

BYOB [Build Your Own Bag]

a computationally enhanced bag design and construction system

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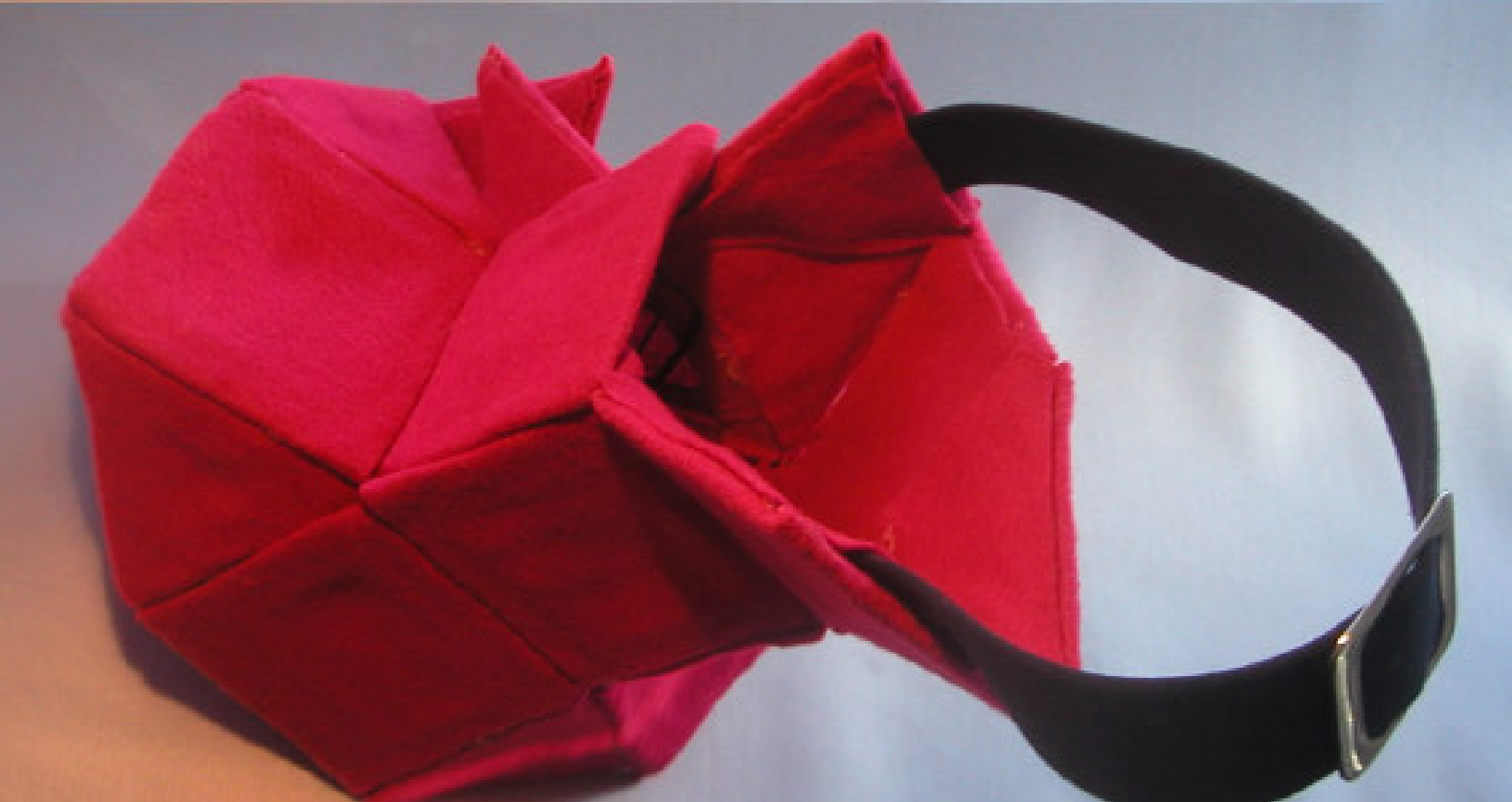
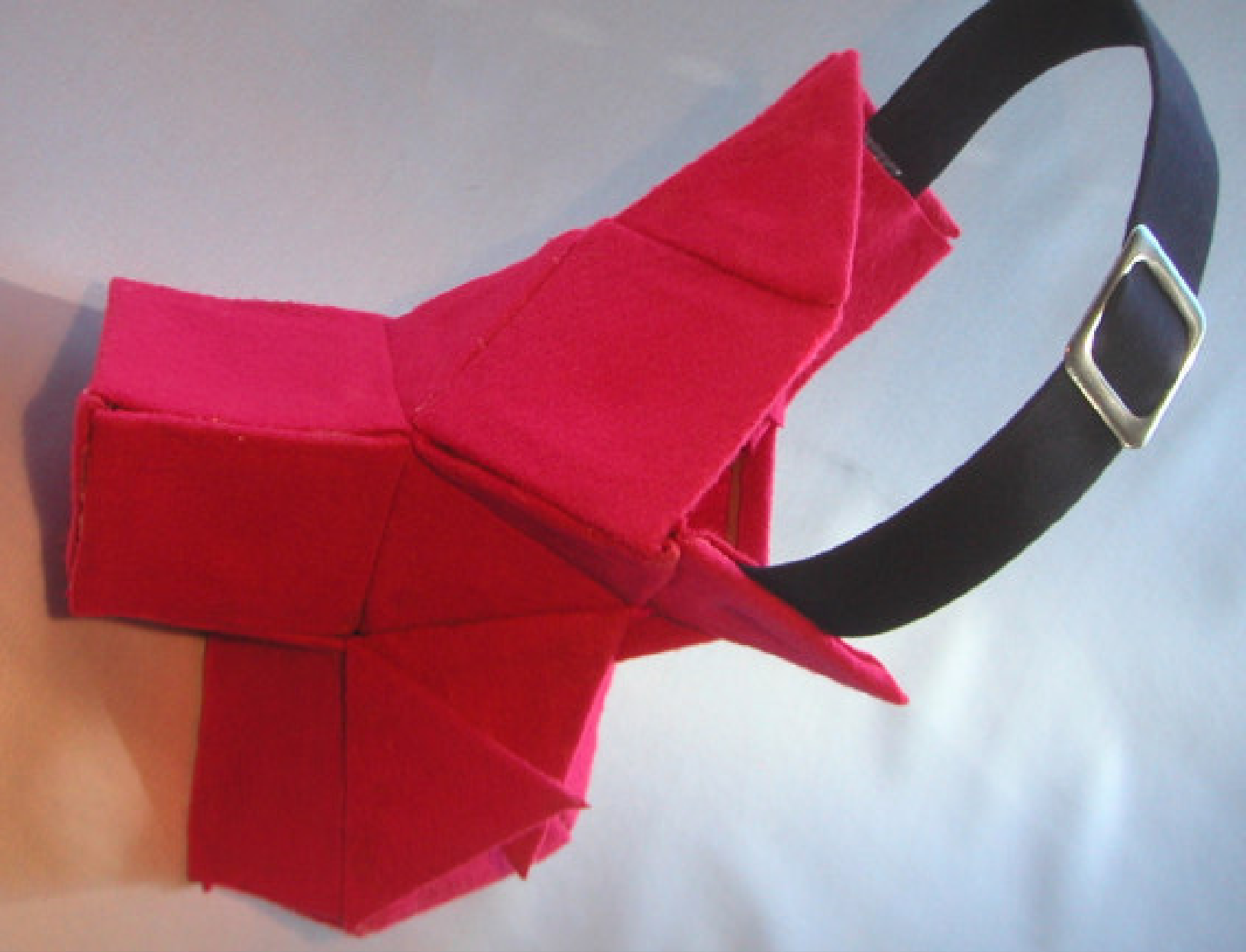


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01. introduction



lots of devices, lots of bags

Today's students and professionals rely on an ever growing array of electronic devices and accessories for school, work, home and recreation. Likewise, there is a constant shuffling of items between appropriate bags. As the contents of our bags become more complex, why shouldn't the containers in which we port our belonging be more customizable and responsive to the contents inside?



byob.

