

THE DEMARCATIION

Of the Edge of Innovation

“

There is no such thing as a new idea. It is impossible. We simply take a lot of old ideas and put them into a sort of mental kaleidoscope. We give them a turn and they make new and curious combinations...

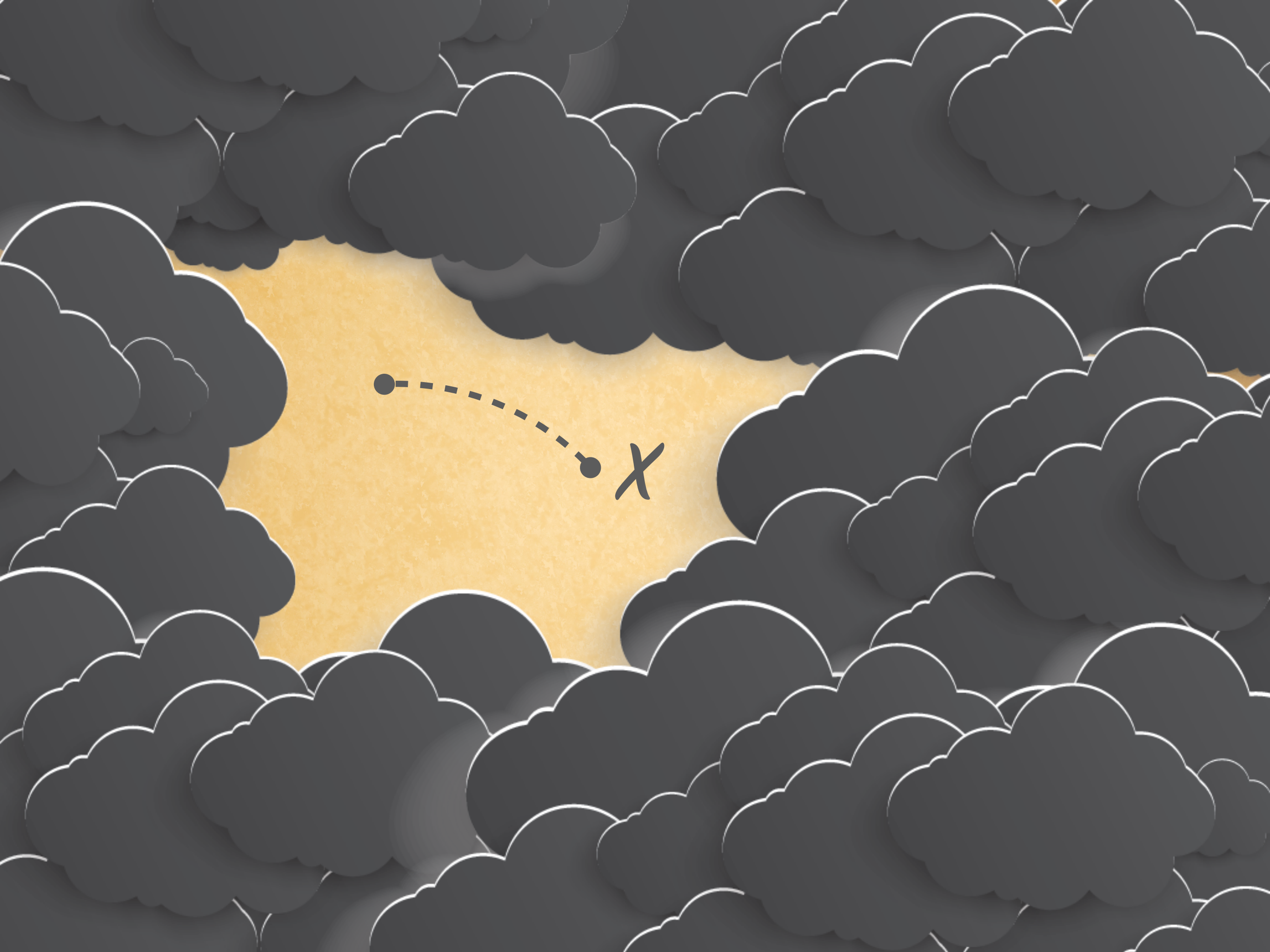
-Mark Twain

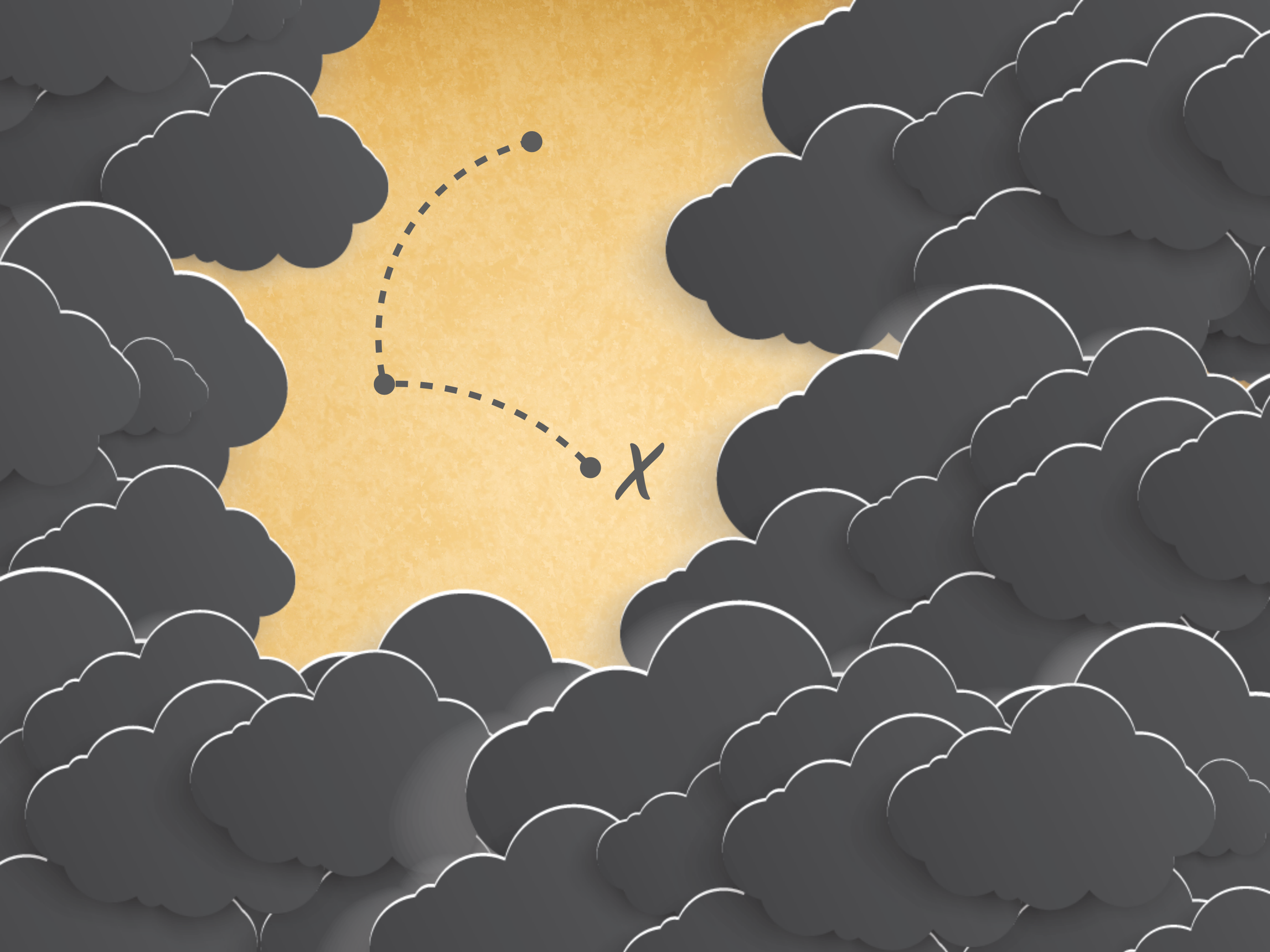


