Agile2Learn Scenario

"Interdisciplinary Project for the creation

of a digital tourist guide"

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1 Purpose of the project

The purpose of the project is to create digital tourist guides for two to five destinations
(depending on the number of student teams at the class), with information that will include:

- Points of historical and cultural interest
- Tourist accommodation and catering facilities
- Commercial shops and traditional marketplaces
- Means of public transport, ways of moving map with junction points and travel costs

2 Learning Objectives

In this document, a practical project scenario is provided for those who want to practically apply agile learning at school. The learning objectives are:

- Development of the project vision and project strategy
- Development of the initial set project requirements using user stories
- Development of the core agile values and identification of agile methods and their usability and practicability
- Learn about available tools, ways, and complex solutions for digital collaboration.
- Produce a solution how to organize team collaboration based on the needs, resources available and desired outcomes.
- Learn communication mechanisms in classroom.
- Understand the meaning of agility within the context of teamwork.
- Highlight the distinct roles within agile teams.
- Development of effective decision-making practices that combine as many as possible viewpoints of team members.
- Development of the ability to think creatively.
- Development of solution selling skills

3 Related Learning Outcomes

✓ Select one or more agile methods for application based on the setup of the individual learning setting.
✓ Prepare the implementation of the selected method(s) in the classroom through a creation of a teaching scenario using agile methods.
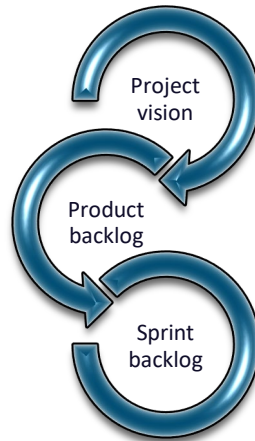✓ Understand the concept of user stories for capturing requirements.

✓ Create the initial product backlog using user stories.

4 Pre-game

✓ After presenting the topic, use **brainstorming technique** to motivate your students and share their ideas in the class about the destinations they wish to work on, using a whiteboard, or paper, or a digital tool suitable for **brainstorming and teamworking.**

✓ Present the project vision and strategy to the students and then develop the initial project plan, as well as the initial set of project requirements (**project inception**). Project requirements should have the form of "user stories"

✓ From the teams and set clear goals for each team. Secondly, create a product backlog (**product backlog - agile artifacts**), by using user stories. You can use the **Trello tool** to create the **product backlog** Since Trello tool is basically a general purpose collaboration tool, the corresponding Trello template should be used. Invite students to it so that they can access the collaboration environment and take over tasks. The organization of the board should be done in such a way that there is a direct supervision of the pending and completed requirements.

✓ Create 4 basic lists:

- The Product Backlog that contains all the project requirements.
- The Sprint Backlog which contains the requirements included in the current sprint.
- The In Progress list which includes the Sprint requirements whose work is in progress.
- The Complete or Done list which contains the sprint requirements that have been completed.

Duration: 2-3 hours

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Picture 1: The steps of the project

Product backlog example

ID	AS A …	I WANT TO …	SO THAT …	PRIORITY	SPRINT
	PRODUCT BACKLOG REPORT				
1	Trip organizer	List hotels	I can suggest the best of them to visitors	High	1
2	Visitor	Find points of historical interest	I can visit them	Medium	2
3	Visitor	Find points of cultural interest	I can participate in cultural events	Medium	2
4	Trip organizer	List Tourist accommodation and catering facilities	I can help visitors make their choices	Medium	1
5	Visitor	Find means of public transport and ways of moving map with junction points	I can move around economically and without wasting time	High	1
6	Trip organizer	List commercial shops and traditional market places	I can protect visitors from making the wrong purchases	Low	3
				Medium	0
				Medium	0

Picture 2: Initial Product Backlog with user stories for the tourist guide

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- The acceptance criteria is a list of conditions that must be met in order for a User Story to be accepted as completed. They are set by the teacher at the beginning of the project. They reflect the requirements set by the teacher for students during the sprints. At the end of each sprint, the students´ team must demonstrate the relevant knowledge that accumulated during the sprint.
- Every day the team should do a "Daily Scrum Meeting", where for each member of the Scrum team will report what they have done, what they are doing, what they will do during the day (their obligations) and the problems they faced.

