IO 1+2

Portal & App

Technical Components

The Portal

... serves as an authoring tool to create tasks and paths. Monitoring is included when using the digital classroom (see later), where you can see the progress of your students. Also, the handbook is linked on the portal, giving guidance for educators.
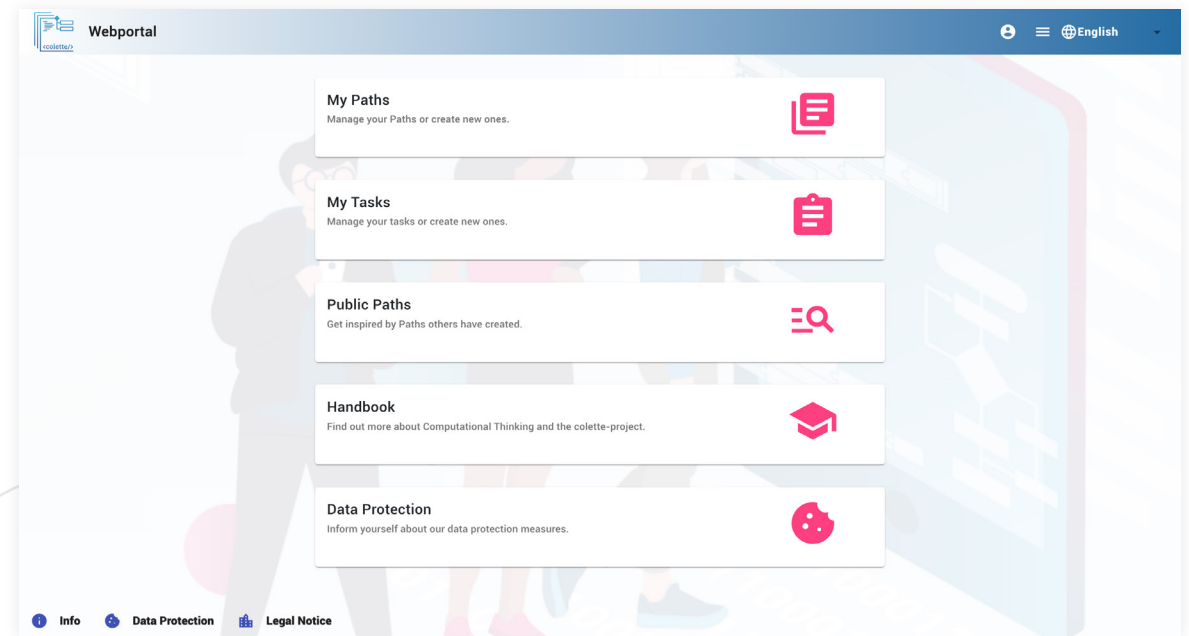
The App

... is used by students to work on the tasks educators have created in the portal. The students can use AR-previews, a task image and hints containing text, image or video content. Using the digital classroom enables students to get live feedback from their teacher and request help using the chat if and when needed.
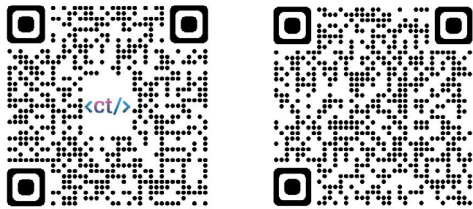
GDPR COMPLIANT

The Portal

The portal serves as an authoring and monitoring tool for teachers, where they can create tasks and paths by modifying task families (blue prints for taks), and provide them to the students via an alphanumeric code. When using the digital classroom feature, teachers can monitor their students' progress and interact with them through the <colette/>-system.

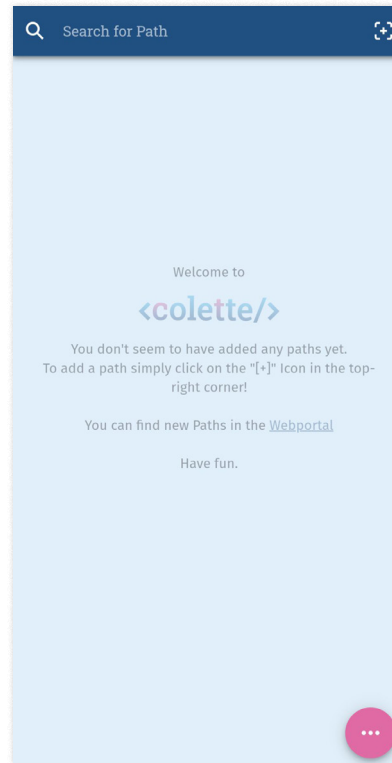🌐 *portal.colette-project.eu*

The App

The app is the students' side of the <colette/>-system. Here, the paths created by the teachers can be added, worked on, and solved in. It features an integrated AR-view, and a chat functionality when using the digital classroom feature.
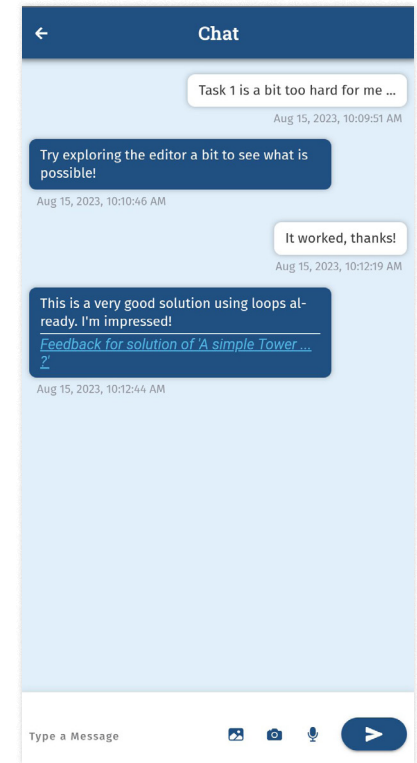
🌐 *https://apps.apple.com/de/app/colette-project/id1611022520*

