Guide to interactive applications

# Kodi and the Secret Castle

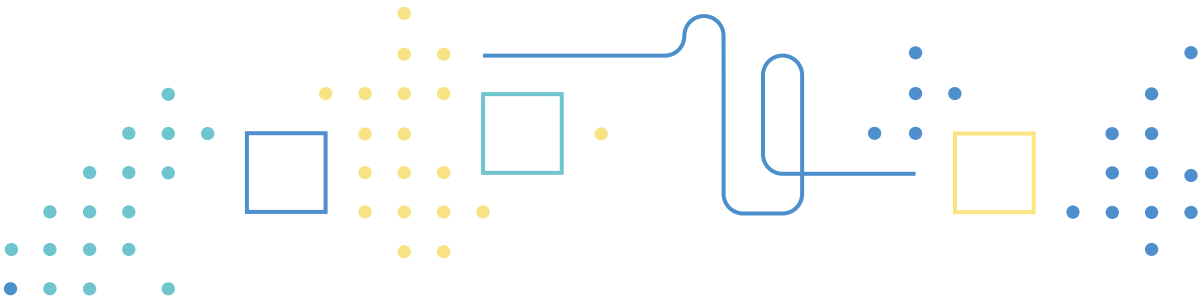
## Algorithmics course on the interactive floor

Designer: LavaVision

**Kodi and the Secret Castle** is Motioncube application package designed for interactive floors, personal computers and interactive whiteboards. The applications are controlled by interactive pens.

Number of applications in the package: 25
Application control method: interactive pens
Design, graphics, software: LavaVision
Package release date:  2021-10-20

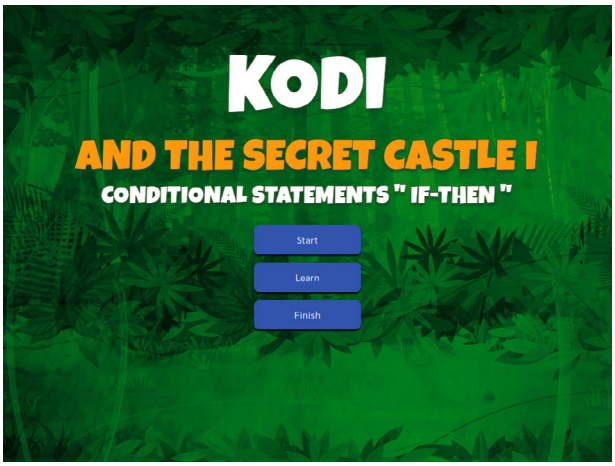
Motioncube is an interactive software that combines motion and fun in the innovative technology of the interactive floor. Motioncube applications are designed for entertainment, education, revalidation, rehabilitation. Dozens of games controlled by motion, touch, interactive pens, robots, as well as for PCs and interactive boards. Along with example lesson or activity plans. Quick and easy selection of games collections with delivery straight to the interactive device. Create the interactive space tailored to your needs with Motioncube.