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- Sprint Planning is done prior commencement of each Sprint, Sprint Review is done at the end of the Sprint where the product owner (teacher) evaluates the work done and Sprint Retrospective that is done at the end of the Sprint, reflecting what was done nicely, what went wrong and which work practices can be improved

- In Sprint Planning toy will determine, in cooperation with the students, the topic of the current sprint, the tasks that students should curry out and define the acceptance criteria for the successful completion of the tasks.

- Pull items from the product backlog during the sprint planning session and create the initial sprint backlog. Then delegate ownership to others on their team. That means that each student takes the responsibility to implement one or more sprint backlog items.

- The student team should store all information in one shared space, usually using a collaboration tools (e.g., Trello) in order to streamline communication and create one central source of information.

- Only items in the Sprint backlog are in scope of each Sprint ensuring team members can focus on the correct tasks.

- While you can update/elaborate user stories the team is working on during the sprint, the backlog itself is protected and it shouldn't be altered during execution.

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5 The game

EduScrum is a variation of the Scrum framework specifically tailored for educational institutions, such as schools and universities. The aim of EduScrum is to provide a flexible and adaptive approach to teaching and learning that can be applied to different subjects and educational levels. It emphasizes the importance of collaboration, continuous improvement, and student-centered teaching and learning.

In EduScrum, teachers and students are considered the development team, while the course objectives and outcomes serve as the product backlog. The teacher takes on the role of the Scrum Master and facilitates the process, while the students are responsible for delivering their learning goals. Regular meetings, such as Sprint Planning, Daily Scrum, Sprint Review, and Sprint Retrospective, provide opportunities for the teacher and students to reflect on their progress, plan their next steps, and identify areas for improvement. The goal of EduScrum is to create a more engaging and dynamic learning environment where students can take ownership of their education and collaborate with their peers to achieve their goals.
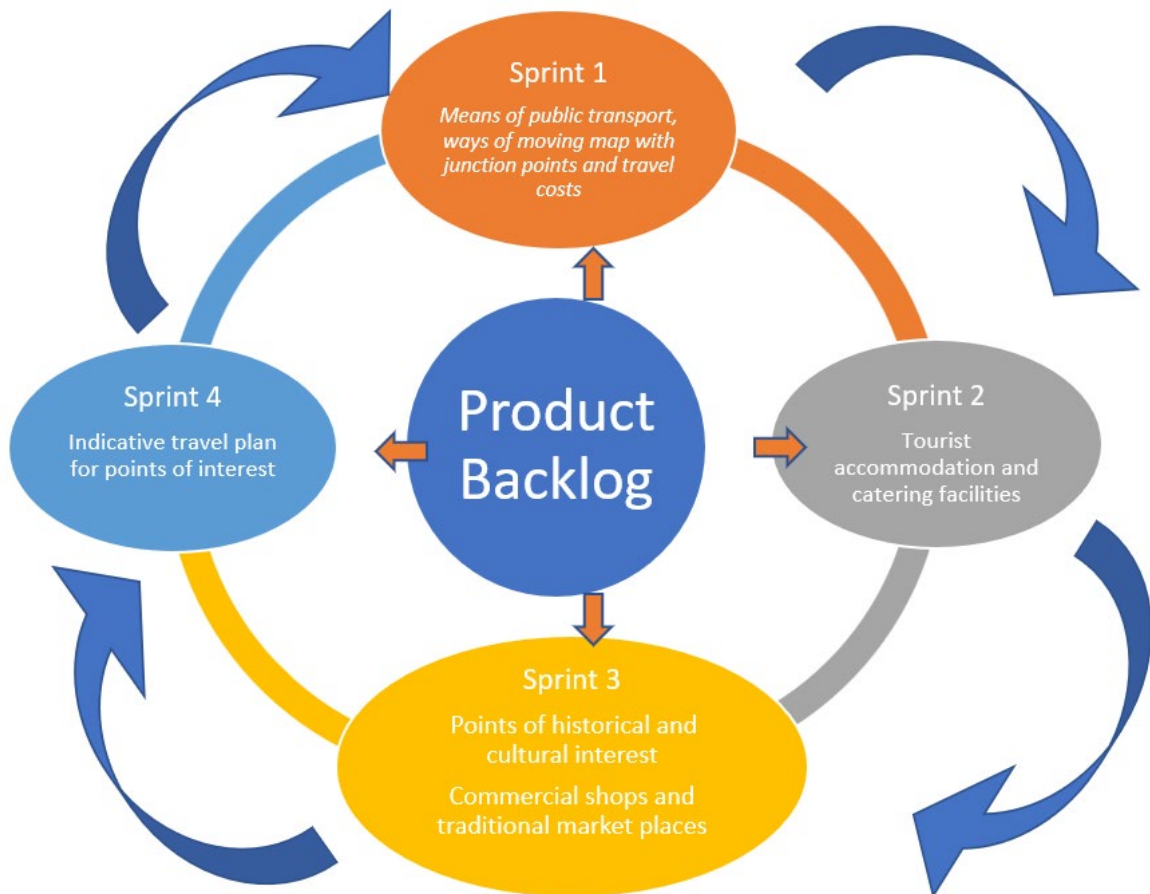
In the Figure below the Scrum process is presented.