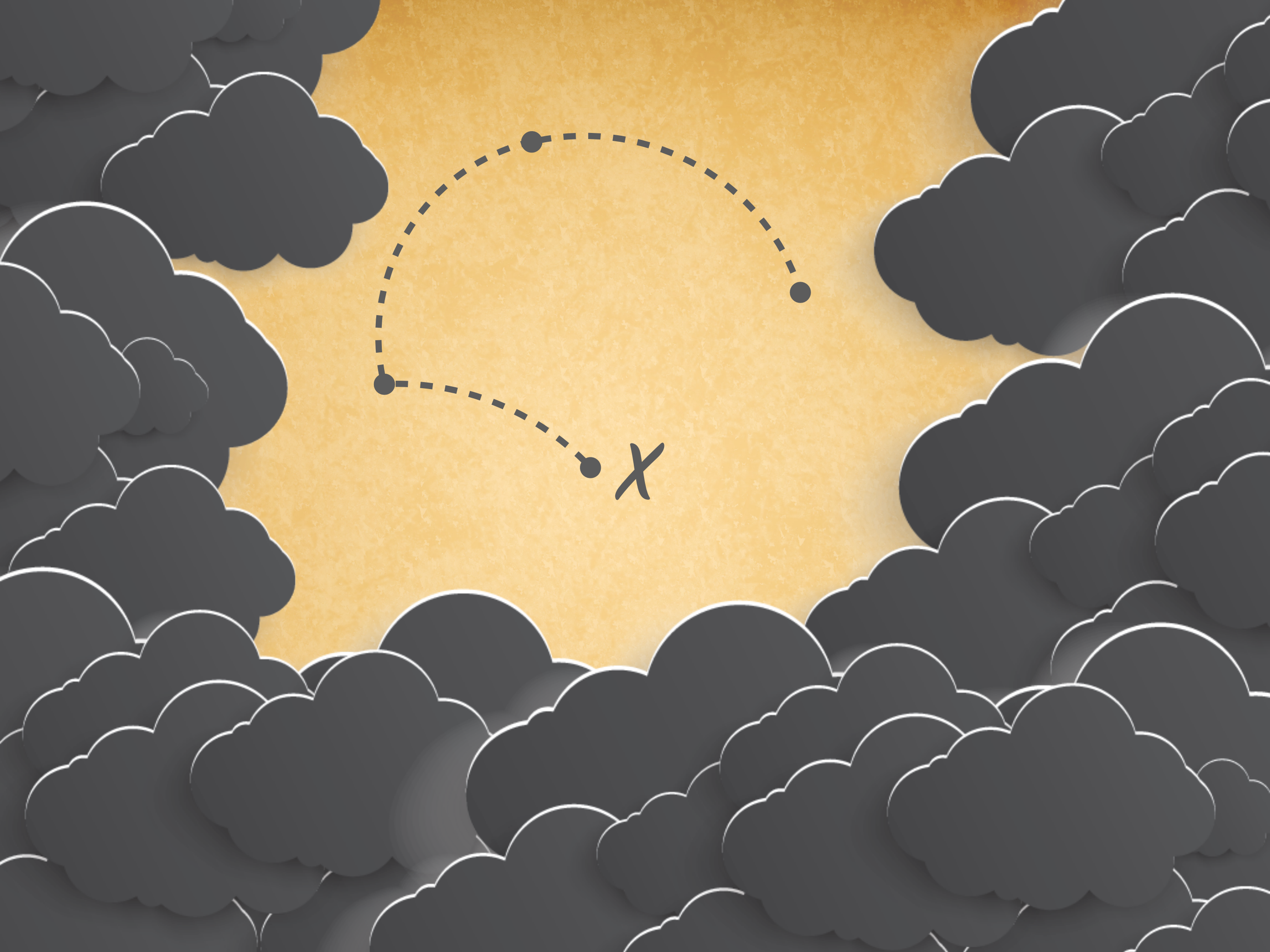
Innovation

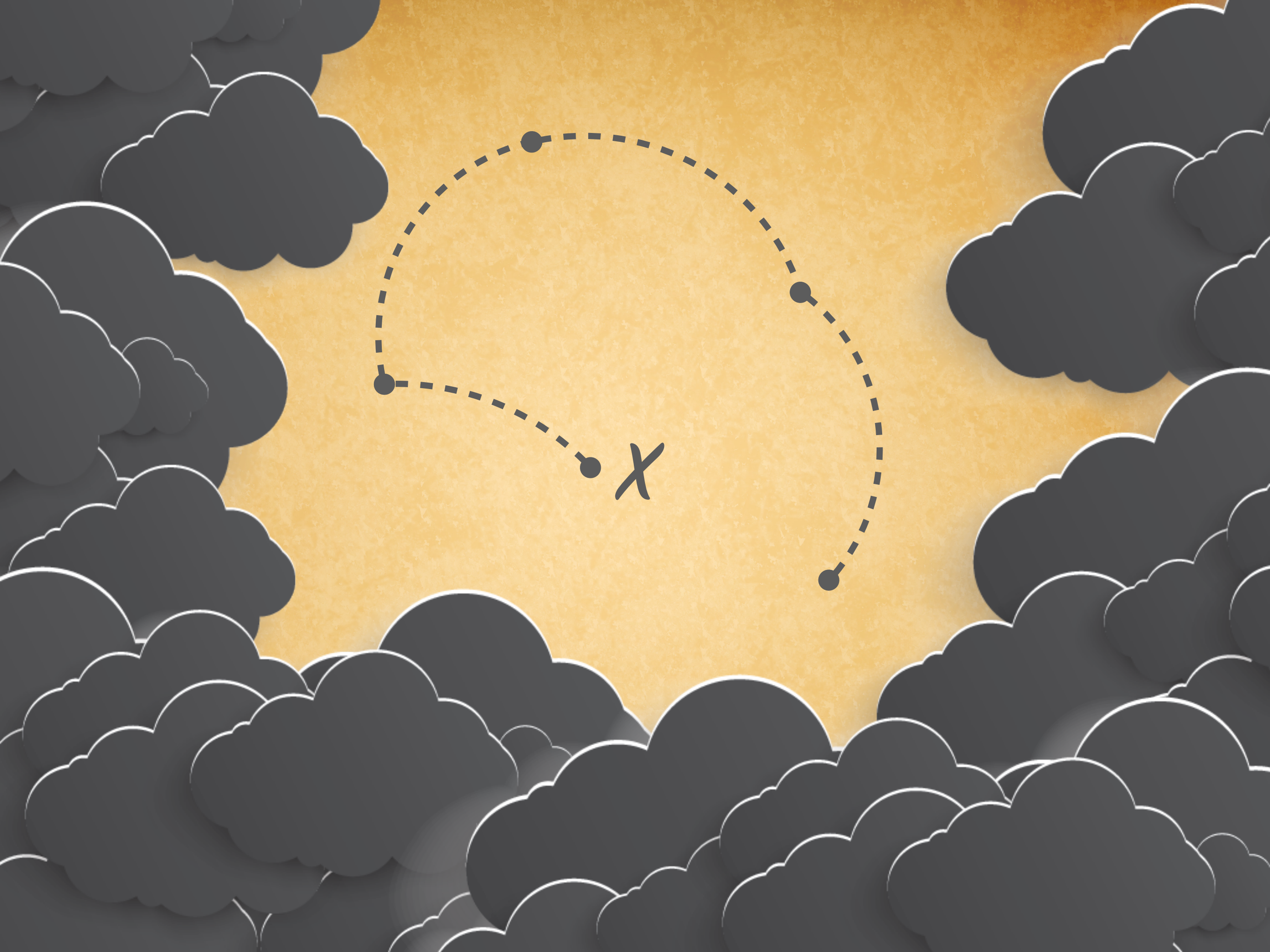
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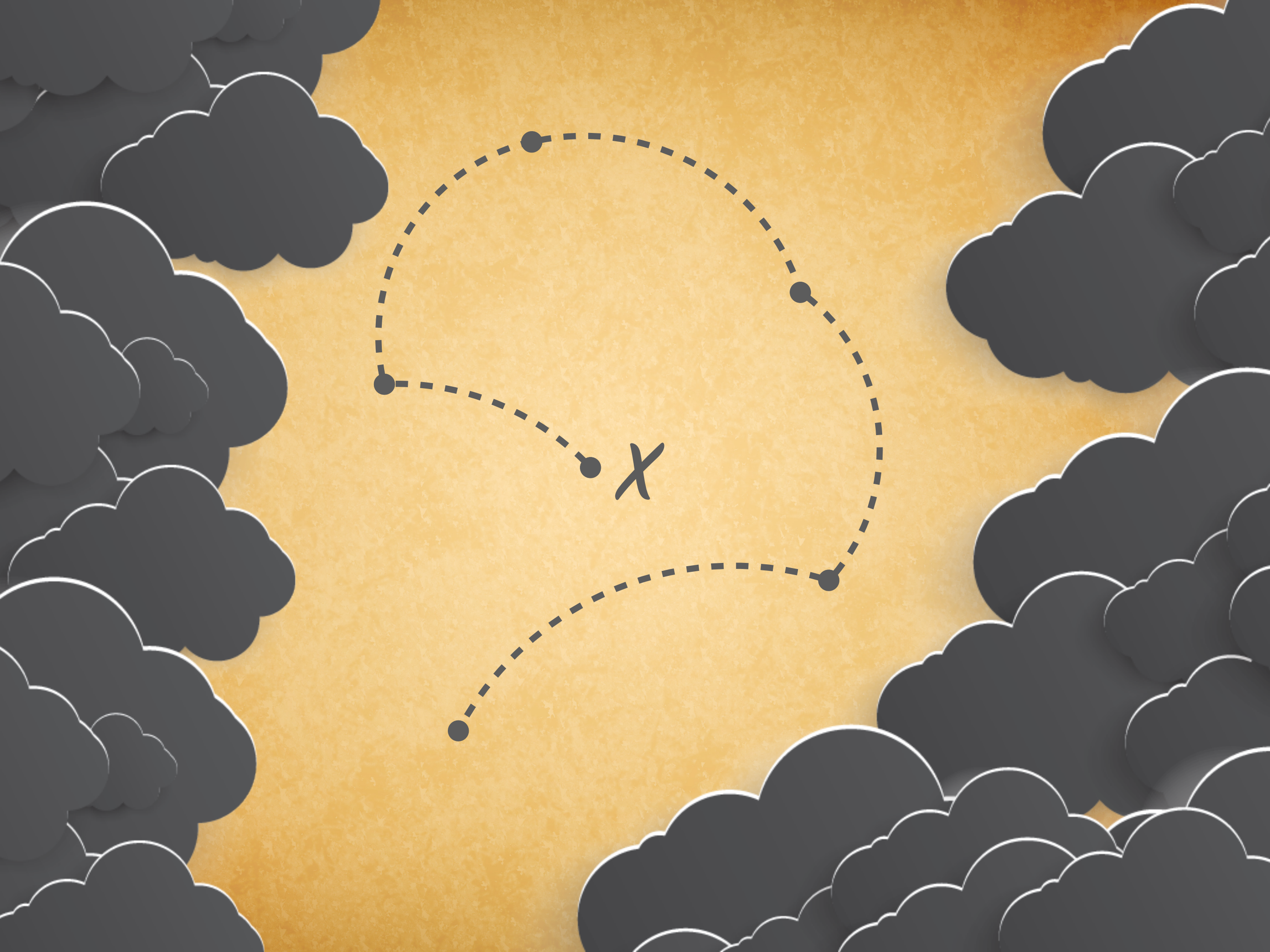


