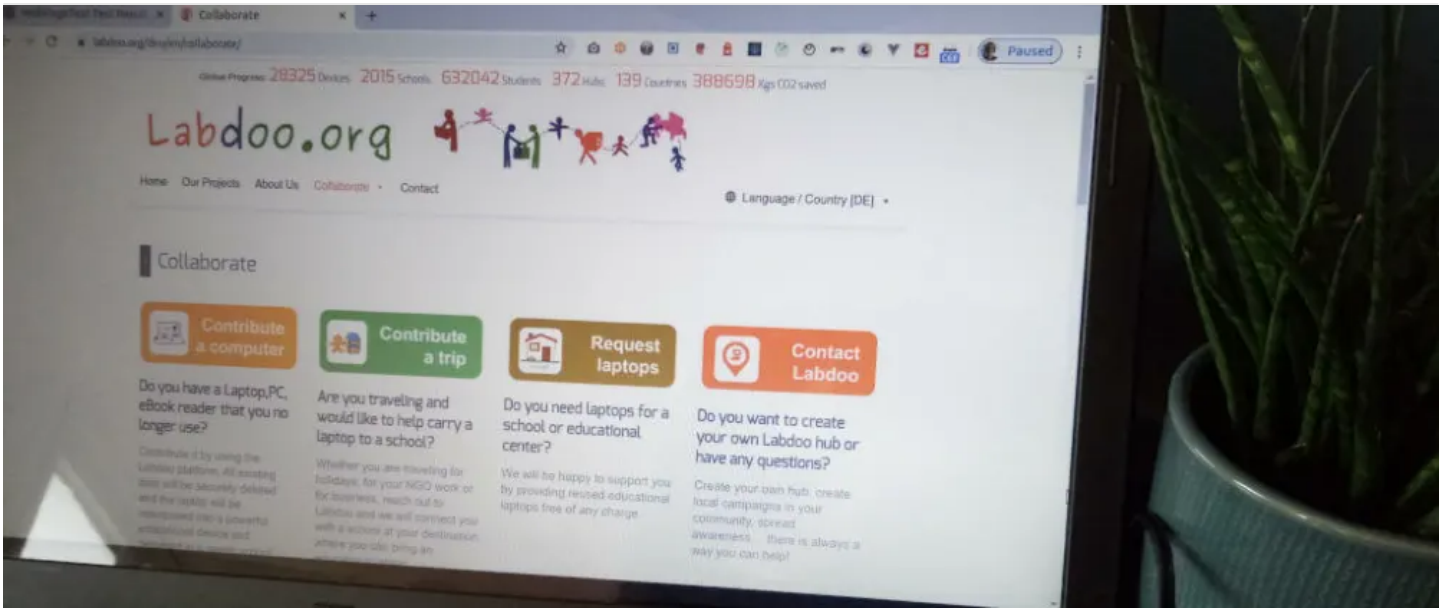


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**Ingo Steinke**
Posted on 12 Mar 2021

# Low-Waste Tech: Reduce, Reuse, Repair and Donate!

#sustainability #repair #linux #lineageos

*Originally published on Open Mind Culture, following a sustainability meetup about circular economy, laptop donation and repair cafés.*

"Zero Waste" is a tall order. Inspired by the discussion about *no-code* and *low-code*, I would rather aim for "low waste", and replace "refuse" with "reduce" in my personal sustainability motto.