Picture 3: Scrum process

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In the proposed educational project, there are four sprints. Each one of them has a specific objective, as it is presented in the Figure below.

Picture 4 : Scrum process including 4 sprints for the tourist guide.

Sprint-1 : Means of public transport, ways of moving map with junction points and travel costs

Duration: 2 weeks

Picture 5: Initial sprint backlog - example for the 1st Sprint

Sprint Review at the end of the 1st Sprint

Duration: 1-2 hours

- Team members discuss what went well during the Sprint, what problems they ran into, and how those problems were solved.
- Every team showcase its work and inspect the overall roadmap for the product (Product Backlog)
- The entire group collaborates on what to do next, so that the Sprint Review provides valuable input to subsequent to Sprint Planning
- Tips from the teacher ahead of the next sprint
- The result of the Sprint Review is a revised Product Backlog that defines the probable Product Backlog items for the next Sprint. The Product Backlog may also be adjusted overall to meet new opportunities.

Sprint Retrospective after the 1st Sprint and before the 2nd Sprint

Duration 1-2 hours

- It's conducted after the sprint is finished, and this means 'really finished', so after the sprint review too.
- Members inspect their ways of working during the last sprint, and decide how they can improve during the next sprint
- The team discusses:
    - What could be improved?
    - What will they commit to improve in the next Sprint?

In order to do that, one of the most common ways to structure a Sprint Retrospective is to have every team member answer the following questions:

- What went well?
- What did not go so well?
- What actions need to be taken to improve?

Sprint Retrospective vs Sprint Review (Difference)

- **Sprint review output:** updated product backlog with the top priority user stories for the development team to work on at the top.
- **Sprint retrospective output**: action list with specific steps to improve team ways of working during the next sprint
- The **sprint review** is about the product, while the **sprint retrospective** is about the team.

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Sprint-2: Tourist accommodation and catering facilities. Commercial shops and traditional marketplaces