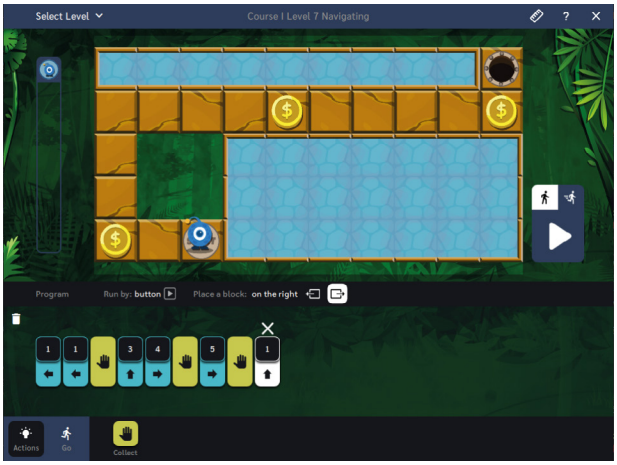


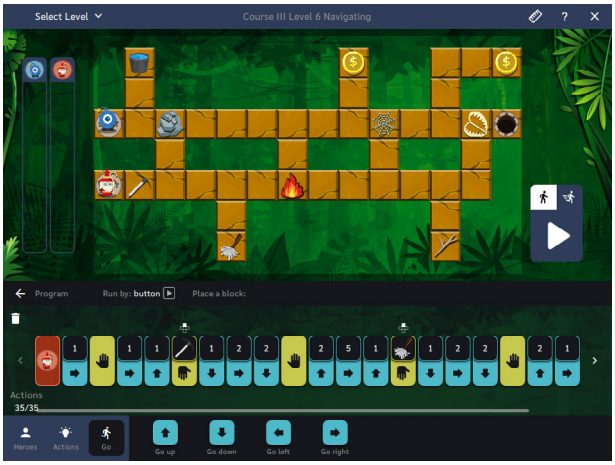
**LavaVision**
www.lavavision.eu
contact@lavavision.eu

# Meet Kodi

In the mysterious castle you can find many strange paths that no one has walked for a long time. Kodi must travel through them in order to get out of the castle and continue his journey home. Use the help of the Gnomes! Advanced algorithmic course with a tutorial and friendly blocks for building algorithms. As you gradually introduce and practice new code-building techniques, you will learn to create complex algorithms. You will also understand concurrent programming. Over 400 adventures and challenges will keep you entertained. A set of challenges in algorithmics with a graded level of difficulty is dedicated to individual and team work, for people aged 10+. It is intended for computer workstations, interactive boards or interactive floors.

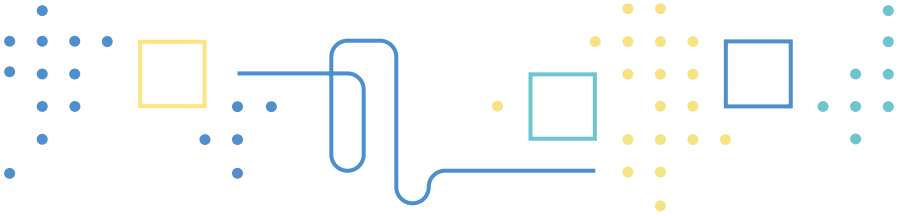


## Who is the course for?

A set of 422 algorithmic challenges with a graded level of difficulty is dedicated to individual and team work, for people aged 10+. It is intended for computer workstations, interactive boards or interactive floors.



## What are the objectives of the course?

Introducing the secrets of algorithmics through play and fun! By programming the movements of the heroes on the boards, performing the necessary actions and building more and more complex structures, players gradually expand their competences in the field of designing sequential as well as concurrent algorithms controlling objects. Mastering these skills will allow them to develop more efficiently in the next stages of education.

## Course structure

This is an advanced course of algorithmics divided into 3 parts (I-basics, II-combinations, III-concurrent movement) consisting of a total of 422 levels arranged in 25 thematic applications.

# Child development support

**The applications included in the course have been developed in cooperation with teachers and psychologists. Interactive games and exercises can perfectly enrich group class scenarios as well as individual exercises.**

Active support of the student's development

- the knowledge and understanding of basic programming constructs;
- the ability to create complex algorithms with nested constructs;
- the ability to control three heroes sequentially;
- the ability to control three heroes concurrently;
- independent and creative problem solving;
- visual perception;
- pattern recognition;
- algorithmic thinking;
- cooperation in a group.