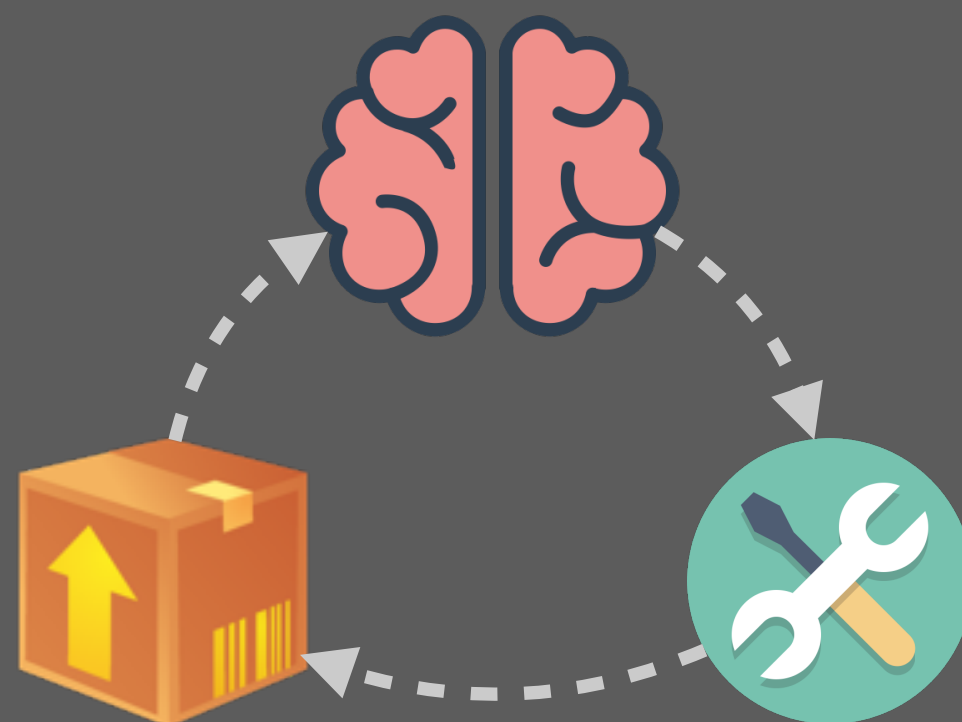


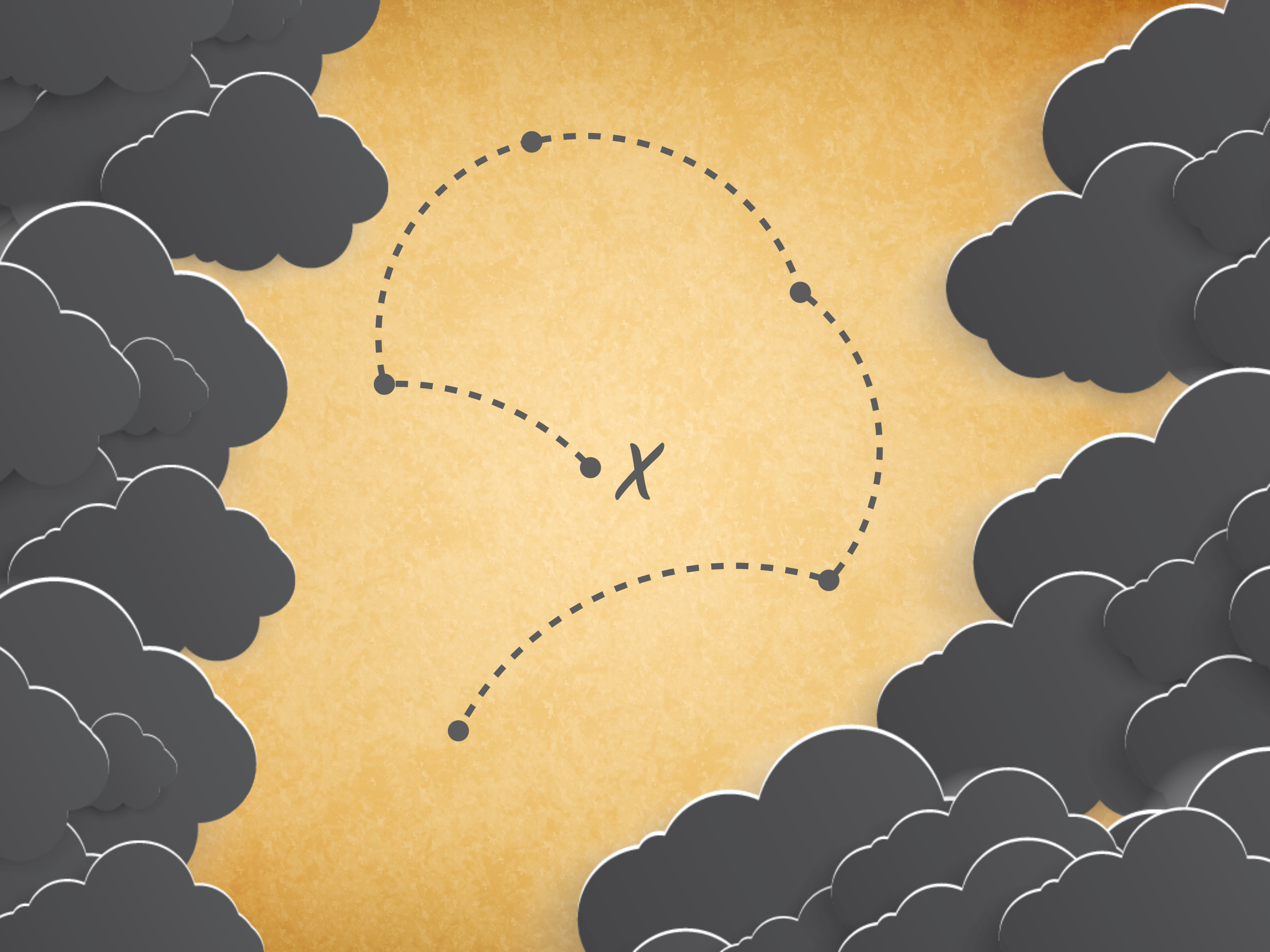












Cooking

Pizza

ingredients

- water
- flour
- salt
- yeast
- (toppings)



Ramen

ingredients

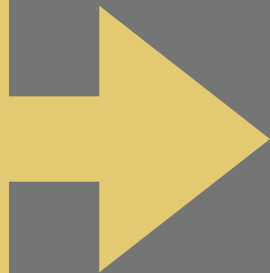
- tare
- stock
- noodles
- (toppings)



Ramen

ingredients

- tare



Step 1

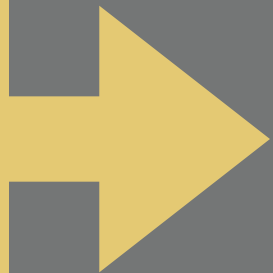
Roast the chicken back in the saucepan you'll later make the tare in. Start it out in a low oven (250°F), so it renders out some fat to cook in. (Or add a tiny bit of oil to the pan and get it going over a medium-high burner.) Crank the oven up to 400°F after a couple minutes. In 20 minutes or thereabouts, with the occasional prod or flip, you should have a deeply ambered chicken back to work with. If it's not somewhere in the mahogany spectrum, keep cooking it until you get there.

<http://luckypeach.com/recipes/momofuku-ramen-2-0/>

Ramen

ingredients

- tare



Step 2

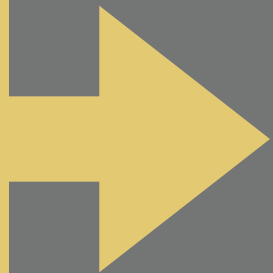
Remove the chicken back from the pan, briefly, then deglaze the pan with the sake. Scrape the pan to “release the fond,” or, more plainly, to get all the tasty brown bits off the bottom. Return the chicken to the pan, set it over a medium-hot stove, and add the remaining ingredients.

<http://luckypeach.com/recipes/momofuku-ramen-2-0/>

Ramen

ingredients

- tare



Step 3

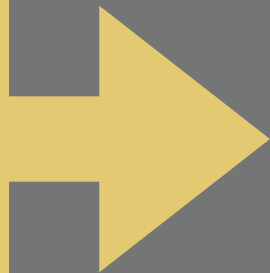
Lower the heat to get the contents of the pot to reach the barest of simmers. Keep it there for an hour and a half. The idea is not reduction, but infusion: you want to get all the bacon and roasted-chicken flavor into the liquid.