We designed BYOB (Build Your Own Bag), a flexible, computationally-enhanced bag design and construction system that addresses this issue.

BYOB is a set of modular fabric building blocks that can be easily snapped together in order to create a wide variety of container shapes and sizes.

02. design process

the assignment.

MAS.834 Tangible Interfaces

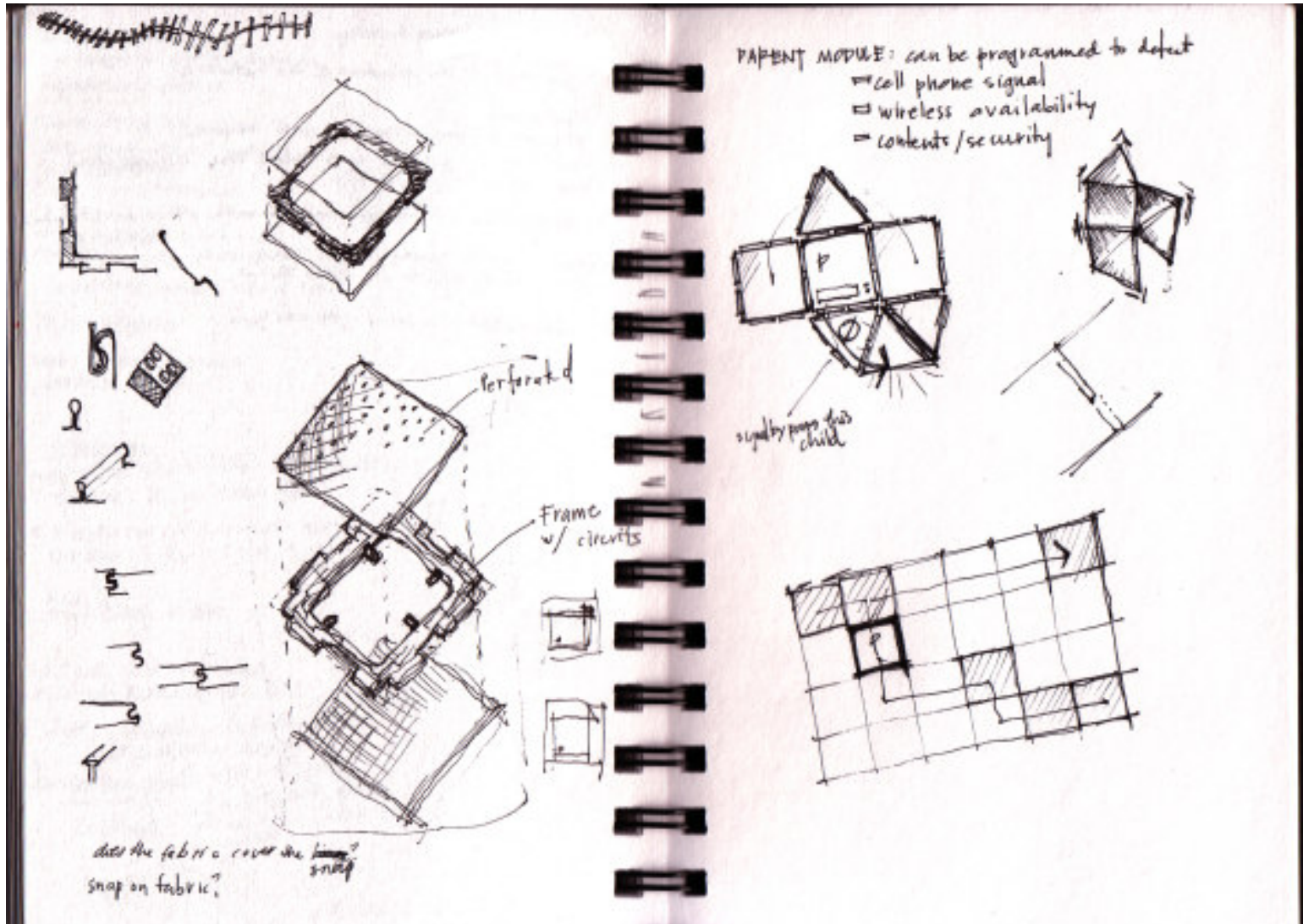
Professor Hiroshi Ishii

Media Arts and Sciences Graduate Seminar, Fall 2003

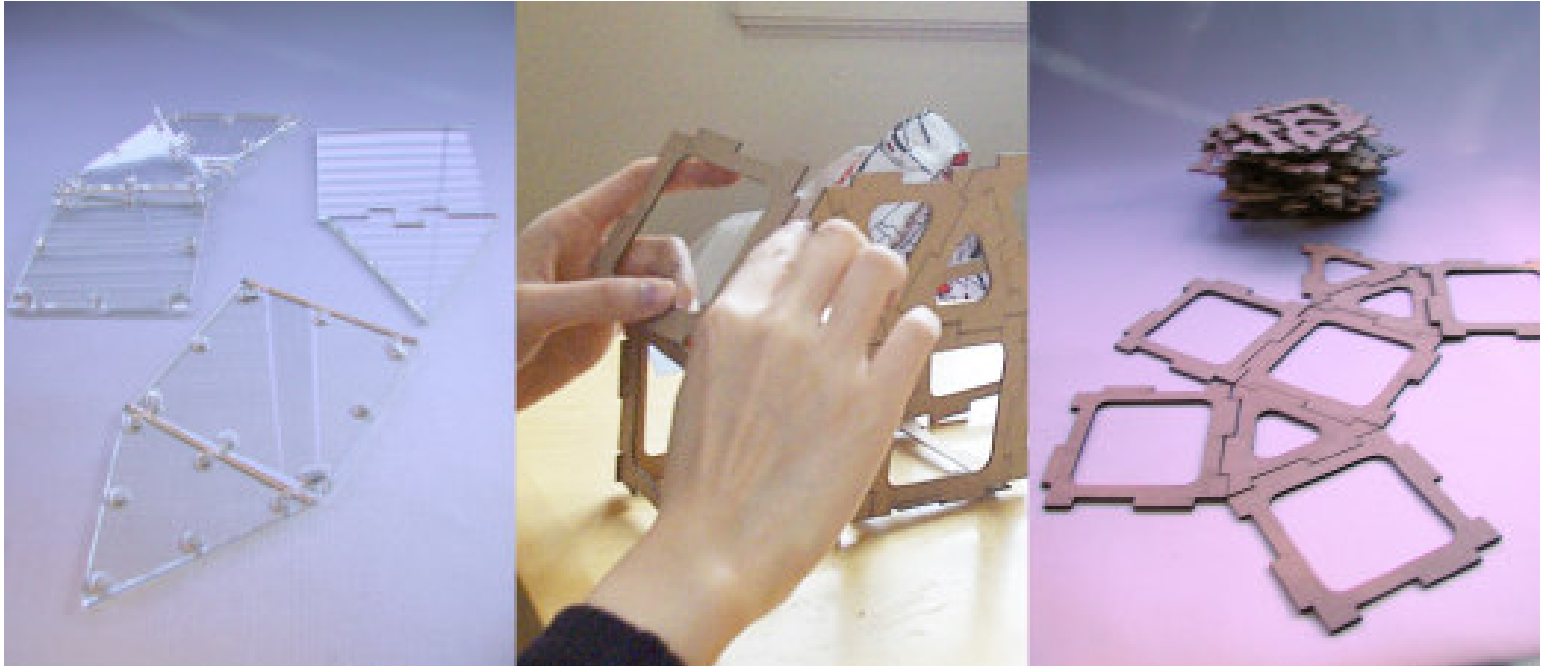
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1) Develop a Tangible User Interface which utilizes a familiar object, material, and/or space as the subject.