# Fun with the Kodi and the Secret Castle on the Motioncube interactive floor

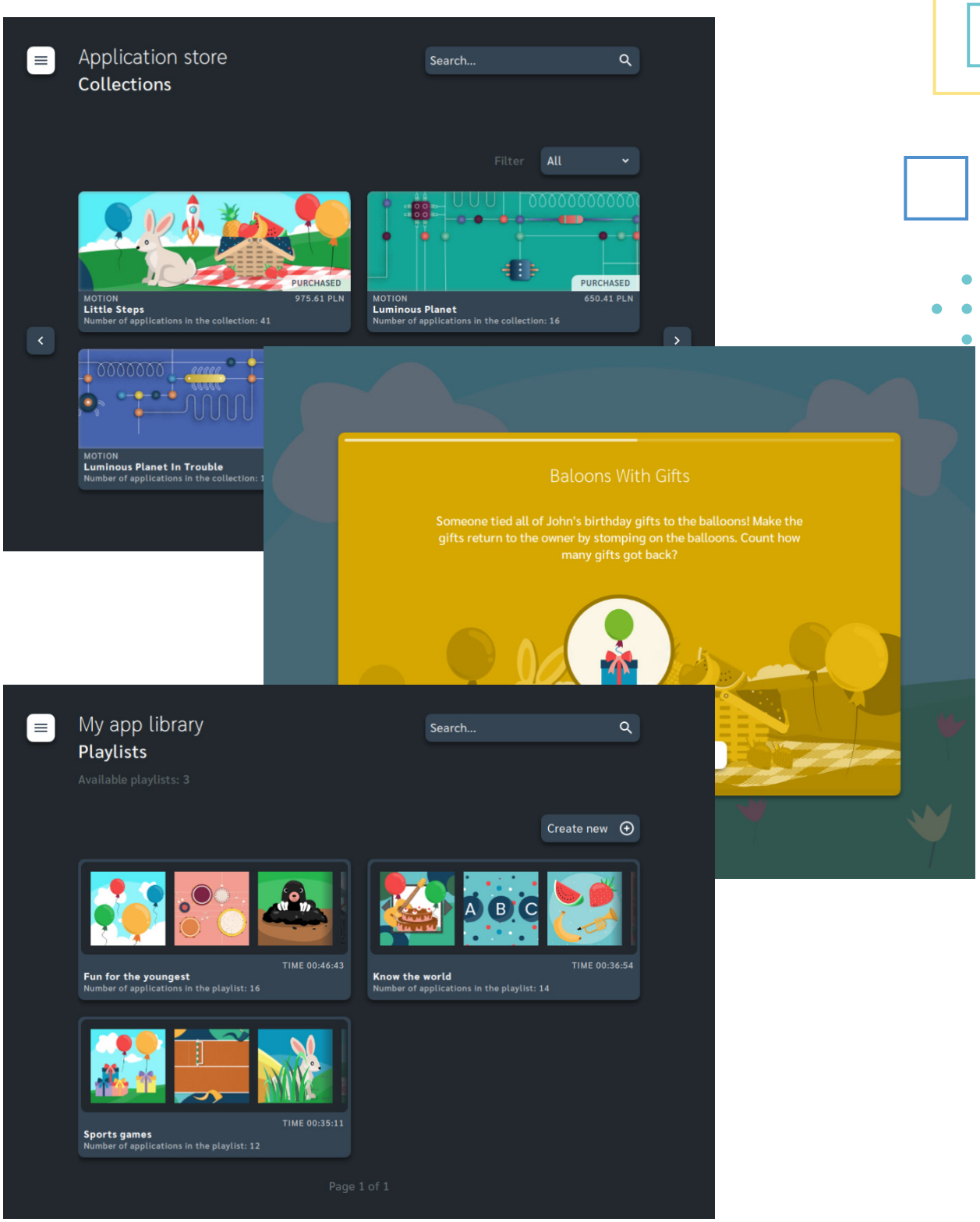
You can run the Kodi and the Secret Castle games on the interactive floor with Motioncube Player available on www.motioncube.io

See video



# Motioncube Player

With Motioncube Player, you can easily manage your App Library, update your app collections, run playlists, and access a wide offer of educational interactive games.