<http://luckypeach.com/recipes/momofuku-ramen-2-0/>

Ramen

ingredients

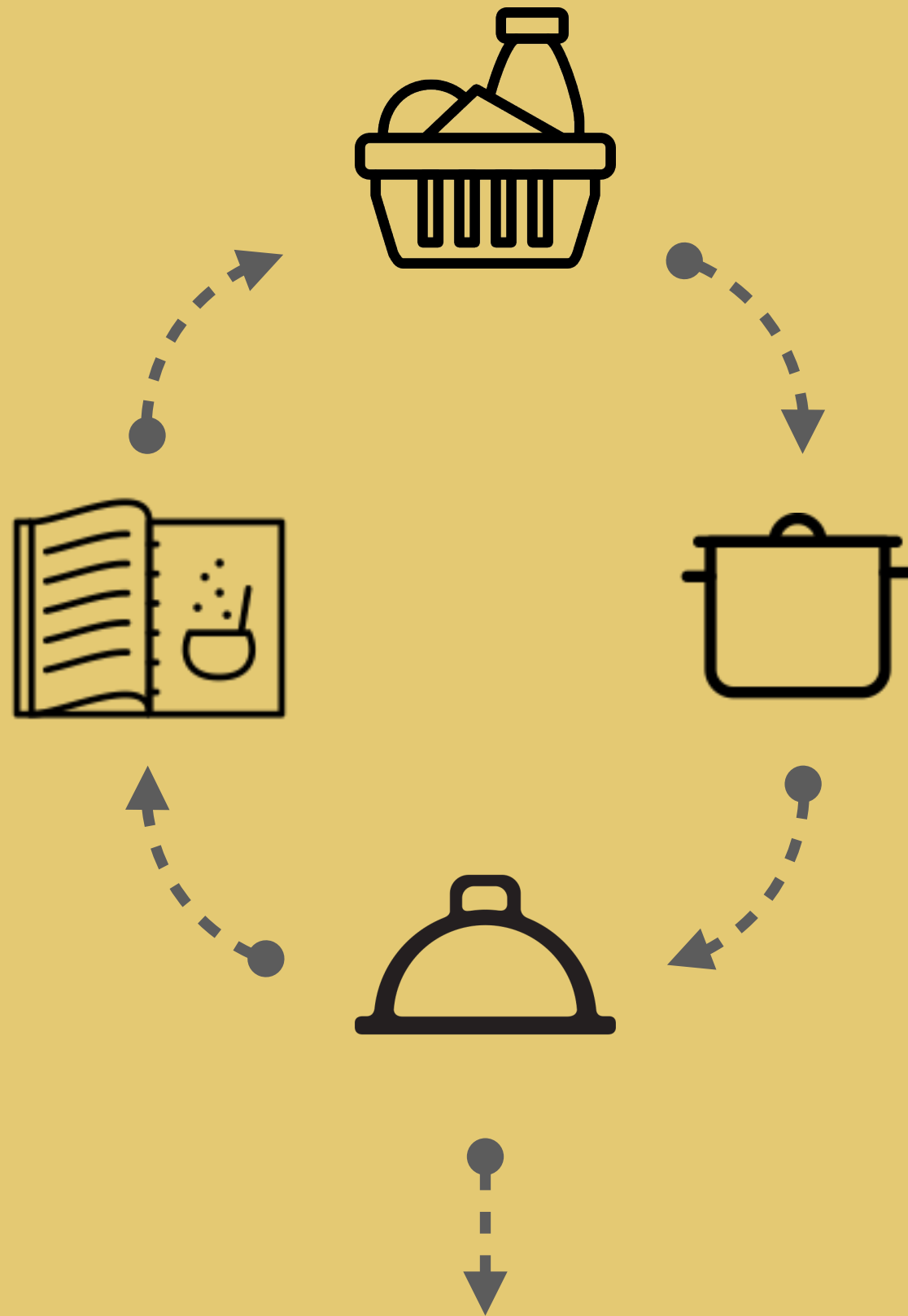
- tare



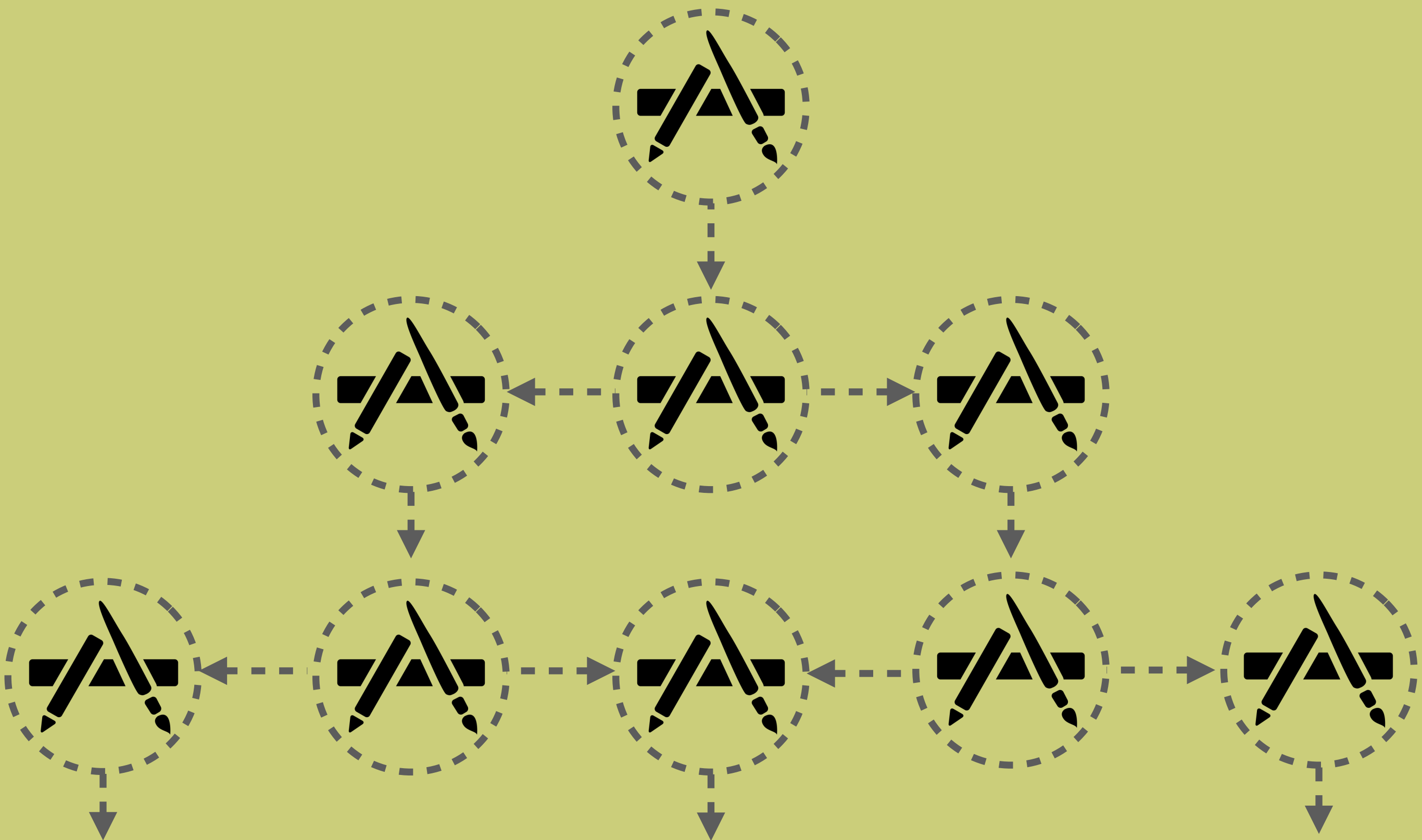
Step 4

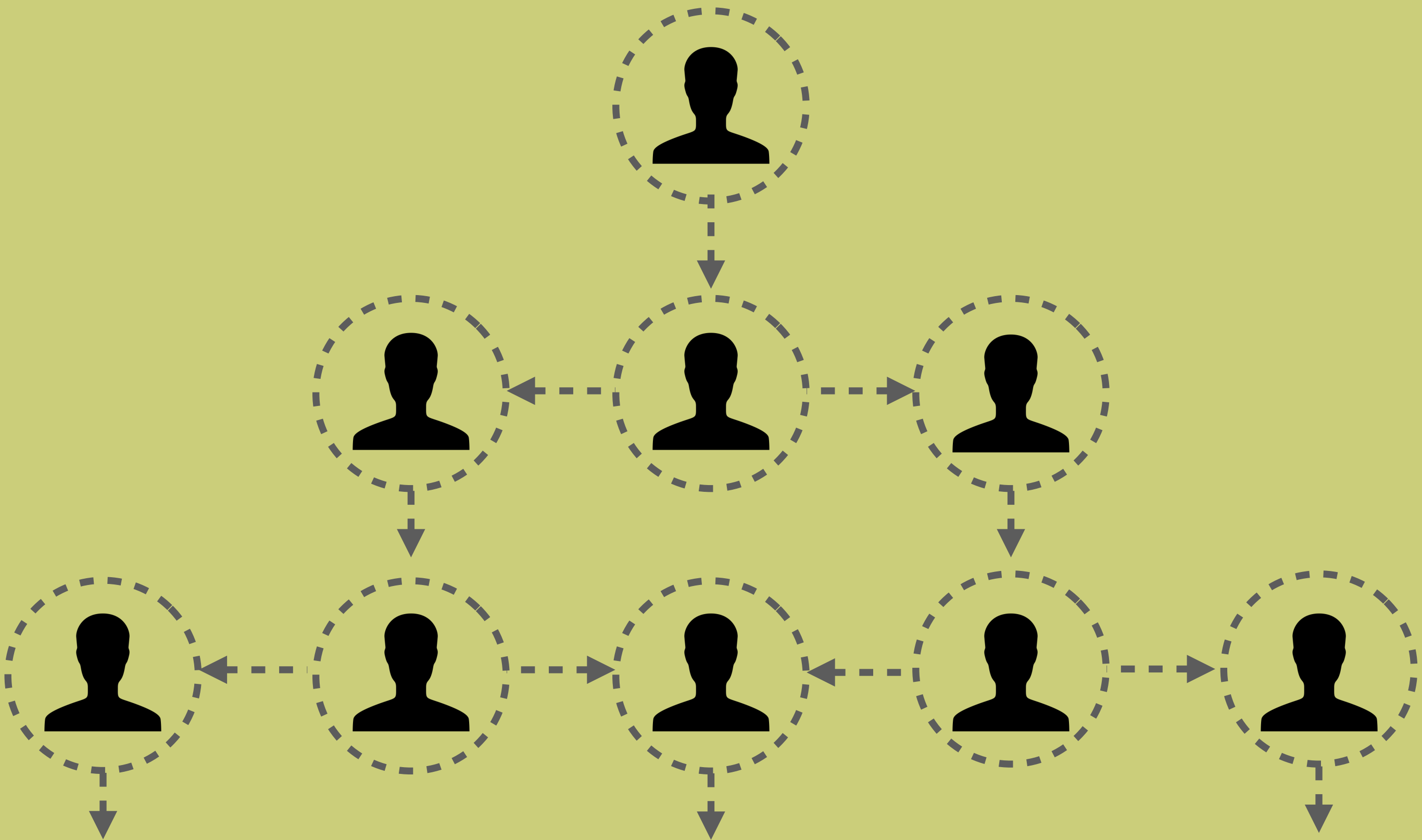
Strain the meat and bone out of the tare and discard them; put the tare in the fridge to chill. When the fat solidifies and rises to the top, remove it; it can be used (along with additional, supplemental bacon fat) to finish bowls of soup. The tare is now ready to use.