2) We would like you to retain what is important and familiar to you about it but use computational power to transform it in a meaningful way, to add to your experience with it. Make sure to avoid eliminating what is already comfortable and important to you about your object/material/space.



conceptual sketches.



module prototypes.

03. how it works

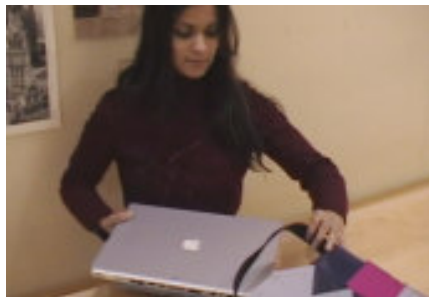
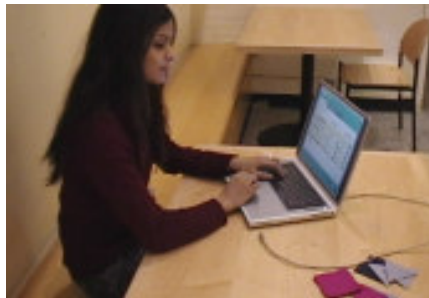


the module system.

BYOB is a set of modular fabric building blocks that can be easily snapped together in order to create a wide variety of container shapes and sizes.

Modules consists of flat squares and equilateral triangles approximately 3"x3" and no more than 1/8" thick. Each module contains a microprocessor made up of flexible circuit board material wrapped in fabric with unique patterns which can be customize by the user.

There are two types of modules contained in the BYOB kit of parts—the Parent and the Child. We will now demonstrate how each of these modules works.

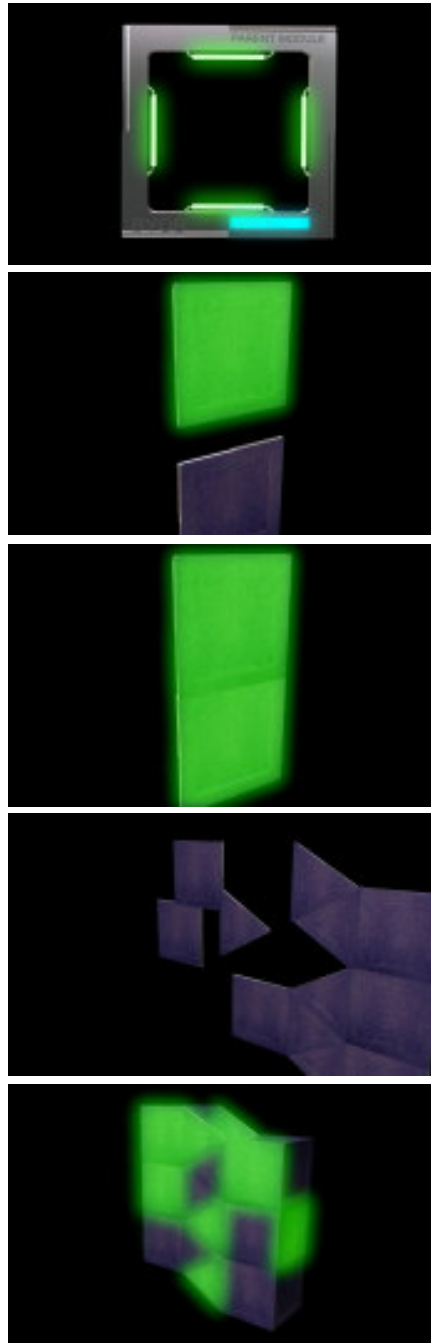


programming the parent.

Parent modules are equipped with usb ports that, when connected to a computer, allow for the transfer of display priorities. Module preferences are set through host computer software.

