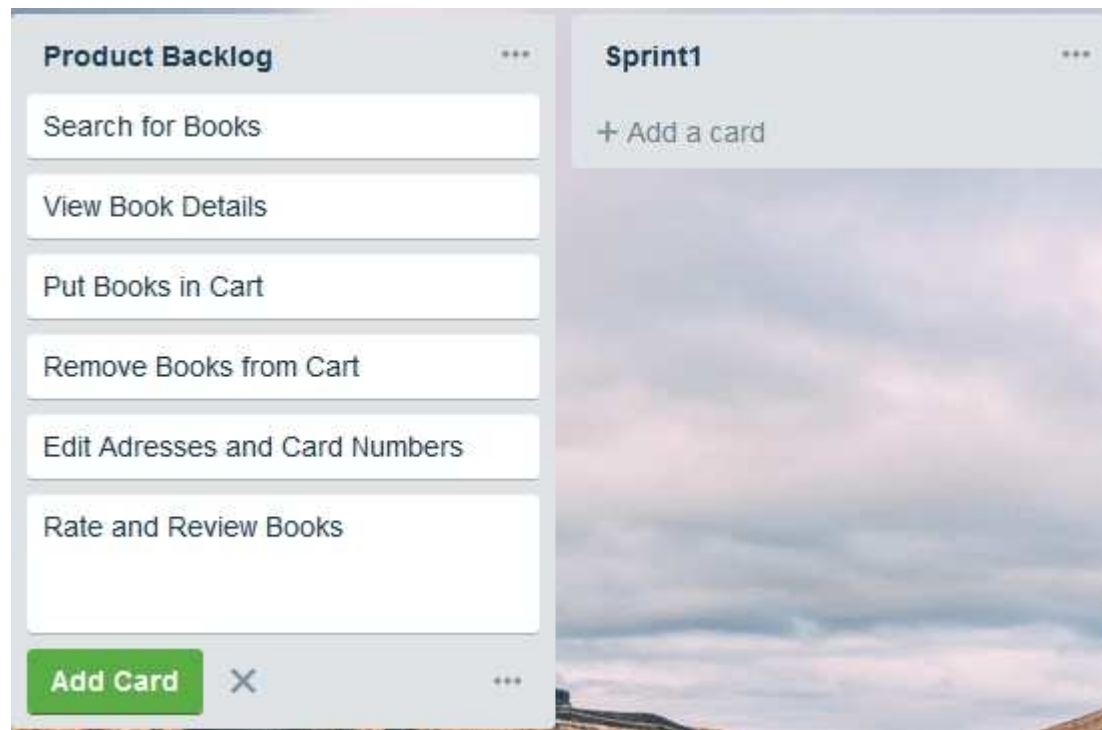
- Use the case study from last week.
- Provide a title and get three standard lanes.
- There is a tab for creating new lanes; Menu; and Scrolling activity tracker.
- A background is provided.
 - It can be changed by choosing from a scrolling window.
 - Paying customers can provide their own background image!





Adding Cards

- It is easy to add card titles.
- Here are the first 6 of Teresa's stories.



Card Details

- I have used the Labels to specify the Priority
 - Red: Must have
 - Orange: Should have
 - Yellow: Could have
 - Green: Would like to have
- I have used the description for the effort, conversations and tests.
- Comments are broadcast as activities on the card and also the board.

Search for Books

in list

Product Backlog

LABELS

+

Description

Edit

1 story point

Use close matching for typos

Test - Matches 1 book

Test - Matches more than one book

Test - No match

Test - Close match

Add Comment

R

Write a comment...