<http://luckypeach.com/recipes/momofuku-ramen-2-0/>



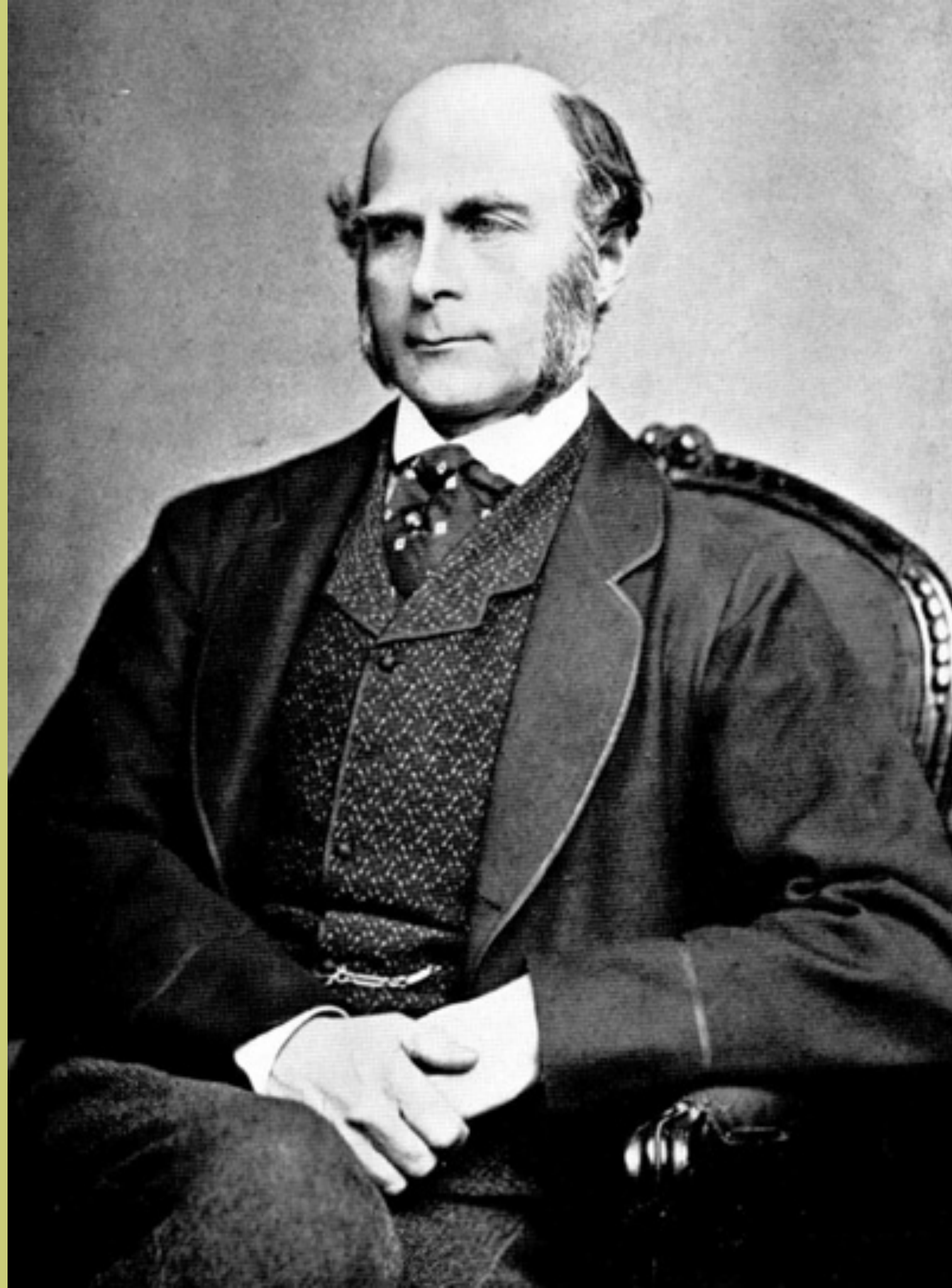






Sir Francis Galton

1822 - 1911



A NEW YORK TIMES BUSINESS BESTSELLER

"As entertaining and thought-provoking as *The Tipping Point* by Malcolm Gladwell. . . . *The Wisdom of Crowds* ranges far and wide."

—*The Boston Globe*

THE WISDOM OF CROWDS

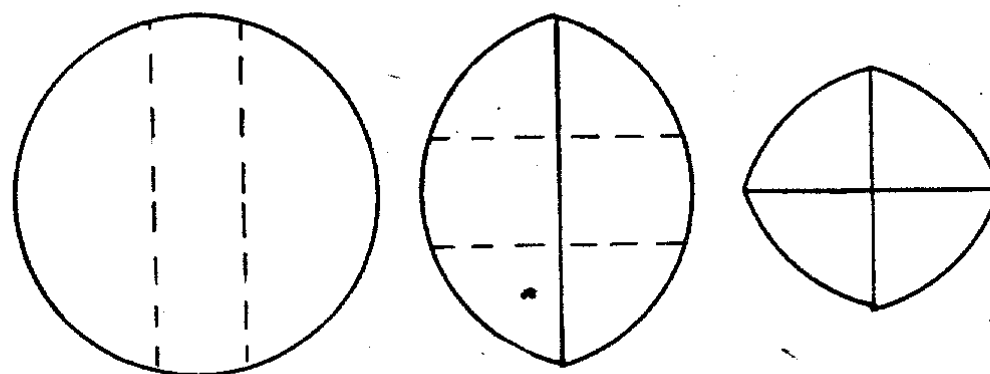
JAMES
SUROWIECKI

WITH A NEW AFTERWORD BY THE AUTHOR



Cutting a Round Cake on Scientific Principles.