Duration: 2 weeks
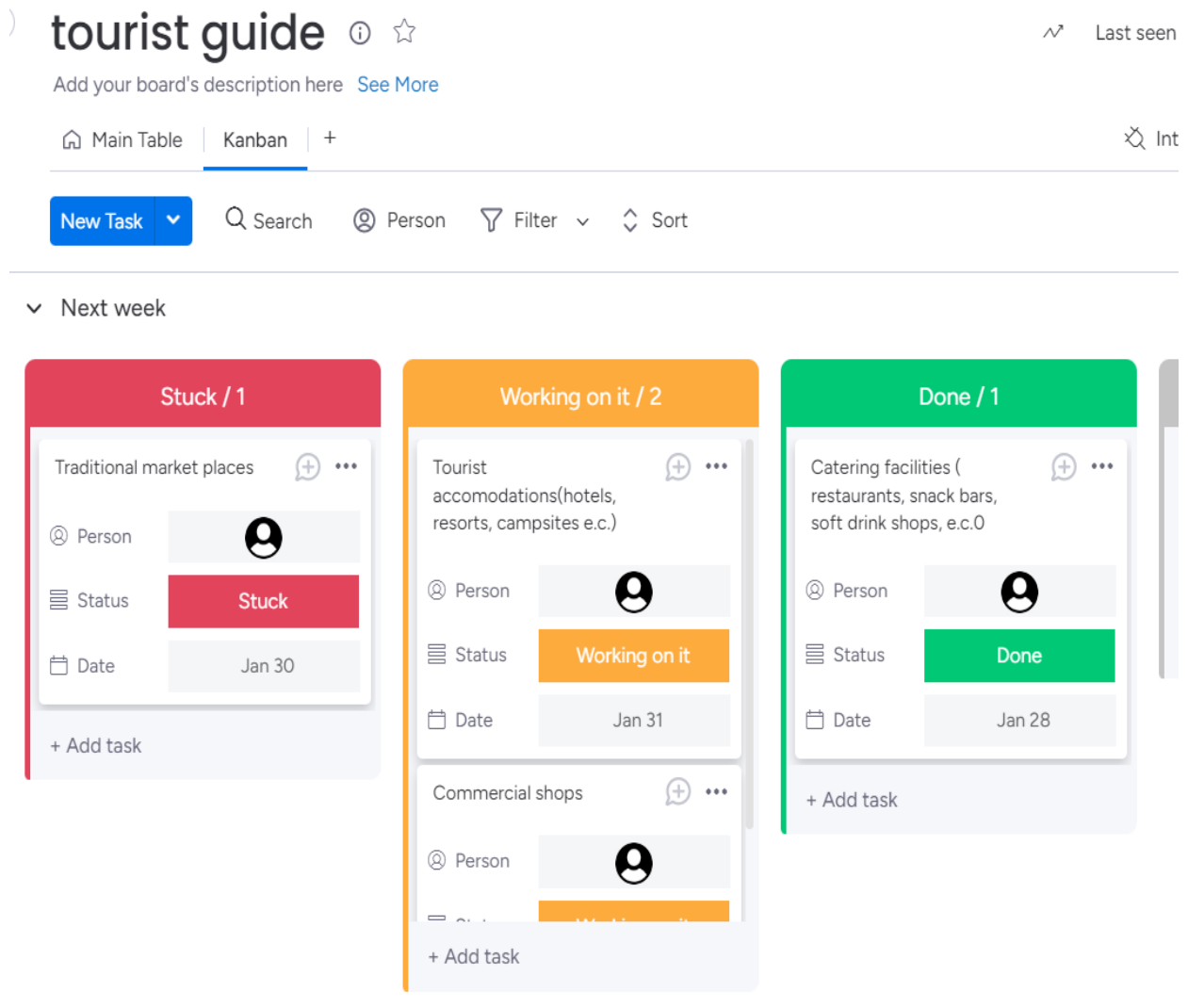
Picture 6: Sprint backlog for the 2nd Sprint - example

Sprint Review at the end of the 2nd Sprint

Duration: 1-2 hours

Sprint Retrospective after the 2nd Sprint and before the 3rd Sprint

Duration 1-2 hours

Sprint-3: Points of historical and cultural interest

Duration: 2 weeks

Picture 7 : Sprint backlog for the 3ʳᵈ Sprint

Sprint Review at the end of the 3rd Sprint

Duration: 1-2 hours

Sprint Retrospective after the 3rd Sprint and before the 4ᵗʰ Sprint

Duration 1-2 hours

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Sprint-4: Indicative travel plan for points of interest