Save

Activity

Show Details

ADD TO CARD

Members

Labels

Checklist

Due Date

Attachment

POWER-UPS

Get Power-Ups

ACTIONS

Move

Copy

Watch

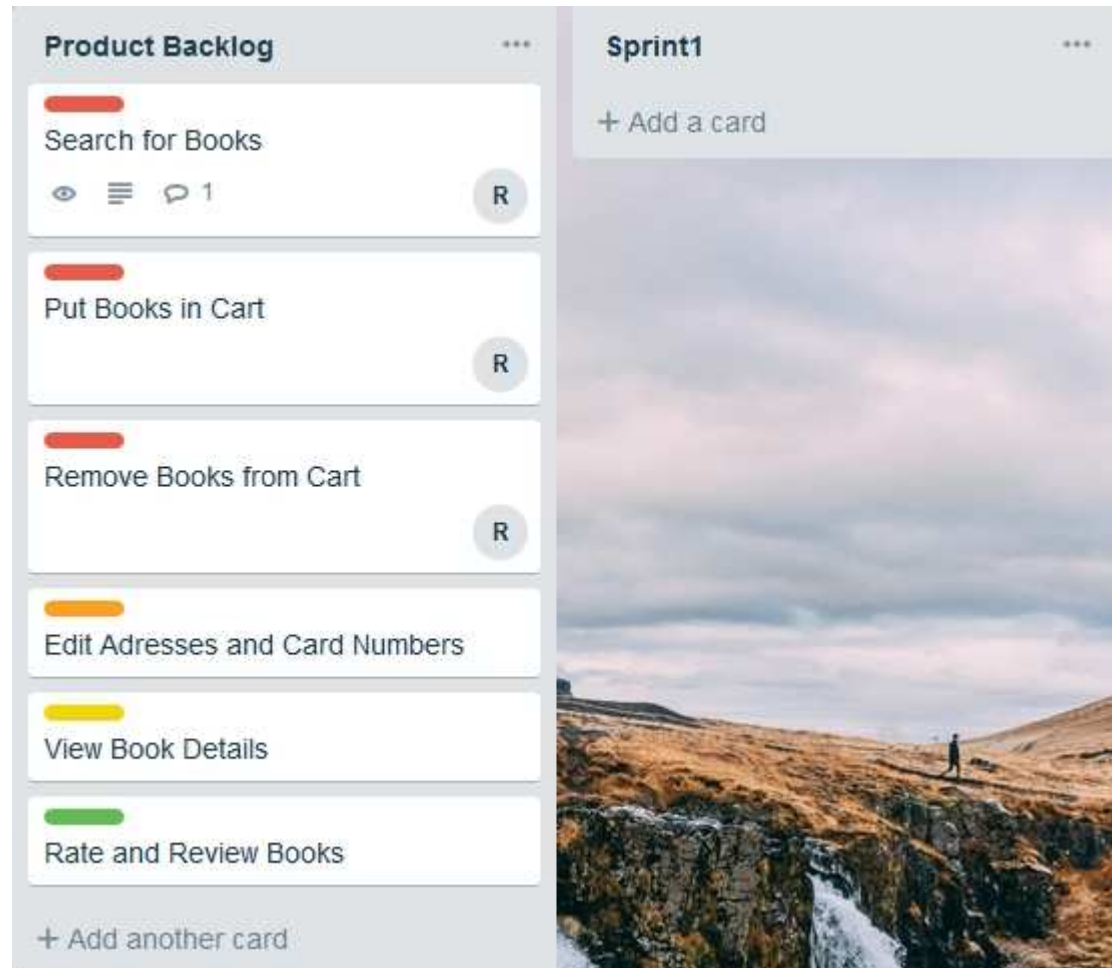
Archive

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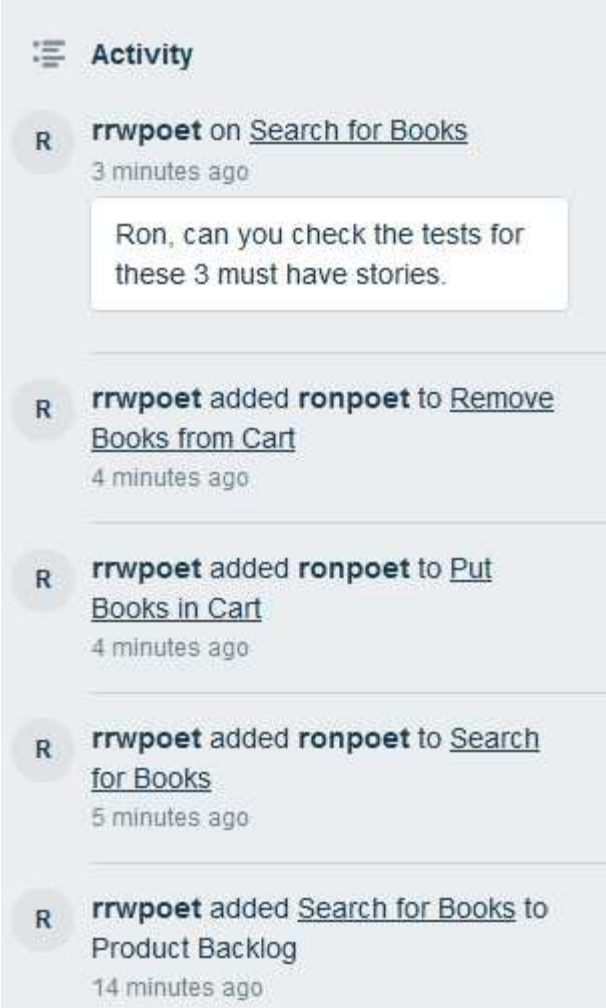
Changing Card Order

- Drag and drop changes the order.