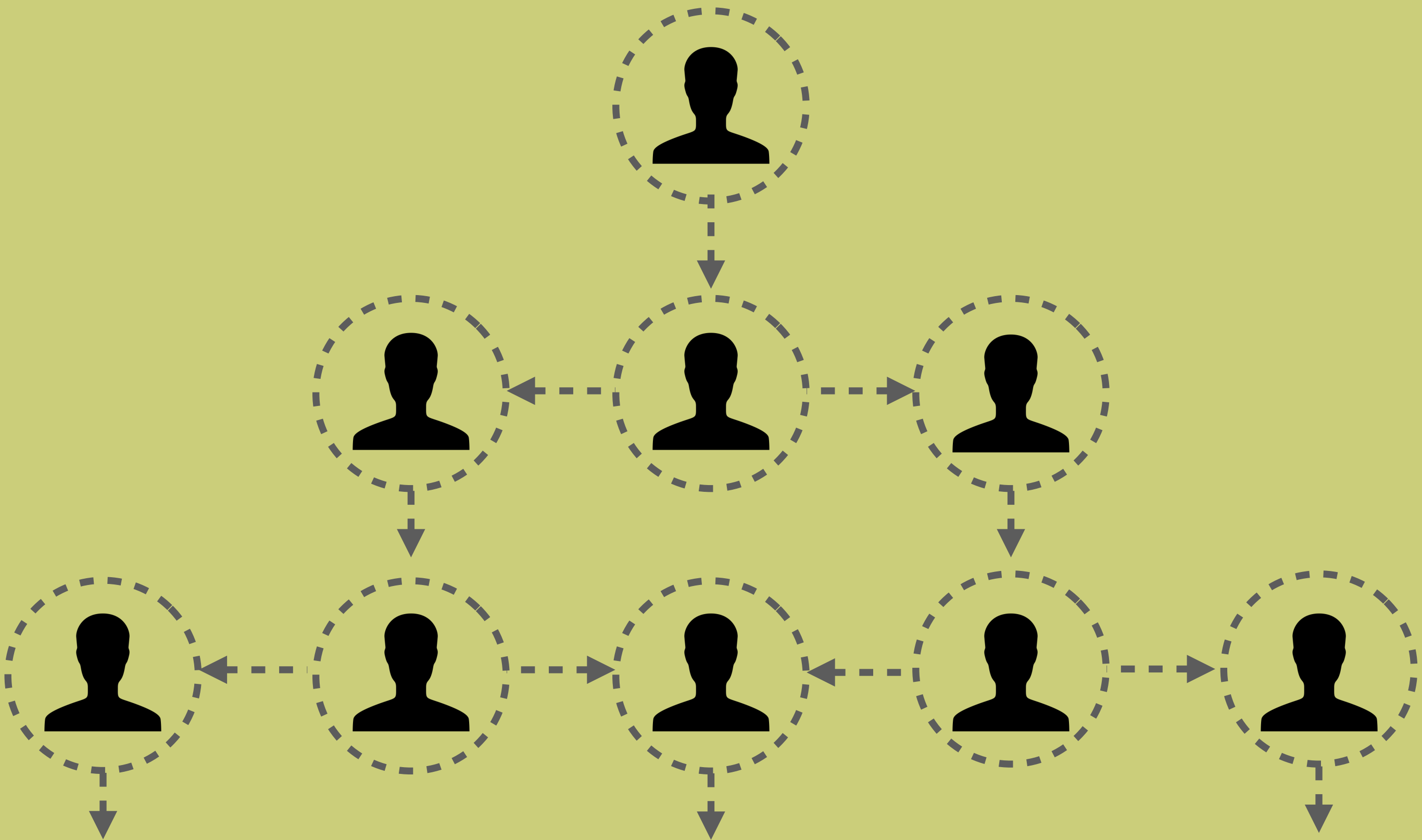
CHRISTMAS suggests cakes, and these the wish on my part to describe a method of cutting them that I have recently devised to my own amusement and satisfaction. The problem to be solved was, "given a round tea-cake of some 5 inches across, and two persons of moderate appetite to eat it, in what way should it be cut so as to leave a minimum of exposed surface to become dry?" The ordinary method of cutting out a wedge is very faulty in this respect. The results to be aimed at are so to cut the cake that the remaining portions shall fit together. Consequently the chords (or the arcs) of the circumferences

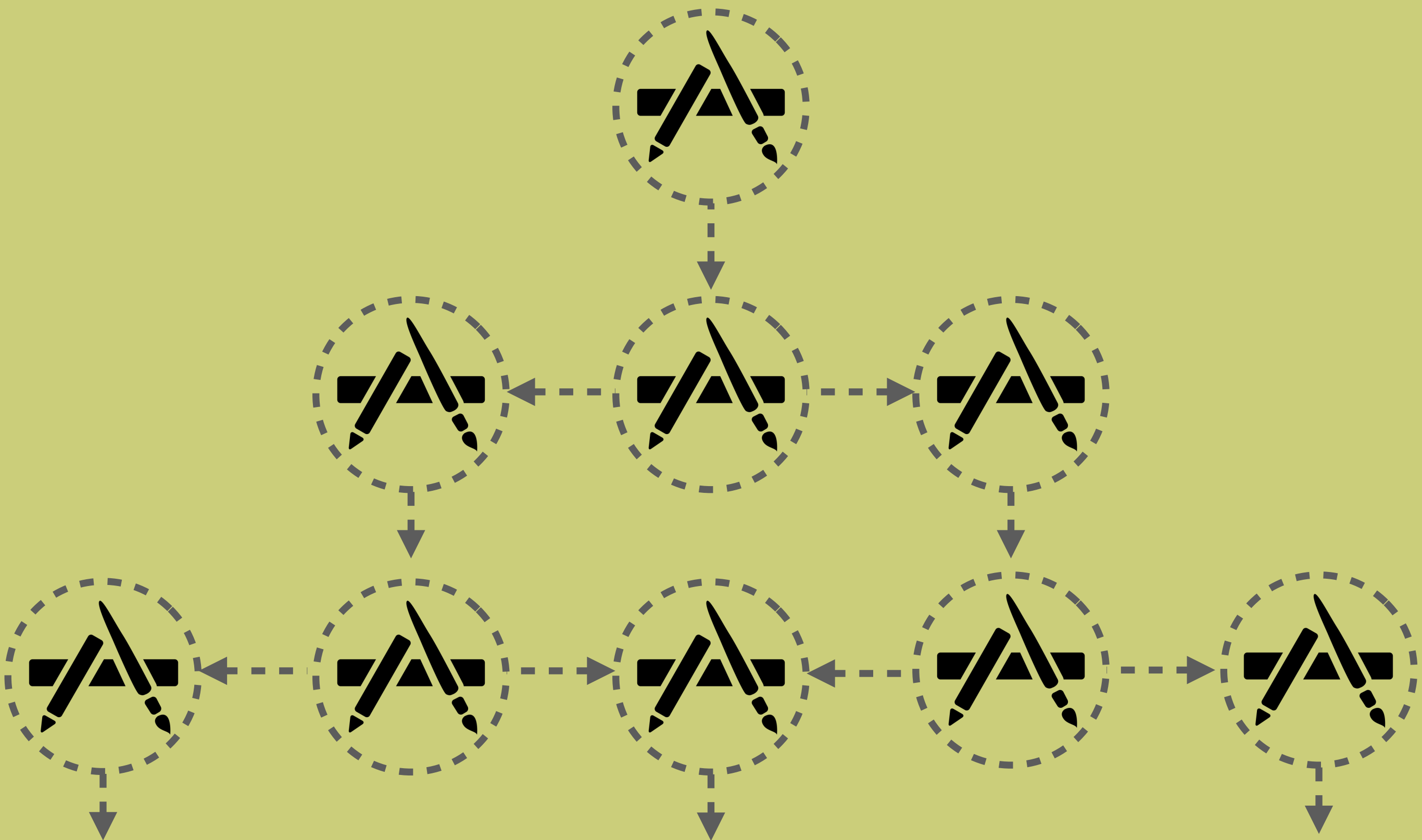


Broken straight lines show intended cuts. Ordinary straight lines show the cuts that have been made. The segments are kept in apposition by a common elastic band that encloses the whole. In the above figures about one-third of the area of the original disc is removed by each of the two successive operations.