## Why to choose an algorithmic course with Kodi and Friends in the Secret Castle?

- Built-in tutorials for each part of the course;
- „Boards 0” with arranged code, which facilitate the understanding of the introduced issues;
- The logical structure of the course, division into issues and gradual increase in difficulty on the boards;
- Engaging theme of castle scenery, mysterious characters and magical items that save the lives of heroes
- The possibility of constructing a variety of algorithms, from simple to very complex in the form of several programs, even for one board;
- Implementation of content in the field of sequential and concurrent programming;
- Great fun at home and at school!

# Course I - Basic programming concepts

**Navigating**
Your mission is a clear command. You can't go without it! 12 exercises.

**If statements**
You will understand the conditions unconditionally when you meet them on your way! 9 exercises.

**Loops**
Without a loop, it's like without a wheel. Know and use and life will be easier! 22 exercises.

**If statements at loops**
Conditional tasks. Gather what you need and figure out what you will build from the wooden boards! 16 exercises. Conditional tasks. Gather what you need and figure out what you will build from the wooden boards! 16 exercises.

**Nested loops with if statements**
Loop in a loop is not enough? Add conditions and pump up the action! 21 exercises.

**Conditional loops**
You can repeat the action under certain conditions. Be sure to check it out! 11 exercises.


**Variables**
Change the variables into what you want. Assign one or five, and then code run! 15 exercises..


**Functions**
Without functions, it's like headless. You have to be able to use it! 24 exercises.

# Course II - Development of algorithm

**Navigating**
There are so many twists and turns, and there are still new actions to be taken! Guide Kodi carefully! 12 exercises.

**If-Else statements**
One hero is not enough to meet all the conditions. Spread the conditions out! 21 exercises.

**Loops**
Check what you can do with the loop and don't get cornered! 6 exercises.

**If-Else statements at loops**
The conditions must be met to perform the action. Be smart and do it in a loop! 16 exercises.

**Nested loops**
Spin Kodi all the way with a loop in a loop. 8 exercises.

**Conditional loops**
The loop and the condition are ready for the mission. Ready to go on? 12 exercises.


**Variables**
You can do quick value changes in a loop. Let's try! 32 exercises.


**Functions**
Figure out the function in all possible ways. It will pay off! 35 exercise.

# Course III - Complex algorithms and concurrent programming

**Navigating**
The crazy escape continues, so teleport. Use new actions and characters. 12 exercises.

**If statements**
Control two heroes, but set a few conditions for them! 11 excercises.

**Loops**
Ah, those looped heroes! And what do you need this bulb for? 11 exercises.

**If statements at loops**
Program simultaneously with two or even three heroes. Harness the power of loops and conditional statements. 10 exercises