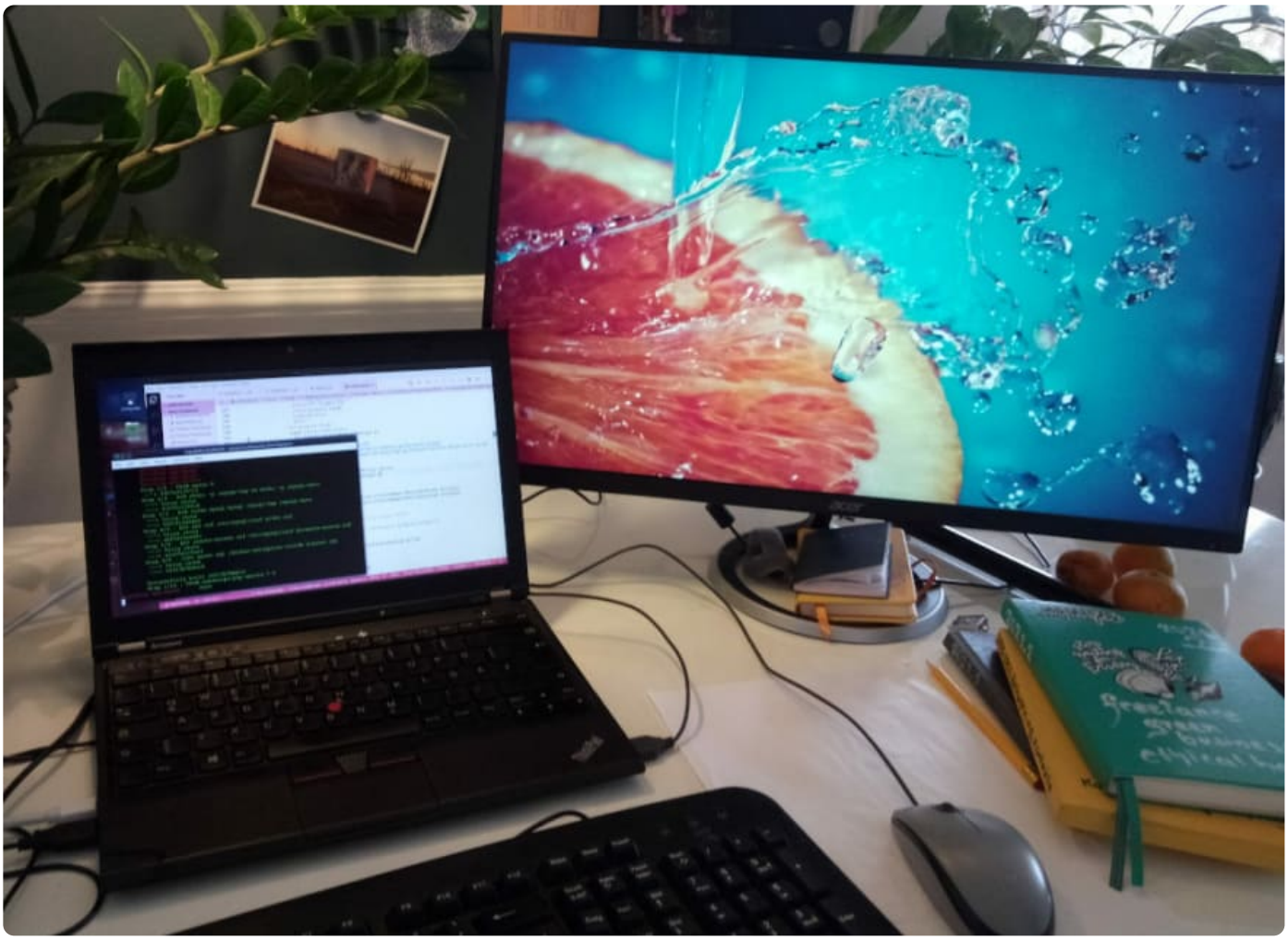
## Reduce ✋

Buy less! Originally: refuse to buy something just because you could.

## Reuse ♻️

Upgrade your hardware, prefer sustainable software,
buy second hand: in 2020 I bought a refurbed laptop, originally a ThinkPad series that has been discontinued in 2014, upgraded with more memory etc. by a professional company. This device is totally fit for web development (including webpack and PHP servers, Docker setups etc.)