🌐 *https://play.google.com/store/apps/details?id=de.autentek.colette&gl=US*

– start screen

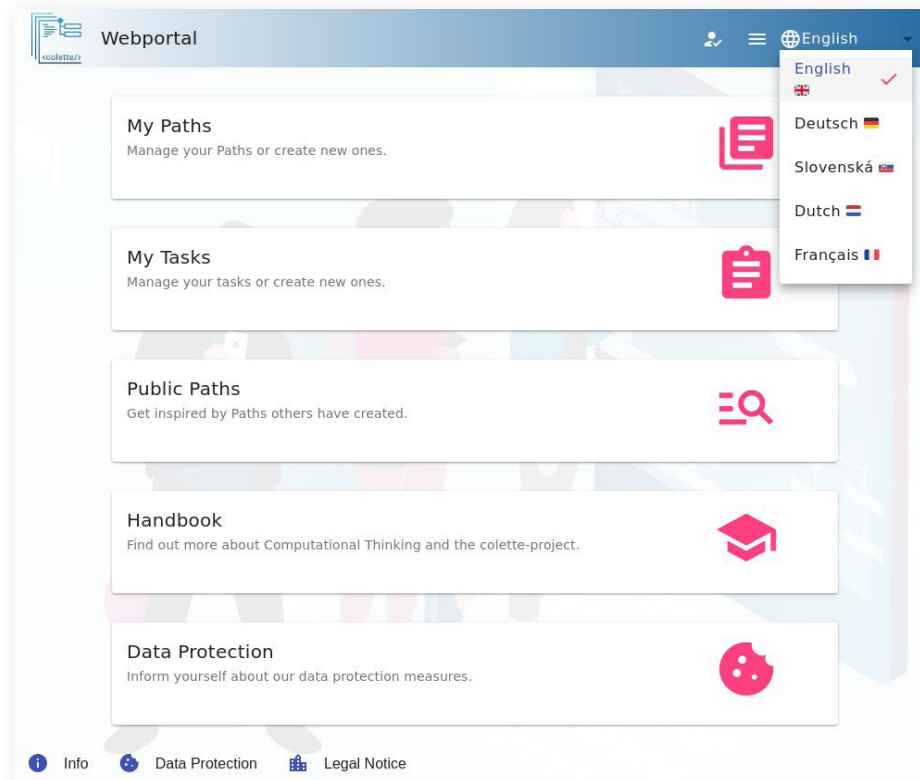– viewing a codes' result in AR

– digital classroom chat functionality
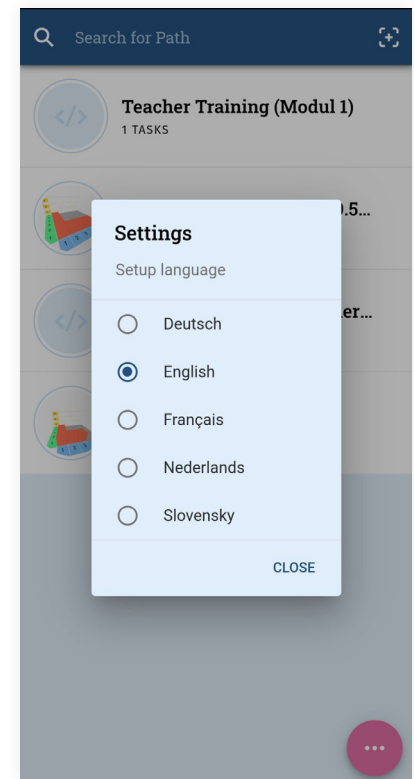
Multilingual Content & Interface

Both the portal and the mobile app are localised in the languages English, German, Slovak, Dutch and French. Switching the languages is easily accessible in the portal and in the app.

A selection of high quality best practice paths and tasks have been provided and are publicly available in all those languages.
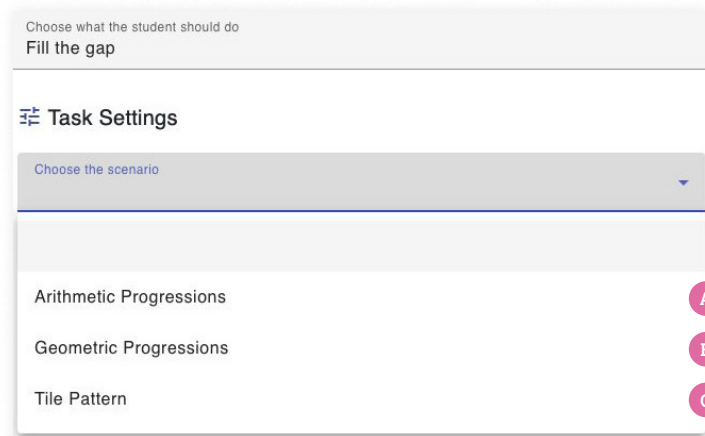
🌐 *Best Practice Paths*