**Nested loops**
Put your heroes in loops. Take courage! 10 exercises.

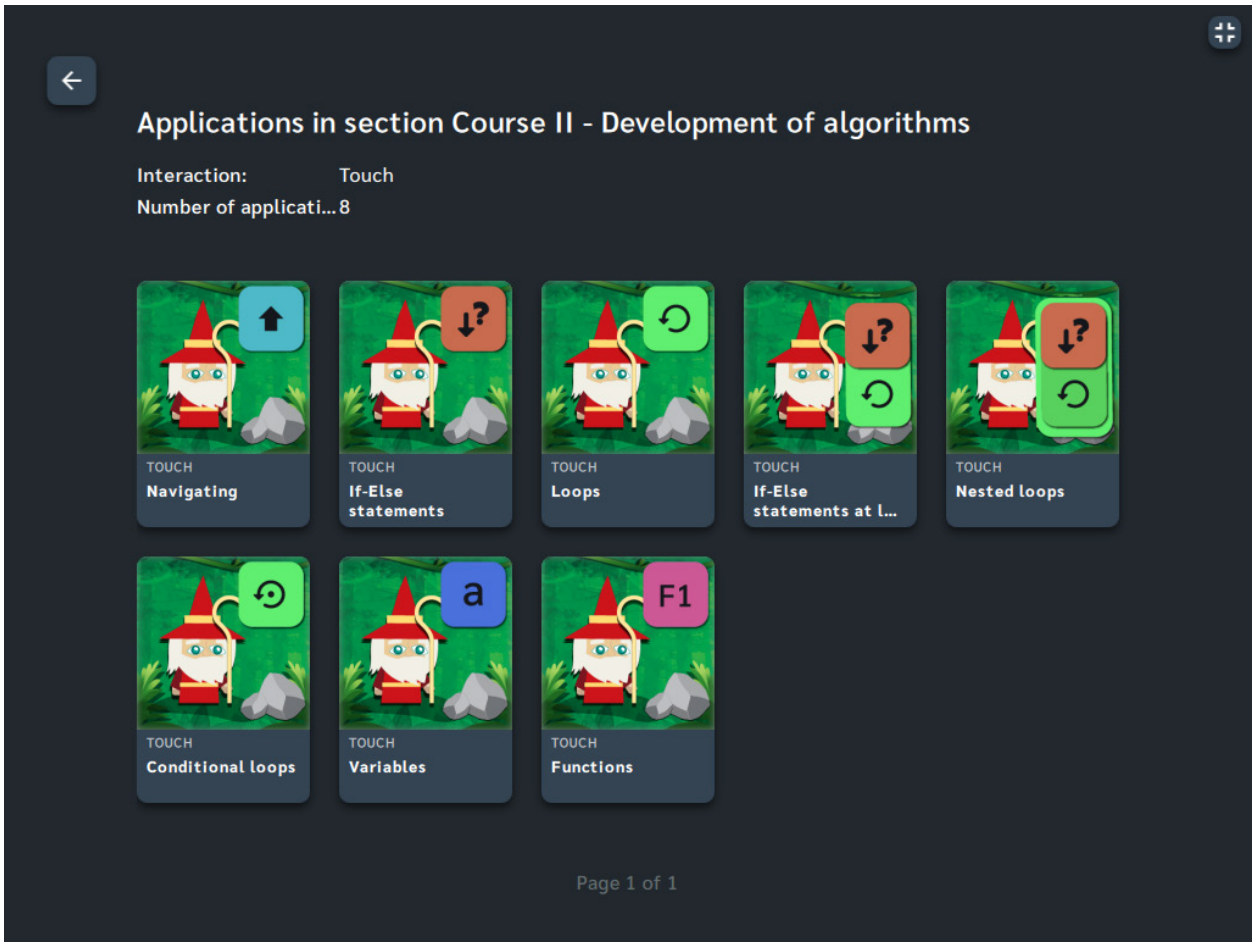
**Conditional loops**
Three heroes are no joke. Nest them in a loop under good conditions. 28 exercises.

**Nested conditional loops**
Something for looped under many conditions. You will spin our heroes well! 12 exercises.


**Variables**
Manage two or even three heroes with variables. Variables in operations or as states? Why not! 22 exercises.


**Functions**
The multi-functional code will be your strength. The heroes are counting on you! 30 exercises


Select Level
Course I Level 7 Conditional statements " If-then "
Program
Run by: button
Place a block: on the right
Conditions
Actions
Go
Go up
Go down
Go left
Go right