Duration: 2 weeks
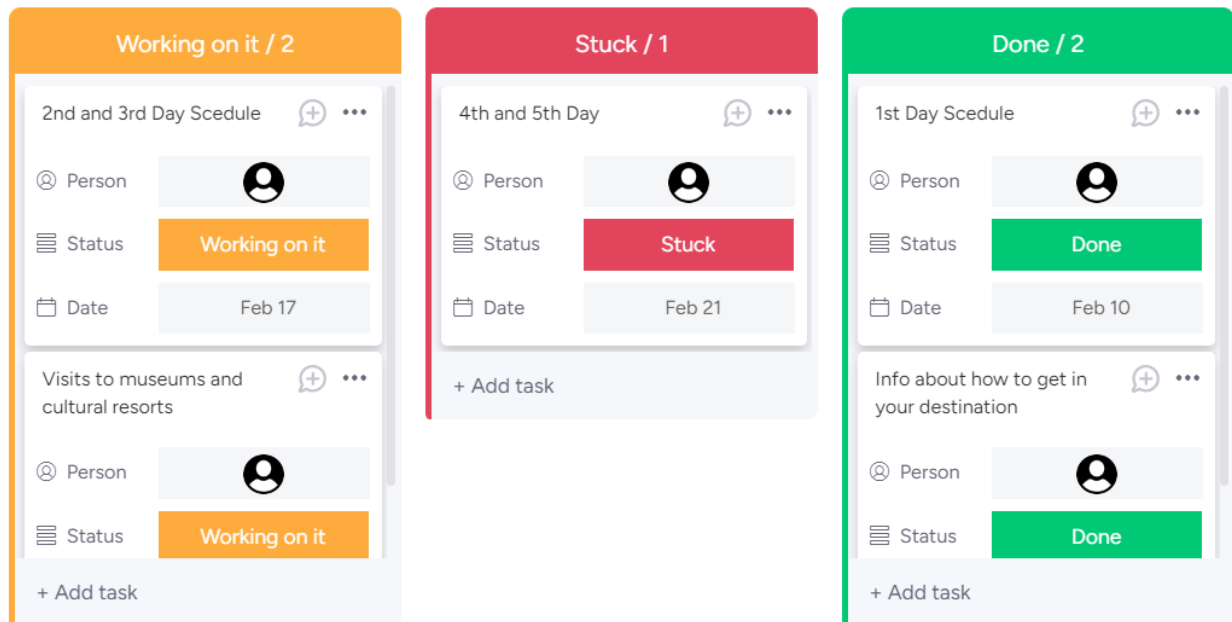
Picture 8: Sprint backlog for the 4th Sprint

6 Post- game

At the end, a presentation of the entire project, and a general review (retrospective):

- What they learned (knowledge related to the subject they dealt with)
- What they learns from the process - collaboration (emphasis on competencies)
- Whether their collaboration improved from Sprint to Sprint
- If not, what was at fault?
- What should have been done?
- What they would like to improve on (competencies)?

The evaluation criteria that we can take into account when applying the agile methods are the following:

- the active engagement
- the successful execution and fulfillment of the objectives
- the ability to solve problems and take initiative.
- the development of social skills (dialogue, communication, collectivity, conflict management, etc.)
- the personal creative expression and integration of each student into the whole transformative learning and changing attitudes
- the evaluation of the results of the project by the students themselves

In the plenary class, the teams complete their assignments. Each team has 10 minutes to present their work. All team members undertake to present a part of their work. At the end of the presentations, the students evaluate both the project as a whole and the level of cooperation between the members of each group.

The project evaluation can be carried out in two stages:

The teacher descriptively evaluates the performance of the students by observation during the tasks based on an evaluation sheet on a five-point scale (1-5) (1. Insufficient, 2. Weak, 3. Average. 4. Good, 5. Very good) . The areas assessed are:

1. understanding concepts – knowledge of trends and sequences (individual assessment)

2. students' critical ability (individual assessment)

3. willingness to work – active participation (individual assessment)

4. taking initiative (individual assessment)

5. cooperation (individual evaluation)

6. social skills (communication, teamwork, conflict management) (individual assessment)

7. the students' behavior (individual evaluation).

8. the originality and innovation of the work (group evaluation)

9. the quality of work (group assessment)

In the first stage, individual skills will be evaluated (1-7) and in the second stage, which will be done during the presentation of the groups' work, the group evaluation will be done (7-8). In this way, the evaluation does not acquire a comparative character, but is based on criteria arising from the learning objectives.

The evaluation of the project, as well as the entire process from the students' side, can be carried out in the form of a discussion after the presentation of the groups' work, thus contributing to the feedback of the whole class.