## Refurbed ThinkPad as a Linux Laptop in 2021



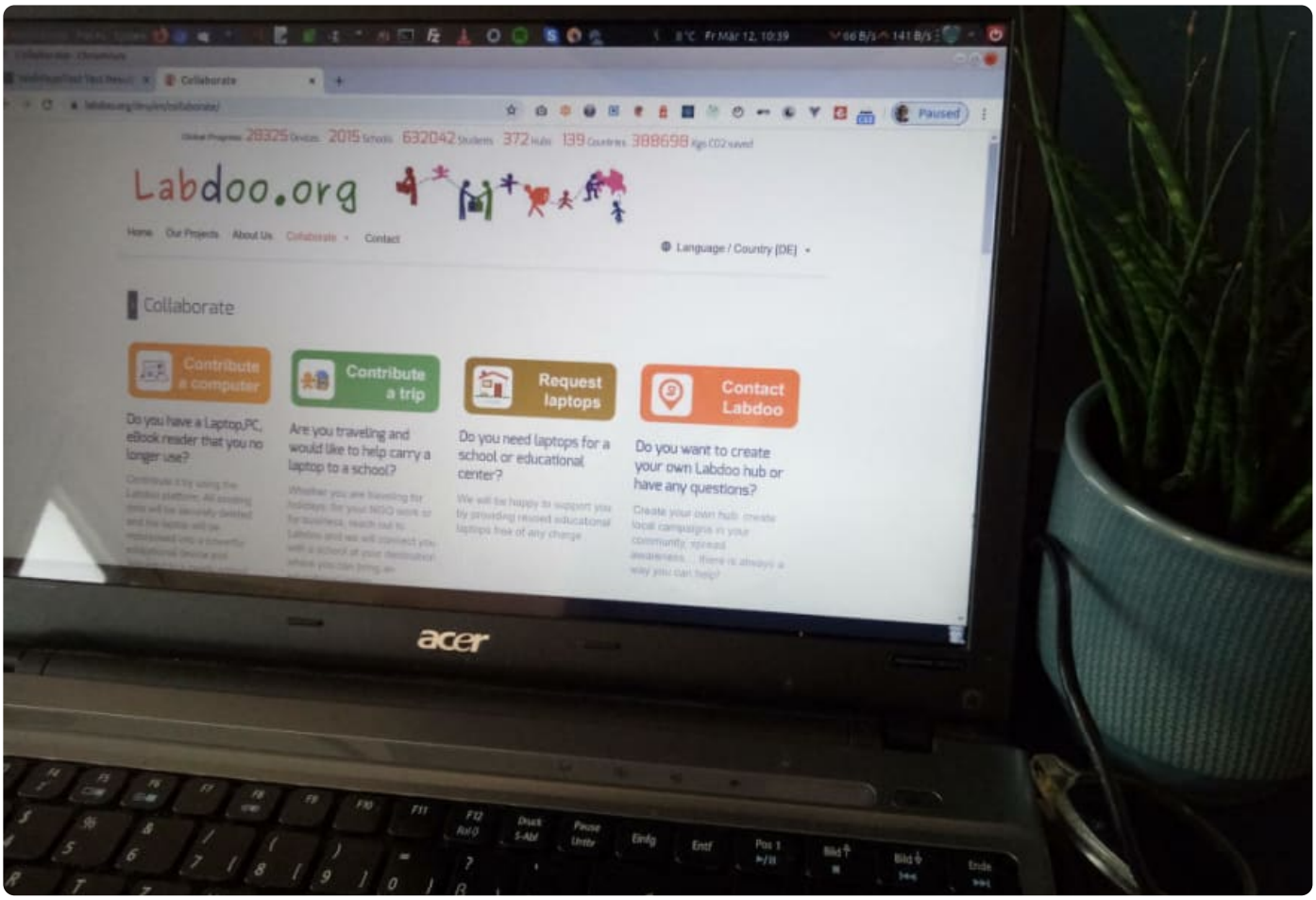
Linux as an operating system is usually quite light-weight and optimized for performance. There are different distributions like Ubuntu Mate or Linux Mint that offer a modern, elegant look and feel. Upgrading an old laptop from Windows to Linux might be an alternative to buying a new machine.

Smartphones are harder to upgrade. LineageOS (formerly CyanogenMod) is an open-source version of Android (AOSP) that makes it possible to upgrade to newer Android versions even if your vendor does not offer any official updates any more. This requires rooting and manipulating your device, but once it got outdated, you do not have much to lose anyway.

