

# Arduino Projects and Hacks

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- [RoboTray is a Secret Tea Butler](#) [2]

If [samsungite] has any more Arduinos lying around, he might appreciate this tea inventory tracker.

- [Taking A Deep Dive Into SPI | Hackaday](#) [3]

With the prevalence of libraries, it has never been easier to communicate with hundreds of different sensors, displays, and submodules. But what is really happening when you type `SPI.begin()` into the Arduino IDE? In his most recent video, [Ben Eater] explores the Serial Peripheral Interface (SPI) and how it really works.

Most Hackaday readers probably know [Ben] from his breadboard-based computers, such as the 6502 build we featured in 2019. Since then he has been hard at work, adding new and interesting additions to his breadboard computer, as well as diving into different communication protocols to better understand and implement them. For this video, [Ben] set the goal of connecting the BME280, a common pressure, temperature, and humidity sensor with an SPI interface, to his breadboard 6502 computer. Along the way, [Ben] discusses how exactly SPI works, and why there is so much conflicting nomenclature and operations when looking at different SPI devices.

- [TinySewer is a Portenta-powered camera module for sewer faults detection | Arduino Blog](#) [4]

We all interact with the sewer system at multiple points throughout the day, and having it fail

can lead to catastrophic results. Every year in the United States alone, an estimated 23,000 to 75,000 sewer pipe failures are reported, which means billions of gallons of untreated and hazardous waste is released into the environment. But rather than having a person constantly inspect the system on location, Huy Mai came up with a way to use computer vision in conjunction with embedded machine learning to automatically detect when a defect has occurred.

- [Arduino Cloud Widgets and Data Downloads Get an Overhaul](#) [5]

Arduino Cloud's dashboards and widgets are some of its most popular features. It's what turns the Cloud into your ultimate control center for all kinds of projects, from home automation to industrial monitoring.

We're constantly looking for ways to improve the user experience, and we've just rolled out some small, but very important tweaks. Combined with the new historical data download process, your Arduino Cloud experience will now be even smoother.

## [Hardware](#)

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**Source URL:** <http://www.tuxmachines.org/node/155759>

### **Links:**

[1] <http://www.tuxmachines.org/taxonomy/term/39>

[2] <https://hackaday.com/2021/09/17/robotray-is-a-secret-tea-butler/>

[3] <https://hackaday.com/2021/09/16/taking-a-deep-dive-into-spi/>

[4] <https://blog.arduino.cc/2021/09/17/tinysewer-is-a-portenta-powered-camera-module-for-sewer-faults-detection/#respond>

[5] <https://blog.arduino.cc/2021/09/16/arduino-cloud-widgets-and-data-downloads-get-a-design-overhaul/>