– Switching language in the portal

– Switching language in the app

<colette/>

A ‹colette/› – task

Choose what the student should do
Fill the gap

⛭ Task Settings

Choose the scenario ▾

Arithmetic Progressions **A**

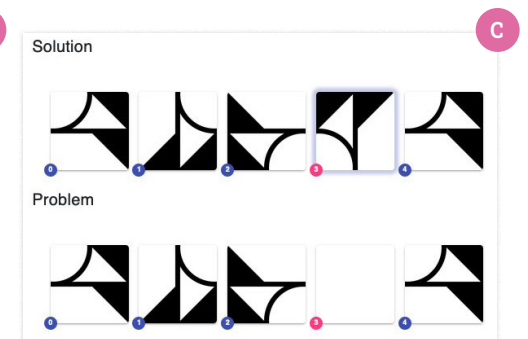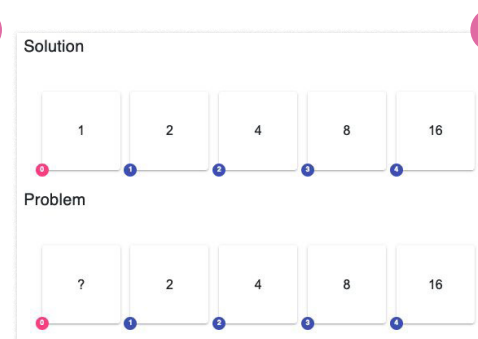Geometric Progressions **B**

Tile Pattern **C**

‹colette/›-tasks are tasks that are derived from a task family. A tak family is a set of tasks that can be easily modified to generate multiple, similar tasks with varying settings.

As an example, we might have a task about patterns (task family), that may be represented by number progressions or tiles.

1. We can choose different settings when creating a task. Here, a "fill the gap" task can be created with different progressions or patterns.

2. The same task family has multiple variations, addressing different skills and difficulties

A

Solution

| 5 | 10 | 15 | 20 | 25 |

Problem

| ? | 10 | 15 | 20 | 25 |

B

Solution

| 1 | 2 | 4 | 8 | 16 |

Problem

| ? | 2 | 4 | 8 | 16 |

C

Solution
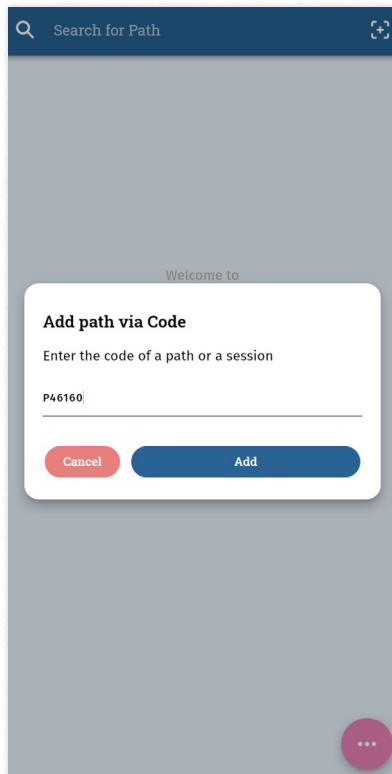
Problem

A ‹colette/› – path

Paths are sequences of tasks!

Combining tasks to a learning path allows educators to guide their students to a certain learning goal.

– The portal view of a path with multiple tasks

‹colette/›

# Focus on Simplicity

– Entering the Code in the app

is designed to facilitate teaching Computational Thinking. Hence, the user interface is designed in an easy-to-understand manner with guidance along the way. Students gain access to a path by entering the path or session codes given by their teachers.

Feel free to try out the path **P40262** to see the „Building Cubes" tasks in action. To let a drone fly use the path **P46348**. For both it is helpful to use a printed **AR-marker**.

For a not coding-based path, try out **P98267** to see the „patterns" tasks in action!
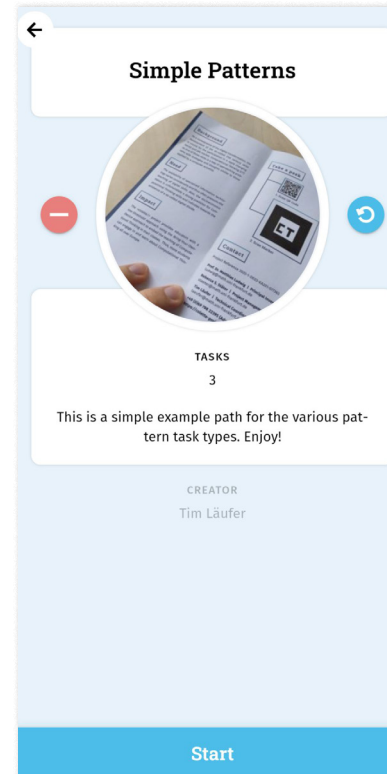
– Viewing a path in the app
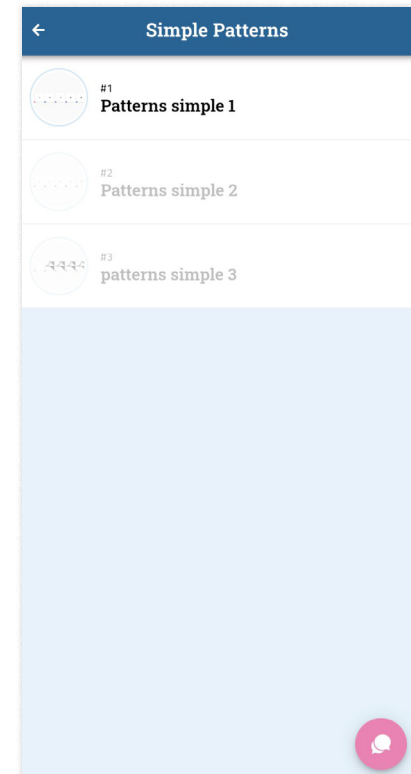
– Viewing the tasks of a path