## Donate 🤝

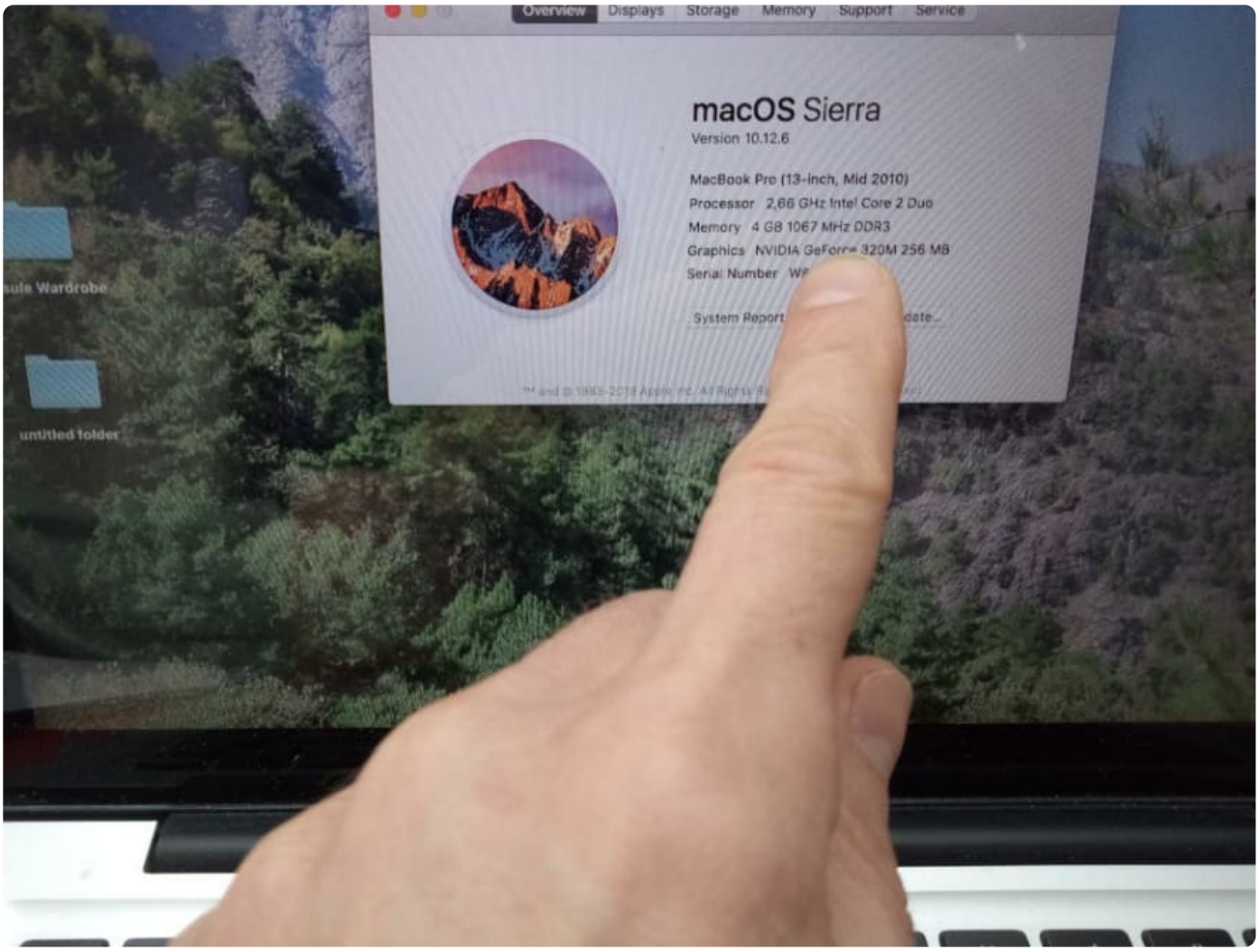
Laptops that are too slow and low for development are still useful thin clients for reading, writing and probably even homeschooling. If you don't need it, donate for those in need: Labdoo.org collects used laptop computers, deletes old data professionally, and installs a Linux operating system with office and learning software, including offline dictionaries and ebooks so they will be useful even without an internet connection.

connection.




## Repair 🔧

Some years ago had the chance to get a MacBook Pro with a defunct battery. Checked the internet, bought a replacement battery, also had to buy two different special screwdrivers to actually replace the battery. The laptop is working fine and used regularly. Not the most recent operating system as Apple is notorious for planned obsolescence.