Applications in section Course II - Development of algorithms
Interaction: Touch
Number of applicati... 8
TOUCH
Navigating
TOUCH
If-Else statements
TOUCH
Loops
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If-Else statements at l...
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Nested loops
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Conditional loops
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Variables
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Functions
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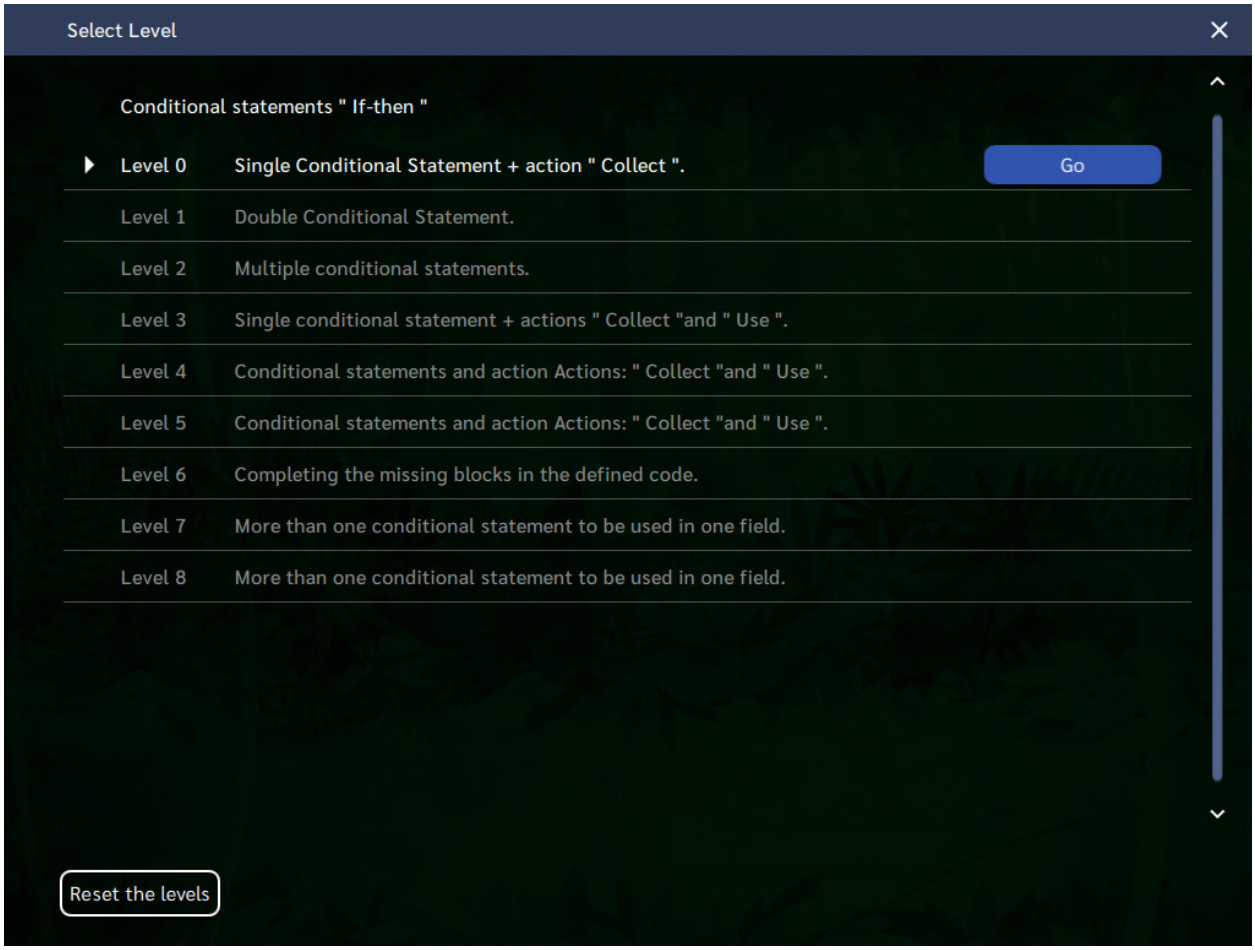
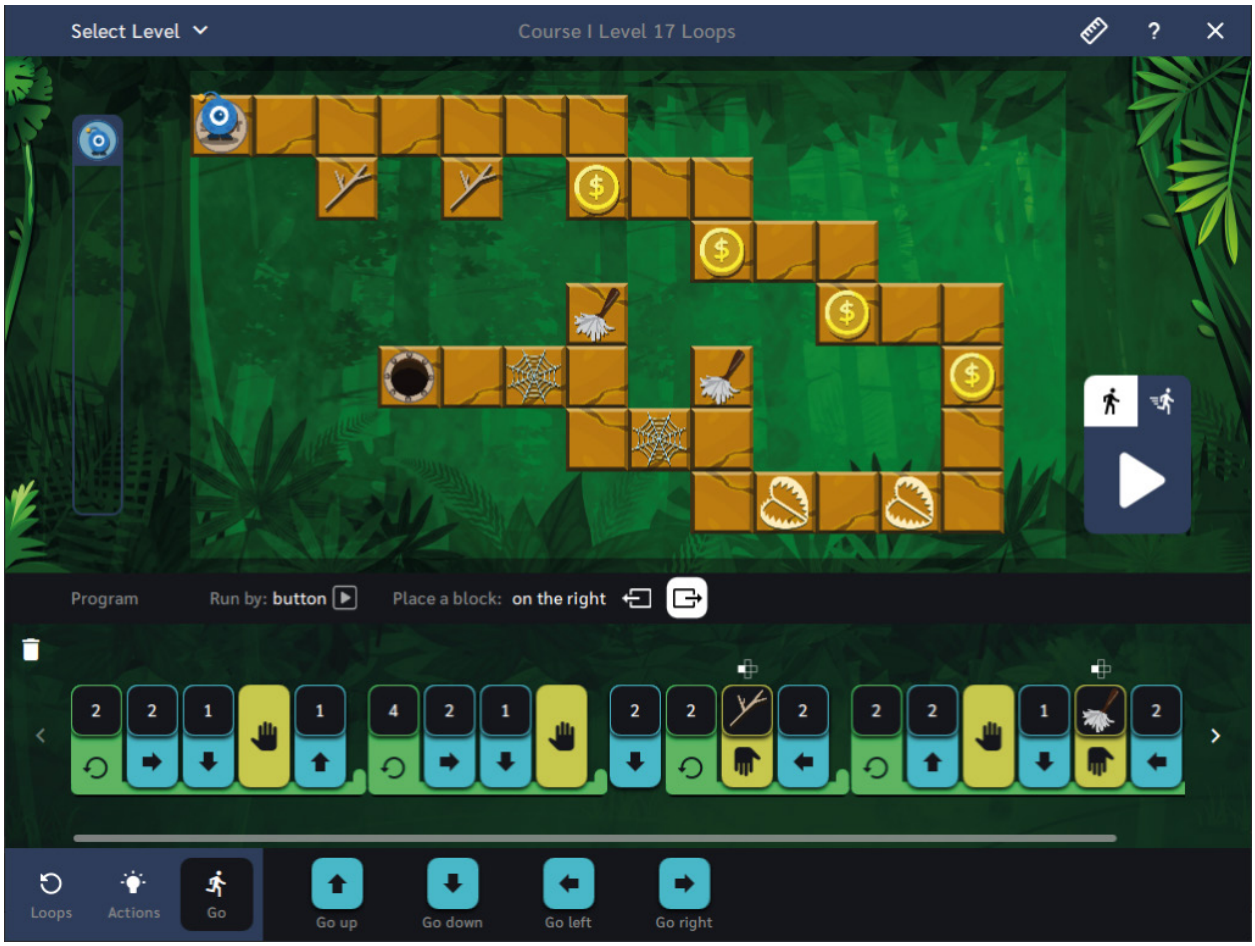
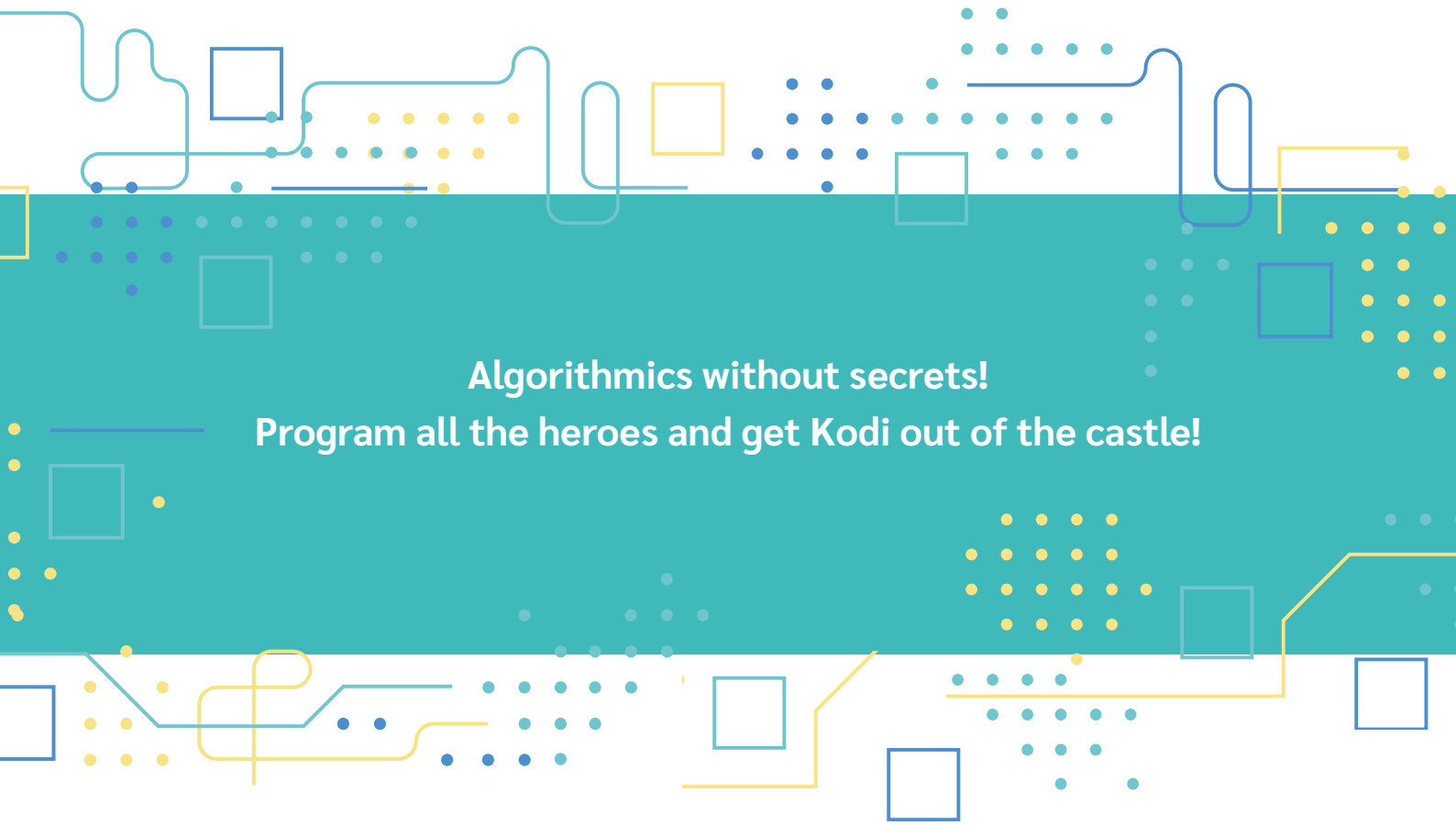

Select Level
Conditional statements " If-then "
Level 0 Single Conditional Statement + action " Collect ".
Go
Level 1 Double Conditional Statement.
Level 2 Multiple conditional statements.
Level 3 Single conditional statement + actions " Collect "and " Use ".
Level 4 Conditional statements and action Actions: " Collect "and " Use ".
Level 5 Conditional statements and action Actions: " Collect "and " Use ".
Level 6 Completing the missing blocks in the defined code.
Level 7 More than one conditional statement to be used in one field.
Level 8 More than one conditional statement to be used in one field.
Reset the levels


Select Level
Course I Level 17 Loops
Program
Run by: button
Place a block: on the right
Loops
Actions
Go
Go up
Go down
Go left
Go right


Algorithmics without secrets!
Program all the heroes and get Kodi out of the castle!

Check more on

www.motioncube.io