No coding needed to build coding-based tasks

When creating a coding-based task, the creator does not need to have any coding experience. Thanks to the settings that can be adjusted easily the actual coding happens in the portal.
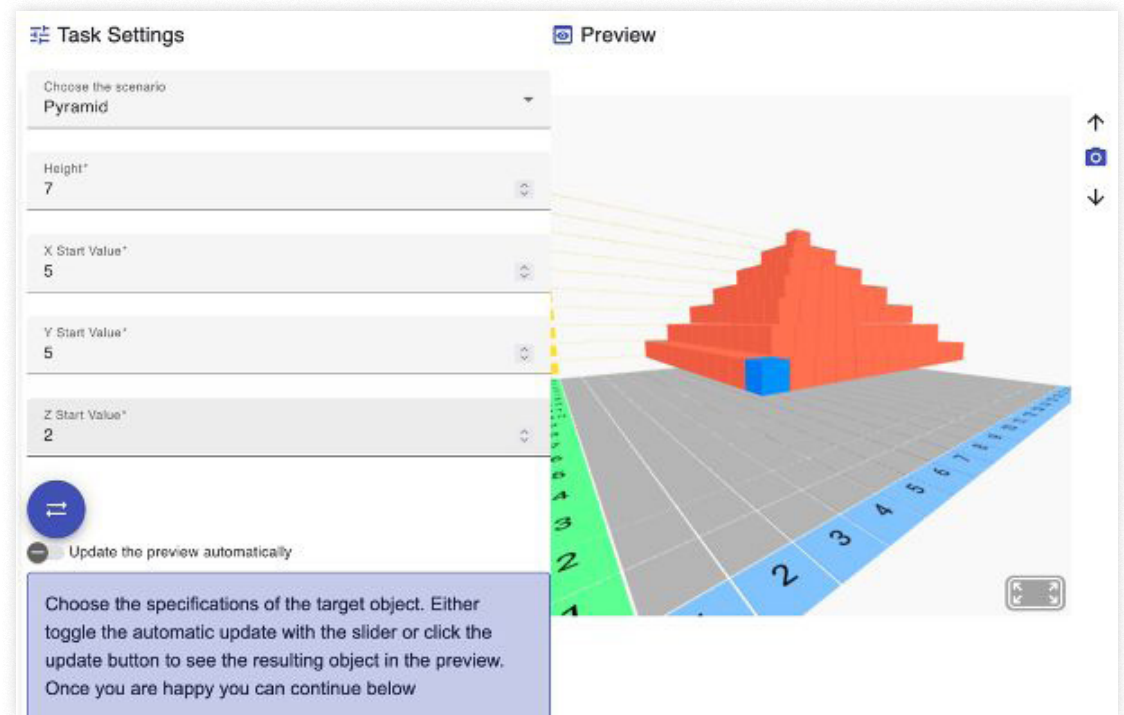
– The settings of this task

– The preview of the result that the students are to create

‹colette/›

Block-based Coding

Using the in-app editor for block-based coding, coding itself is made easier accessible.

Coding blocks can be fetched by dragging them out of the list revealed by clicking on a category in the category bar, which is split into four different categories for easier navigation.

Task image

Category drowdown area

Zoom controls

Coding space

Bin for unnecessary / wrong code

Undo/Redo

Description collapse

Description and hints

**Test code using AR-Preview |
Submit code for validation**

Pattern-based Tasks

Pattern-based tasks come in two variations, number-based and tile-based. Tile-based patterns expect you to fill the highlighted gaps with a tile from the insertable tiles using drag and drop and rotate buttons. In number-based patterns you just fill in the numbers into the gaps of a sequence.

← #1 Patterns simple 1
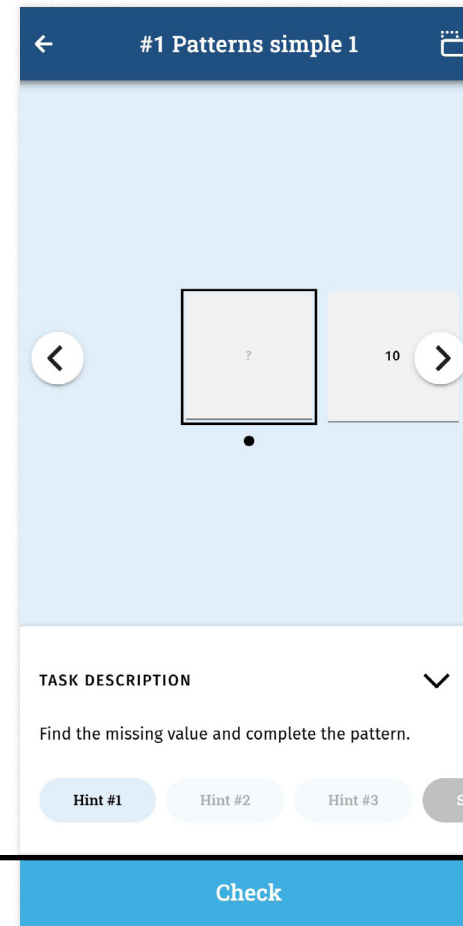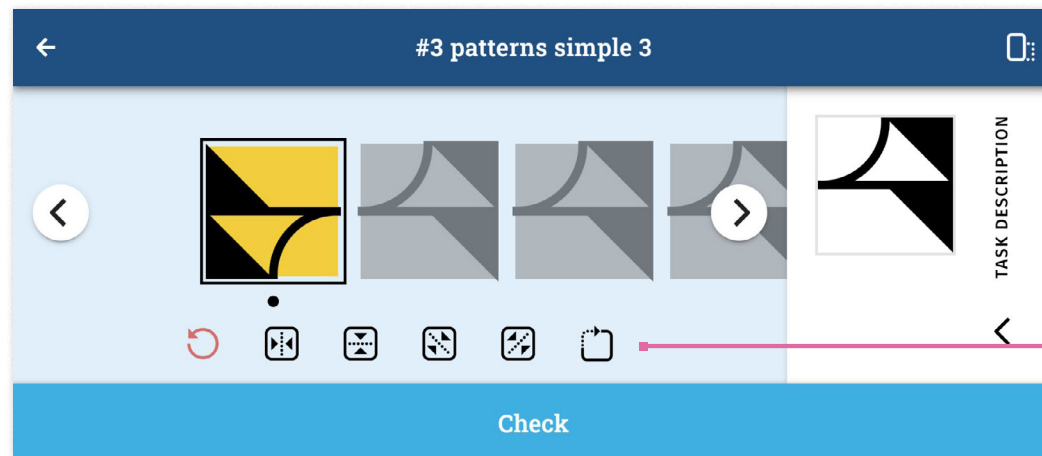
Change Orientation