For example, the user may set the parent module to detect the presence of contents in the bag, the presence of cell phone networks, personal friends and contacts in the vicinity, and wireless networks. The user also chooses what color the module should light up for each type of detection. Settings are subsequently downloaded to the microprocessor of the parent module.

We envision that many more functions may be developed in the future to reflect new electronic devices and preferences of users.



syncing the children.

When designing a bag, the parent can be placed in sync mode and then touched to all the desirable children modules that respond to the message. Once everything has been synced, the parent is switched to display mode and actively checks for the user-programmed networks.

When a parent module receives input to its program, electricity and power are daisy chained to the child modules. Both the parent and child modules are equipped with LEDs that function to output the digital information ambiently. If a child is in default transfer mode (as opposed to active), the signal will bypass that module and check the status of the next connected module down or to the right of the current module.



personal ambient display.

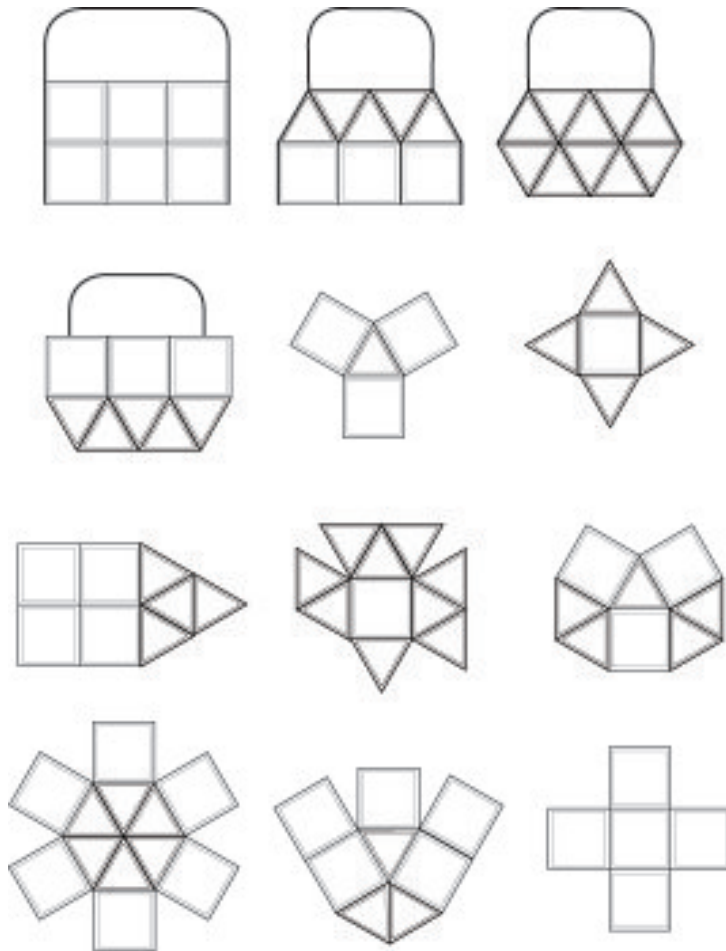
While in transit, BYOB assists the user by seamlessly integrating the functionality of several digital devices into the interface of a contextually aware bag. The user is relieved from expending extra effort to seek out information relevant to the items he/she is carrying. For example, this user does not have to go through the time-consuming process of unpacking her laptop and turning it on to see if there is a wireless network available. She simply needs to make a quick glance at her bag.

04. conclusion



infinite possibilities.

The end result is a unique and customized bag that is as enjoyable to use as it was to build. The user's personal touch is apparent through how he/she designs the form of the bag and the patterns by which the ambient information lights up the bag. Because the modules act as fabric building blocks, we envision that one kit of parts can be shared amongst several people and lead to collaborative projects. BYOB encourages freedom, flexibility, and rapid arrangement in the exploration of common and uncommon shapes and sizes.



project credits.

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