## WHAT IS IT?

During last years, there was a huge increase of cognitive function issues like ADHD syndrome etc. Learning Light is a product that focuses on a cognitive functions training.

This system tries to improve attention or memory of its user. The user needs to pay attention to a light, which is flashing with colors, and interact with a mobile application.



The application comes with two basic functions:

- reaction training, where the user needs to react as soon as possible to a light change,

- memory training, where the user needs to remember a sequence of colors and then reconstruct it in the right order.

In both cases the application measures the reaction time that is shown to the user after the training. This feature can keep track of the training progress and ensures a presence of a gamification element.
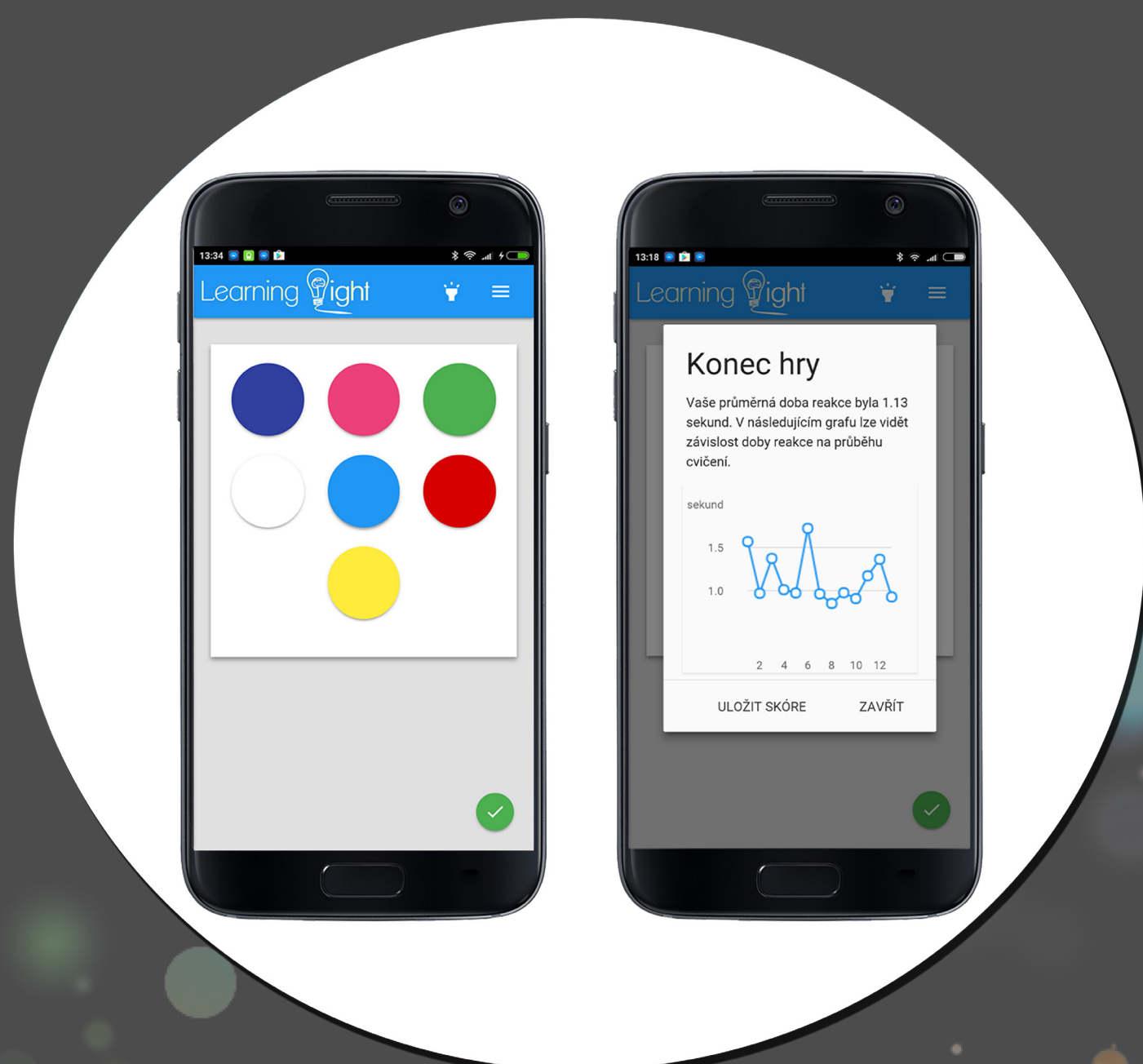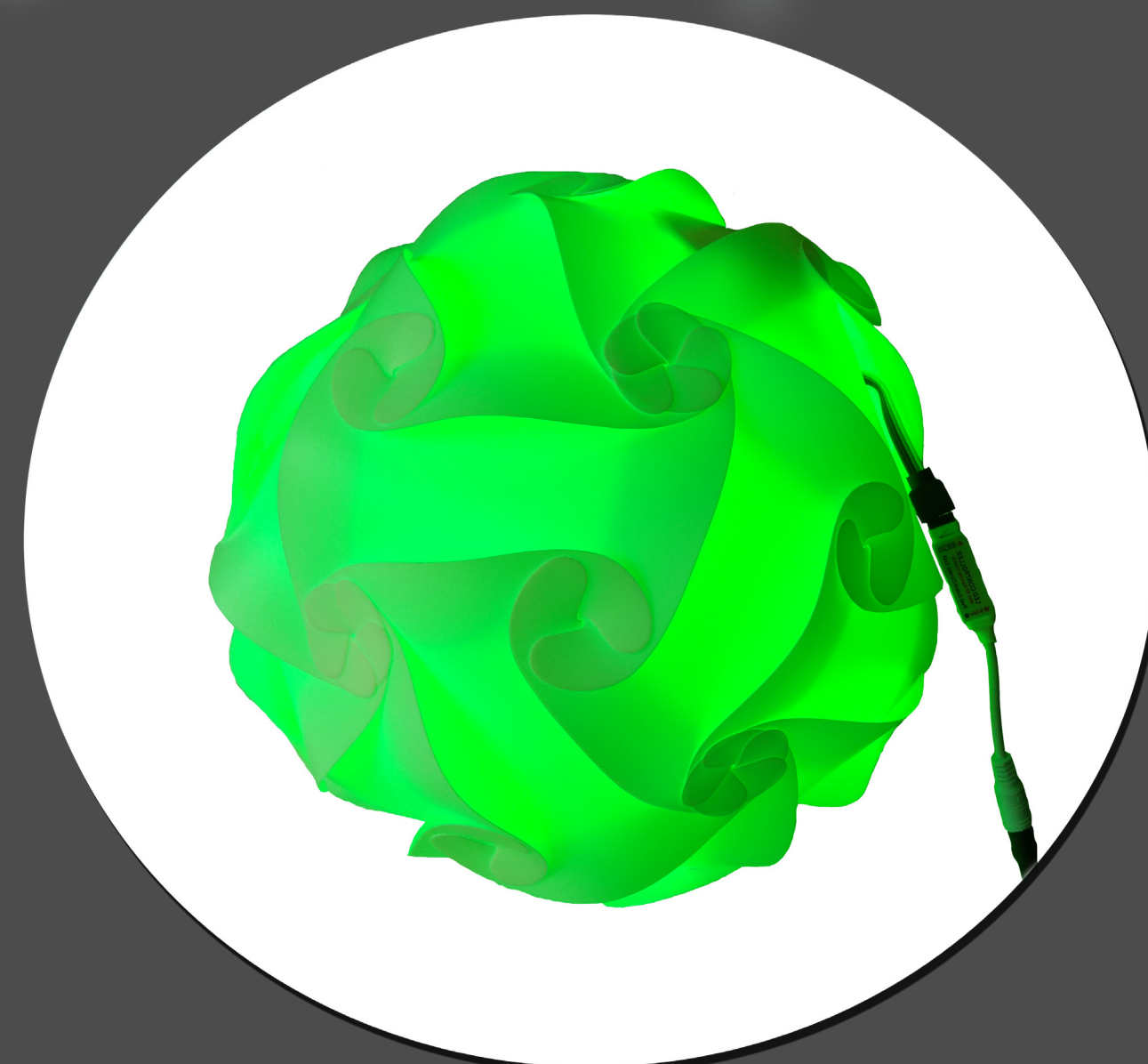


## TECHNICAL DESIGN

Learning Light is made of three parts:
- a light,
- a controller,
- a mobile application.
The light is a RGB LED strip with a radio frequency receiver, packed in a plastic cover.