Editable tile / Preset tile

? 10

TASK DESCRIPTION ⌄

Find the missing value and complete the pattern.

Hint #1   Hint #2   Hint #3   Ski

Check
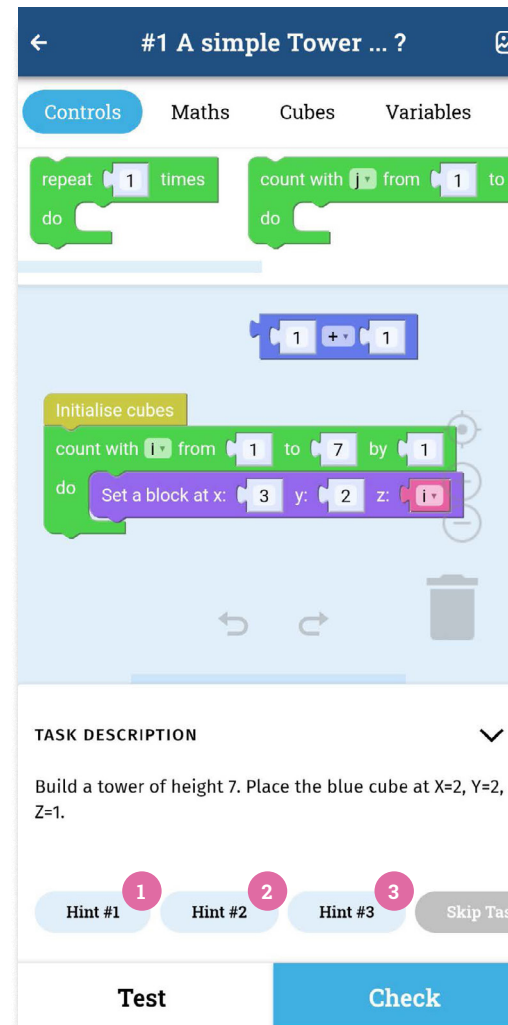
Collapse / Expand description

← #3 patterns simple 3

TASK DESCRIPTION

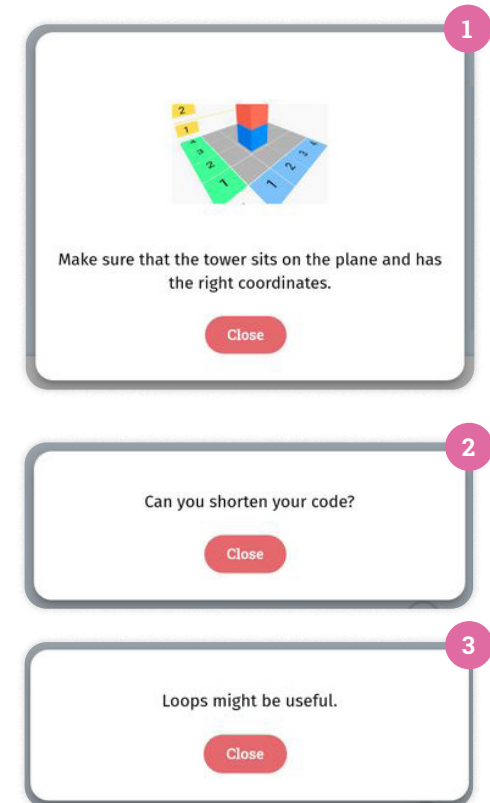Insertable tiles

Transformation Buttons

Check

Tiered Hints & Differentiation

Tiered hints support the students allowing self-directed learning and differentiation. Pictures and videos are supported in hints as well.


Hints open in a pop-up

In-App Feedback through Testing

For coding-based tasks we use a block-based programming language, allowing a low-threshold approach for coding-novices to algorithmic thinking.