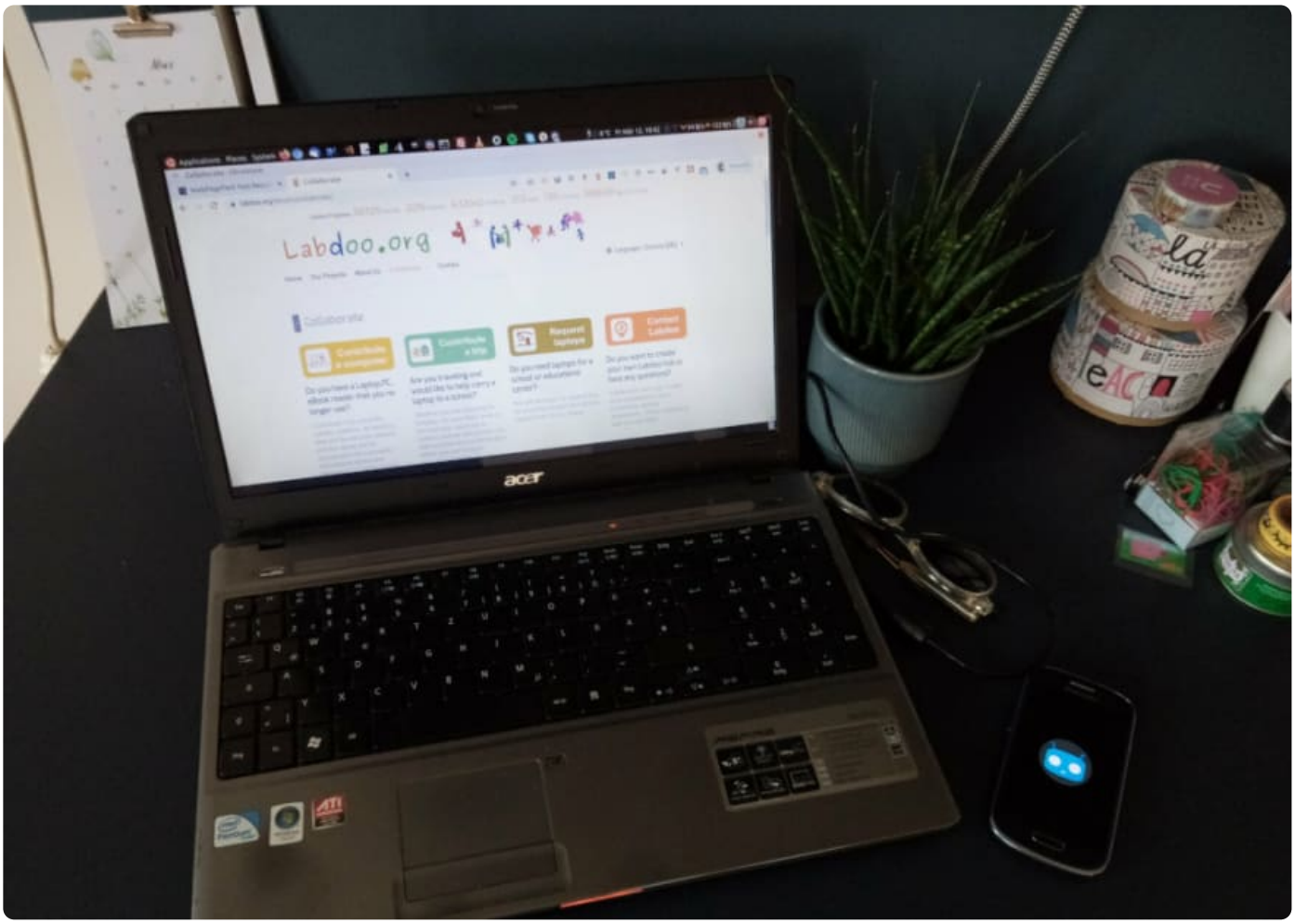

According to the system information overview, it is a MacBook Pro 13-inch from mid 2010 with a 2,66 GHz Intel Core 2 Duo processor, 4 GB memory, running macOS Sierra (Version 10.12.6). Now, this is longevity!

If you don't feel fit to repair yourself, visit a local repair cafe or a professional computer service. Once my laptop dropped to the floor, destroying an edge of its case and the power adaptor. After professional repair and a replacement power adaptor, the device has been working well ever since.

## Device Lab 🔬

Old devices can be used for testing: can you use your app, your website, your software on that old device?

### Slow and Low: Using my 2009 Laptop




Here is a laptop that I bought in 2009. With its large screen and DVD drive, I use it to watch films occasionally. Thanks to Linux, this is still a fully capable development machine, although not with the speed you would expect nowadays, and with its 32-bit hardware, some software does not offer official builds for it anymore. Many modern websites appear slow and sluggish on this computer, so this is a realistic test setup to make sure that your own website does not.

Right next to the laptop, you can see an old Samsung phone rooted and upgraded to Android 7 using CyanogenMod, outdated again some years later. Which is a pity as I miss the blue robot animation 🤖

## Rot or Recycle 🌺💀🌹

As high tech devices got smaller and more powerful every year, they go harder to mod, repair and recycle. Fairphone is one of the few attempts to change. High tech material does not rot, at least not in a few years.

### Discussion (2)

**Stephen Griffiths** • Mar 12 '21

I am all about this! Thanks for writing this post, would love to see more stuff about sustainable tech on dev.to.

My main PC is a Surface Pro 4 (2015) that I bought refurbished for under £200 - a great deal. I also have a HP Pavilion laptop which has had a new SSD and a new battery but is now 10 years old. My phone is a second-hand iPhone 6S which was free! All of these are still fantastic devices!

**BezPowell** • Mar 12 '21

Absolutely agree. My current Windows development machine (I mainly use Linux but need Windows for testing) is an Asus N550 that I bought refurbished about 7 years ago; its had an SSD update, but sadly might get finally replaced soon as the power circuit seems to be faulty and it doesn't recognise being plugged into the mains about 70% of the time - up until that it had served me faithfully and was still good even for gaming.

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