

# moo-pong

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## 1 Introduction

Moo-pong is a tool to make original "piece" which consists of one's experiences (moving images) for someone and experience the "piece". Moo-pong devices enable to pick up moving images from one's environment, gather them, and appreciate them as a kaleidoscope. A camera links the captured images with physical IDs. The IDs are gathered in a container, which generates a movie relating to the IDs, to be appreciated as a living experience.

## 2 Exposition

Moo-pong consists of three devices: "moo-ball", "moo-cam", and "moo-scope". Moo-ball is a ball of four centimeters diameter. Moo-cam is a cylindrical miniature camera on which the user puts moo-ball. Moo-scope looks like a transparent kettle. The user gathers some moo-balls into moo-scope and can appreciate the moving images contained in the moo-balls.



Figure 1: moo-pong.

The creator of "piece" captures a moving image, which contains an interesting scene from his environments or an emotional message to his friends to a moo-ball by using moo-cam. He can capture the moving images of 15 seconds to one moo-ball. To collect some moving images, two or more moo-ball is needed. The creator can create his own "piece" by choosing some from the moo-balls and gathering them into a moo-scope.

The person who receives the "piece" peeps at the moo-scope and appreciates the "piece". He can change the moving image contained in the moo-ball existing in the moo-scope by choosing the buttons on the cap of the moo-scope.

Moo-pong obtains some hints from a kaleidoscope. To make the kaleidoscope, the creator gathers beads and shells and so on from his surroundings as "objects". Peeping the gathered "objects" through the cylinder made of three or more mirrors, the beads and the shells are changed into beautiful scenery. Moreover the one

who are appreciating the kaleidoscope can change scenery by shaking and inclining the cylinder.

Moo-pong has features that include these elements of the kaleidoscope. The following itemization describes the design features of moo-pong.

- To appreciate moving images reflected by mirrors as a kaleidoscope at moo-scope: The moving image becomes impressive since it is spreading visually.
- To "peep" a moo-scope to appreciate the "piece": The user can experience it without interruption from surroundings.
- To change the moving image by choosing the buttons: The user can manipulate the moving images as he likes. For example, he can skip or repeat them.
- Capturing moving images into physical objects: The moving images are used as physical objects. The user can pick up the object, throw away it, or give it.
- Only 15 seconds of capturing the moving image: The user considers what to capture.
- The gleam of the moo-ball: It indicates the moo-ball's state to the user. It turns red while capturing and blinks when time limit approaches, green when capturing has finished, and blue when seen in the moo-scope.

## 3 Implementation

We implemented the moo-pong devices by using the wireless IC tag technology that associates information with physical objects. Moo-ball is composed of an RFID-tag, a microcontroller, and LEDs that notify the user of the moo-ball's state. Moo-cam associates the ID of the moo-ball with the moving image that the video camera in the moo-cam captured. Moo-scope has a RFID-reader, a small (2.5inch) LCD display, and push buttons. Moo-scope displays the moving images that correspond with the IDs that the RFID-reader read. Users can edit and browse moving images by natural action that they drop moo-balls into moo-scope. Mirrors in moo-scope produce visual effects like a kaleidoscope.

## 4 Conclusion

The moving image captured by moo-cam with moo-balls is nothing more than an "object" to moo-scope as if beads and shells to a kaleidoscope. However, when they are chosen, gathered to a moo-scope, and appreciated, they become a "piece". For example, on friend's birthday, we suggest giving the original "piece" with birthday messages from his friends to him. By Using moo-pong, the creator can make his original "piece" which consists of his experiences.

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