The controller consists of an Arduino Leonardo with a Bluetooth module and a radio frequency transmitter.

The application sets the Learning Light's behavior: when a color change is needed, a message via Bluetooth is sent to the controller and then transmitted via the radio frequency transmitter to the light. The system is shown on the picture below.
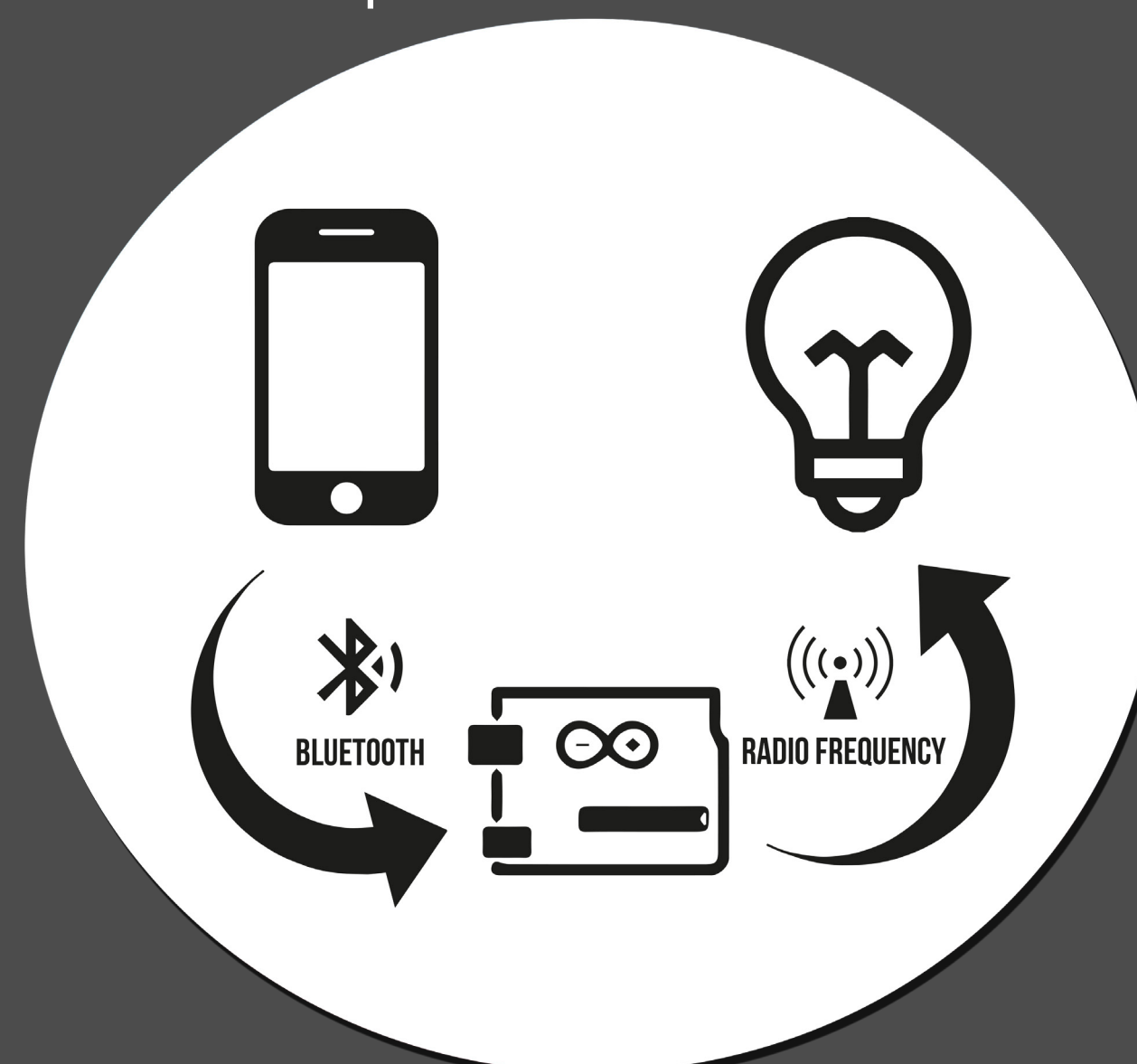


The mobile application is developed with HTML, CSS and JavaScript, afterwards compiled with Cordova and hosted inside a native application that utilizes a mobile platform's WebView. This is called a hybrid application development.