Testing ("Test") a code shows the Augmented Reality (AR) view. The built-in AR-view allows students to debug their codes by themselves in a motivating and engaging way.
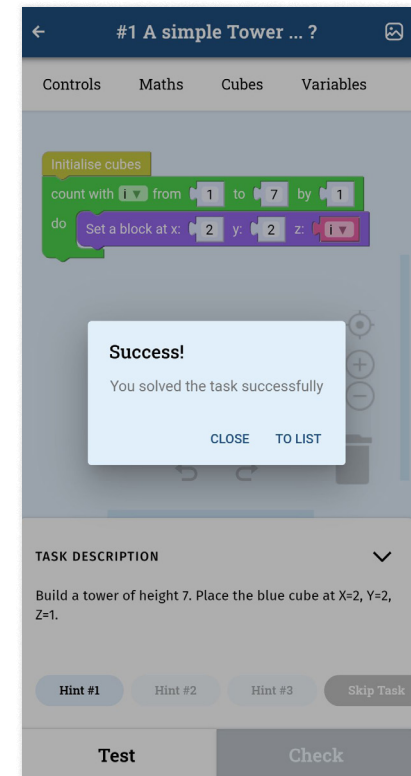
When checking a task ("Check") it submits the code to the portal for validation. The students receive direct feedback.
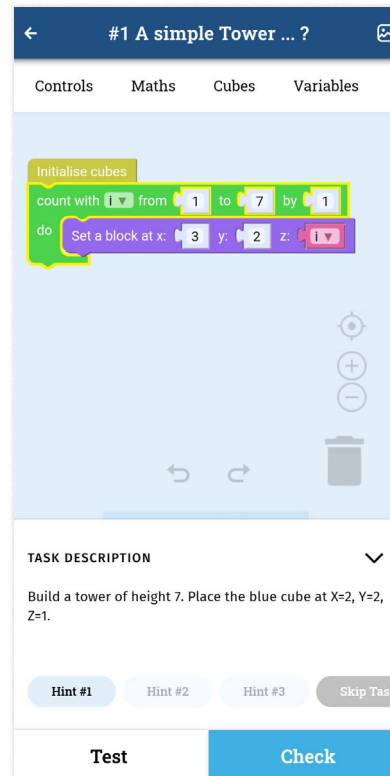
– The editor of a coding-based task
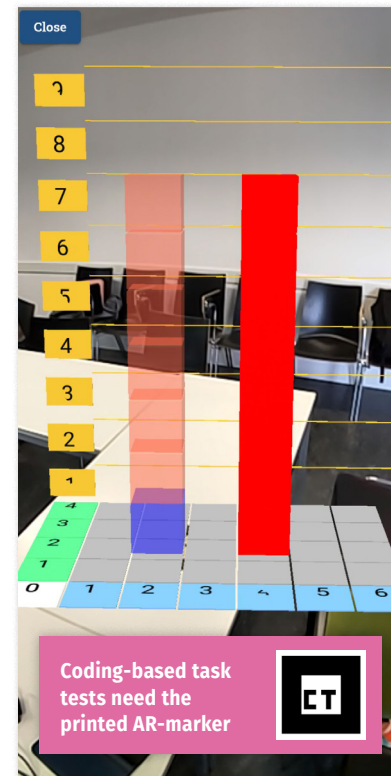
– "Ghost" blocks, show where the blocks should be. Here we see that the code needs to be corrected.

– After fixing the code we can "check" it, and get immediate feedback.

Introduction

The digital classroom feature in <colette/> allows a detailed monitoring of the students' progress over a fixed period of time.

In the overview, all joined students and their current progress, as well as their last event, are presented.
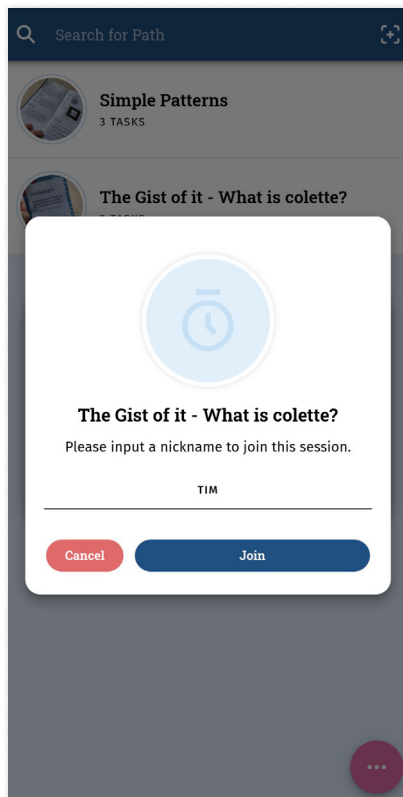
A Enter this code instead of a path code in the app to join the session!

– *The overview of a session in the portal. The colours in the progress indicate the state of the corresponding task. Blue means the task has been started, green means that it has been completed.*

App Side

– When joining a digital classroom session, the student has to enter a name. They can also choose a pseudonym!
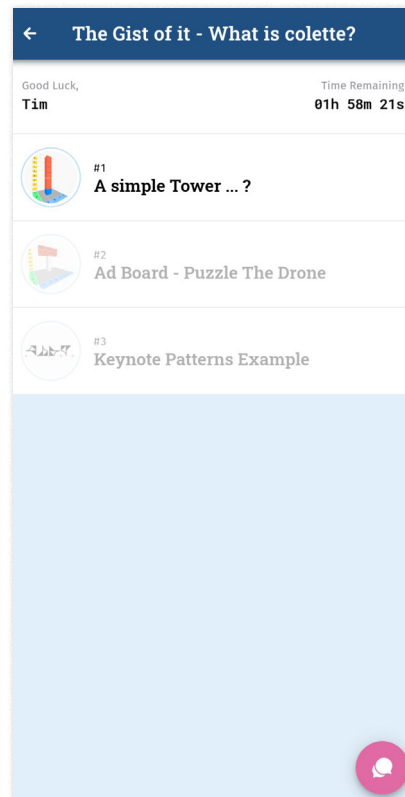

– In the session, the student can see the remaining time and the tasks to work at.