Activities

- I have allocated the red cards to ronpoet and used a comment on one of the cards to record this as an activity.



The screenshot displays a Jira 'Activity' feed with a list of recent actions. Each entry is preceded by a grey circle containing the letter 'R'. The actions are as follows:

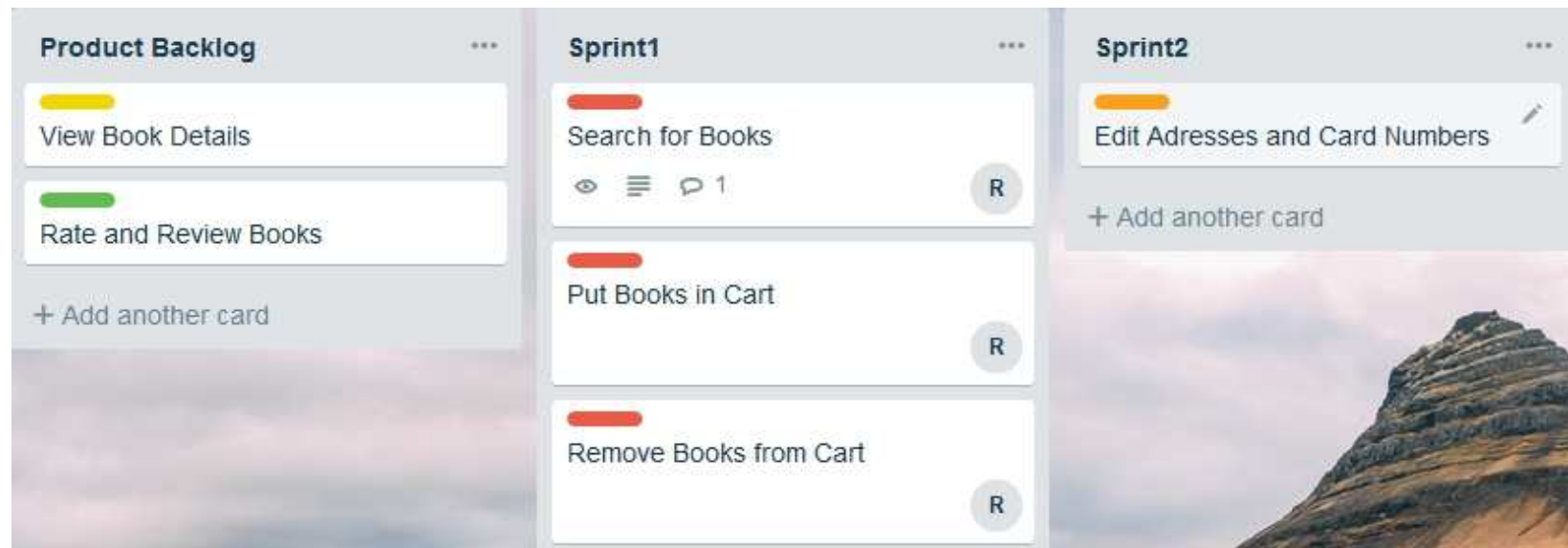
- rrwpoet** on [Search for Books](#)
3 minutes ago
A comment box is visible with the text: "Ron, can you check the tests for these 3 must have stories."
- rrwpoet** added **ronpoet** to [Remove Books from Cart](#)
4 minutes ago
- rrwpoet** added **ronpoet** to [Put Books in Cart](#)
4 minutes ago
- rrwpoet** added **ronpoet** to [Search for Books](#)
5 minutes ago
- rrwpoet** added [Search for Books](#) to Product Backlog
14 minutes ago

Email Notifications

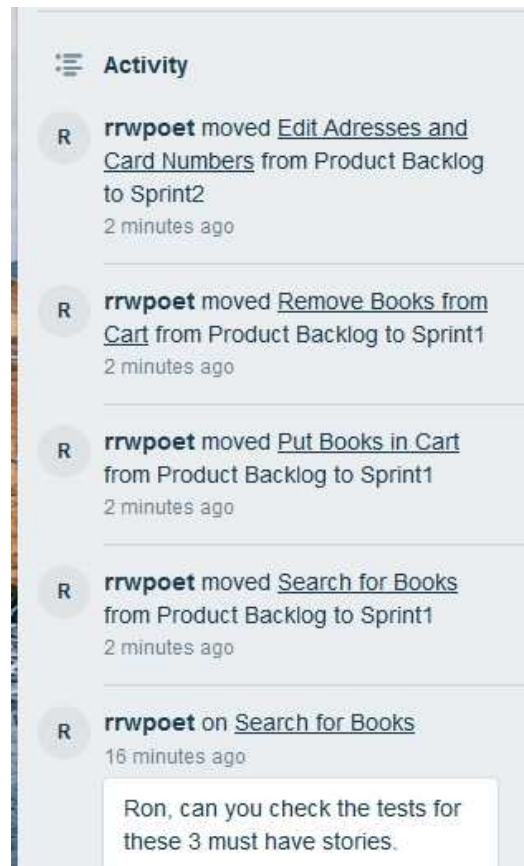
- ronpoet receives these notifications from rrw by email:

| | |
|---------------------------------|-------------------------------------|
| <input type="checkbox"/> Trello | rrwpoet commented on the card Se... |
| <input type="checkbox"/> Trello | 3 new notifications on South Coa... |
| <input type="checkbox"/> Trello | rrwpoet archived the card Search... |
| <input type="checkbox"/> Trello | 4 new notifications on South Coa... |
| <input type="checkbox"/> Trello | rrwpoet added you to the team Th... |

Changing Lanes: Drag and Drop



Activity Records This



The screenshot displays a Jira 'Activity' feed. At the top, there is a header with a hamburger menu icon and the word 'Activity'. Below this, five activity items are listed, each preceded by a circular icon containing the letter 'R'. Each item describes a user action on a specific issue, including the issue title and the time elapsed since the action.

- rrwpoet** moved Edit Adresses and Card Numbers from Product Backlog to Sprint2
2 minutes ago
- rrwpoet** moved Remove Books from Cart from Product Backlog to Sprint1
2 minutes ago
- rrwpoet** moved Put Books in Cart from Product Backlog to Sprint1
2 minutes ago
- rrwpoet** moved Search for Books from Product Backlog to Sprint1
2 minutes ago
- rrwpoet** on Search for Books
16 minutes ago

Below the last activity item, there is a comment box containing the text: "Ron, can you check the tests for these 3 must have stories."

Additional Lanes

- A more comprehensive version of the case study would have lanes for:
 - User roles
 - Constraints

Jira

- Jira is a more capable software management tool.
 - It costs money!
- It supports
 - Scrum
 - Kanban
 - ScrumBan: Mixed Scrum and Kanban
 - KanPlan: Mixed Scrum and Kanban
- It is possible to transfer information between Jira and Trello board.
 - They are owned by the same company.
- A common approach is for the software development company to use Jira in house and communicate with their customers using Trello.
 - Customers like free stuff.

Jira Support for Scrum

- Sprint Planning
 - Version management
 - Easy backlog grooming (re-prioritising)
 - Story points estimation
 - A Scrum board with swim lanes.

- A swim lane is a series of activities that a task has to go through.

Track and Manage Sprints and Scrums

- Permissions: delegate permissions and responsibilities to team members.
- Workflows: their states and transitions from one stage to another.
- Release Hub: progress of stories for the next release.

- Scrums are supported by tracking issues over the last 24 hours
 - Between daily standups.

Retrospectives

- Burndown chart
- Velocity chart
- Epic report
 - Tracks progress with epics.
- Version report
- Sprint report
- Cumulative flow diagrams
 - Aggregating the flow of stories through the process.
 - Similar to Kanban
- Release burndown.

Jira Support for Kanban

- Story cards
- Work in process limits to control the number of stories being worked on at any given time.
- Swim lanes and columns
 - To Do, In Progress, Done
 - Epics
 - Team members
 - Projects
- Workflows.

Mixed Methodologies

- Scrumban
 - Fixed length sprints (Scrum)
 - Roles (Scrum)
 - WIP limits (Kanban)
 - Cycle time (Kanban)

- Kanplan
 - Kanban
 - Backlogs.

Questions

1. What is Kanban and what can it do?
2. How does Kanban compare with Scrum?
3. What is Trello and what can it do?
4. How does Trello compare with Scrum?
5. What is Jira and what does it do?
6. What are Scrumban and Kanplan?

Summary

➤ Kanban

- A pinboard with index cards.
- There are lanes for different processes.
- In Scrum there would be the product backlog and iterations.
- There are metrics to decide how well the process is working. This identifies problems.
- Lanes have limits, restricting the number of incomplete tasks on the go.

Summary (2)

- Trello
 - An electronic Kanban board.
 - Create an account, a team and a board (one per project)
 - Add cards to represent stories.
 - Team members are notified of changes by email.
- Jira
 - A more capable tool than Trello, but it costs money.
 - Supports Scrum with backlogs and story point estimation.
 - Tracks progress with burndown charts are metrics on the efficiency of the process.
- Scrumban and Kanplan
 - A mixture of Scrum and Kanplan.