A classroom code (shown in the portal) is entered just like a path code inside the app. The digital classroom enables additional features like the chat, feedback by teachers, and teachers see in real-time what students are working at.
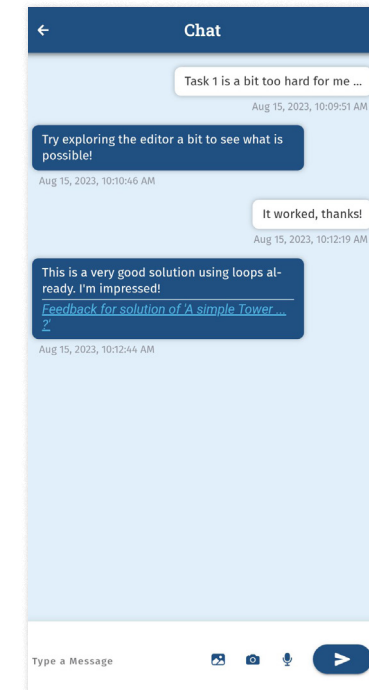
‹colette/›
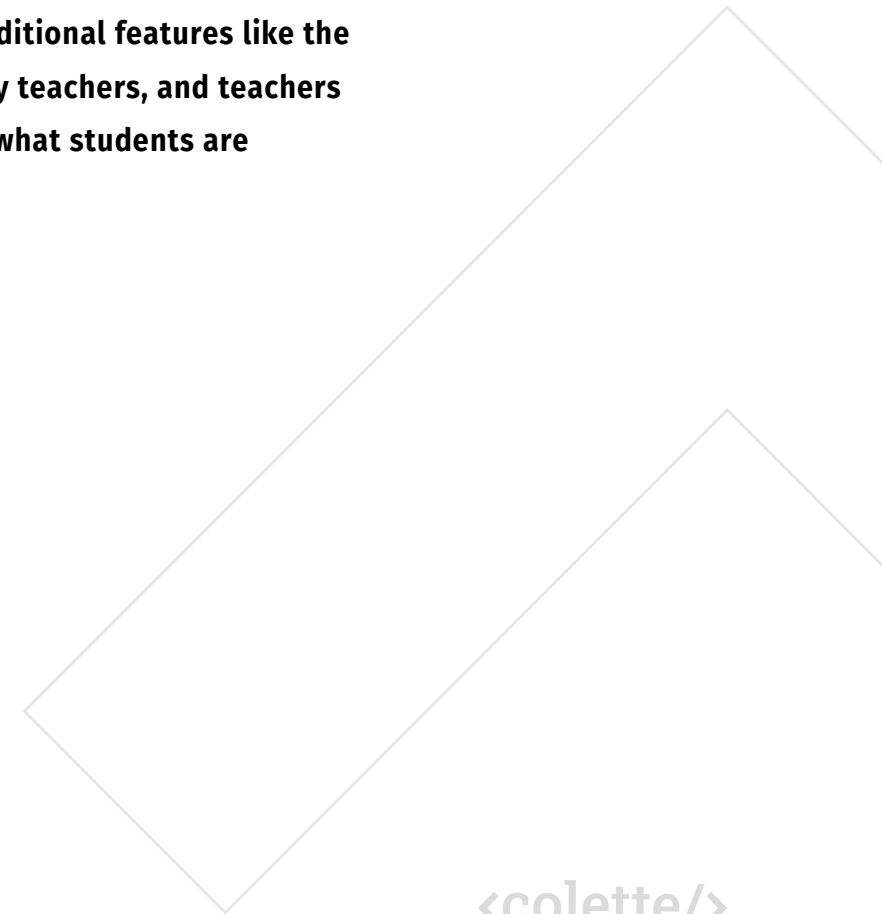
Detailed Progress Monitoring

The portals' view on one student shows the events and the chat, giving valuable information on the students' progress and solving attempts, providing insight to the teacher.
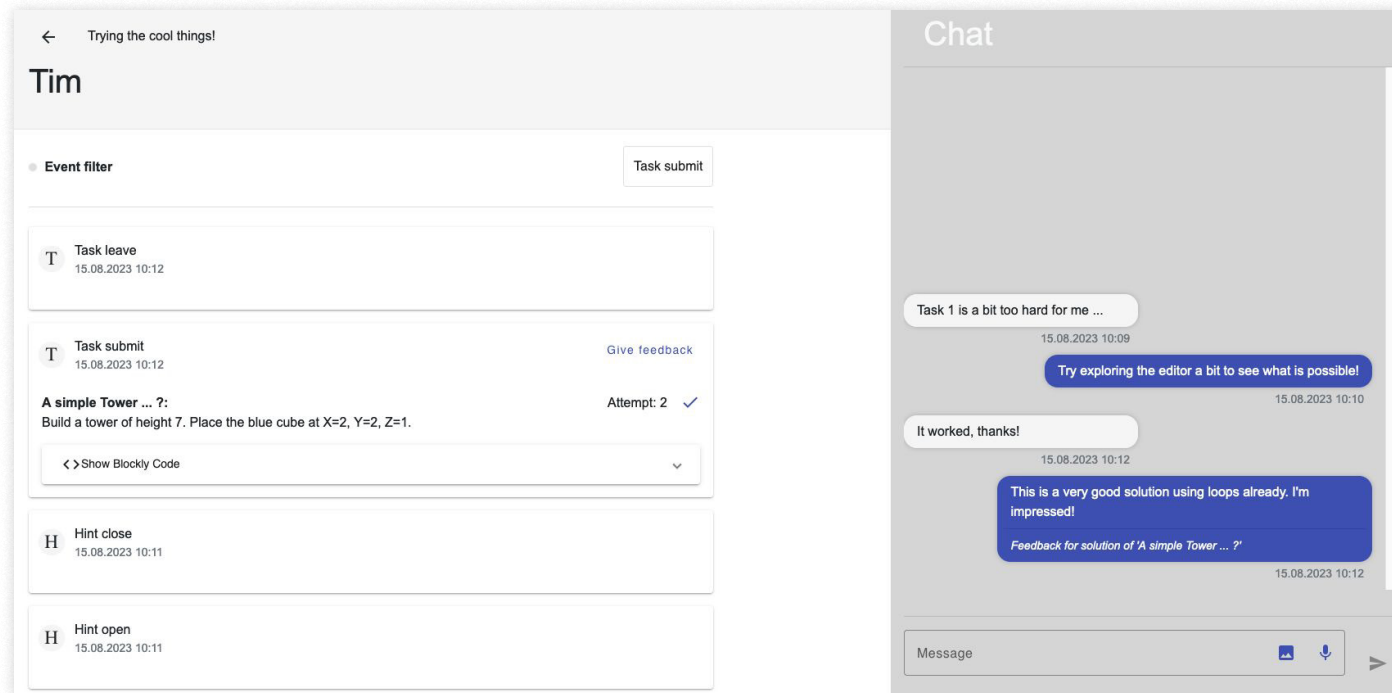
– *The chat allows direct interaction even during remote teaching.*

– *The chat view in the app*

Direct Feedback

The teacher has access to a detailed view of the students' current solution and other students' attempts. Giving immediate feedback is possible and relayed to the student directly.

Inside the app, the student can view the referenced solution, allowing a shared reflection of the solution together with the teacher.
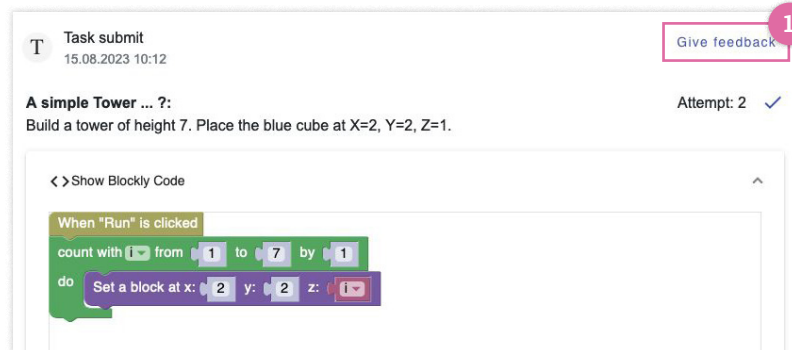
Giving feedback attaches the solutions' data onto the next chat message
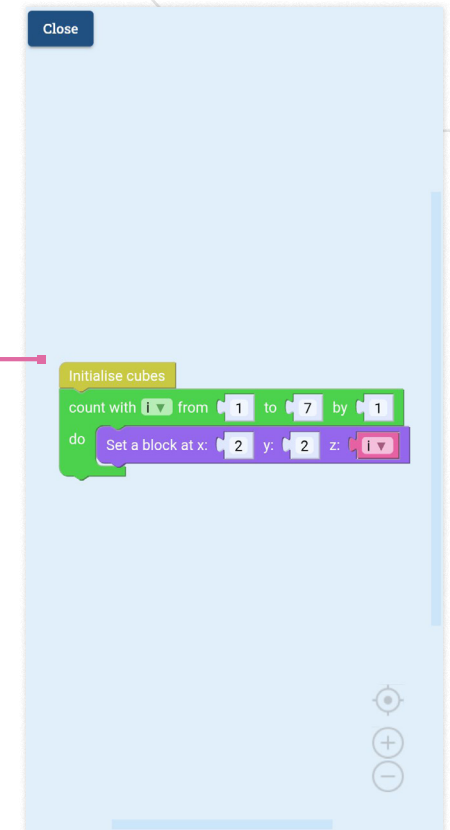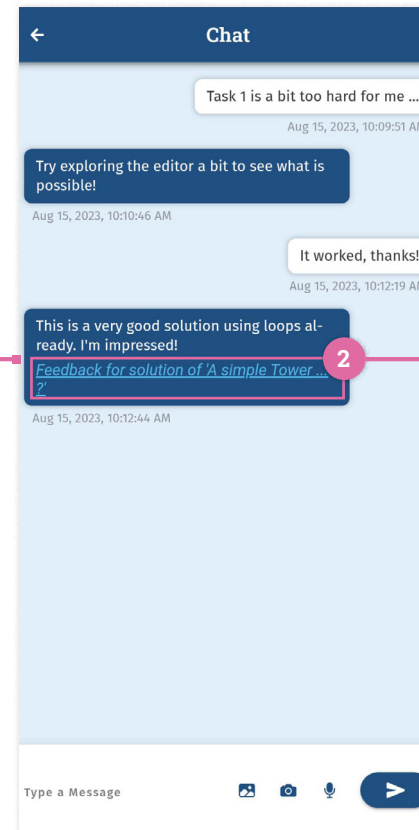
IO 1+2: Portal & App

🌐 *colette-project.eu*   *portal.colette-project.eu*

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of the European Union

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