of these portions must be equal. The direction of the first two vertical planes of section is unimportant; they may be parallel, as in the first figure, or they may enclose a wedge. The cuts shown on the figures represent those made with the intention of letting the cake last for three days, each successive operation having removed about one-third of the area of the original disc. A common india-rubber band embraces the whole and keeps its segments together.

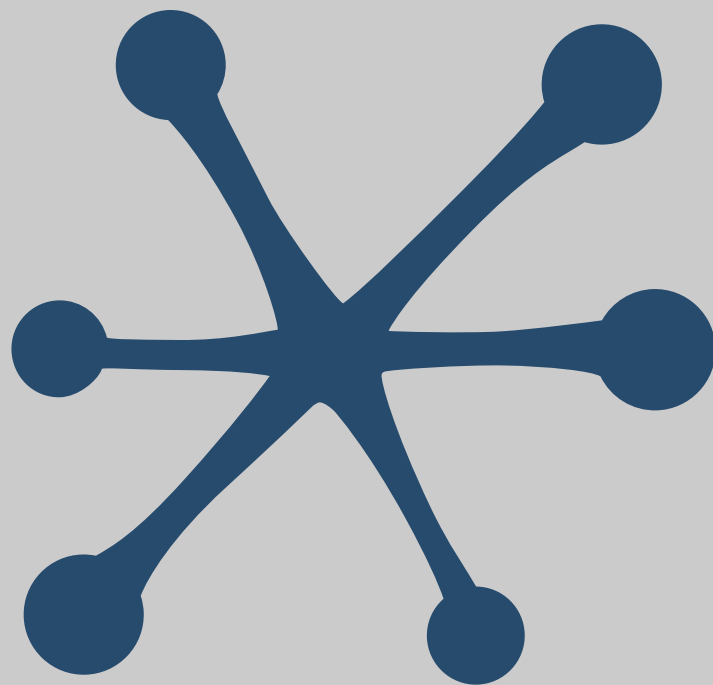
F. G.





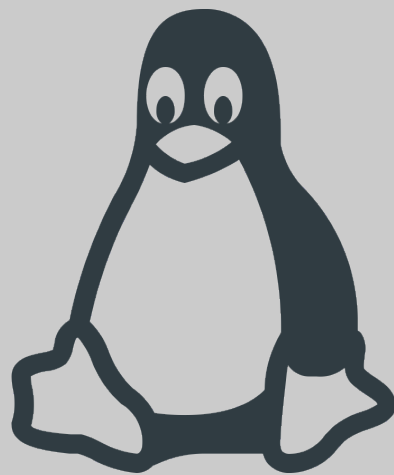
Problems In Hardware Development

- Secretive Development
- Customized Coupled Hardware
- Isolated Development Teams



Nerves Project

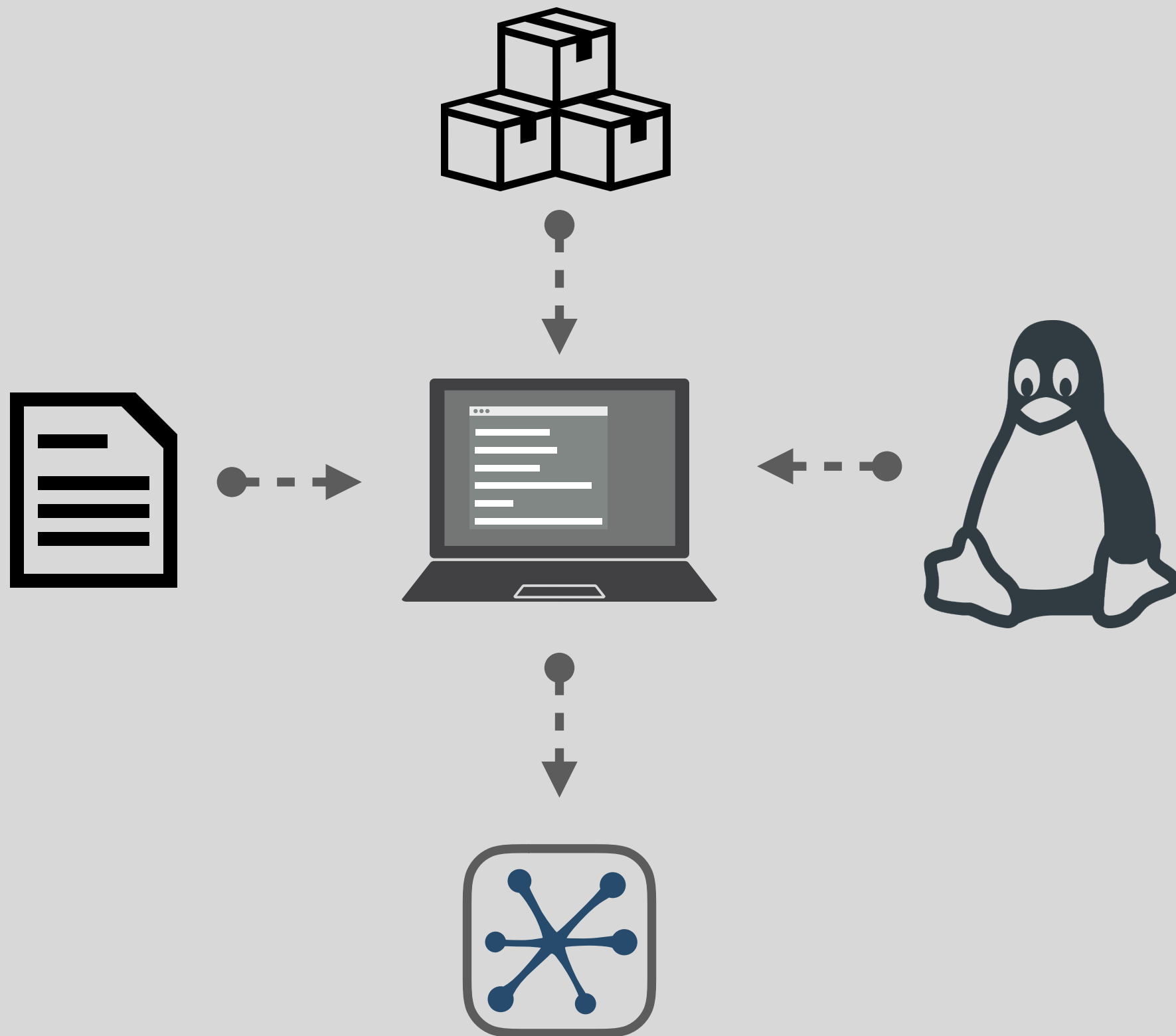
Nerves Runtime



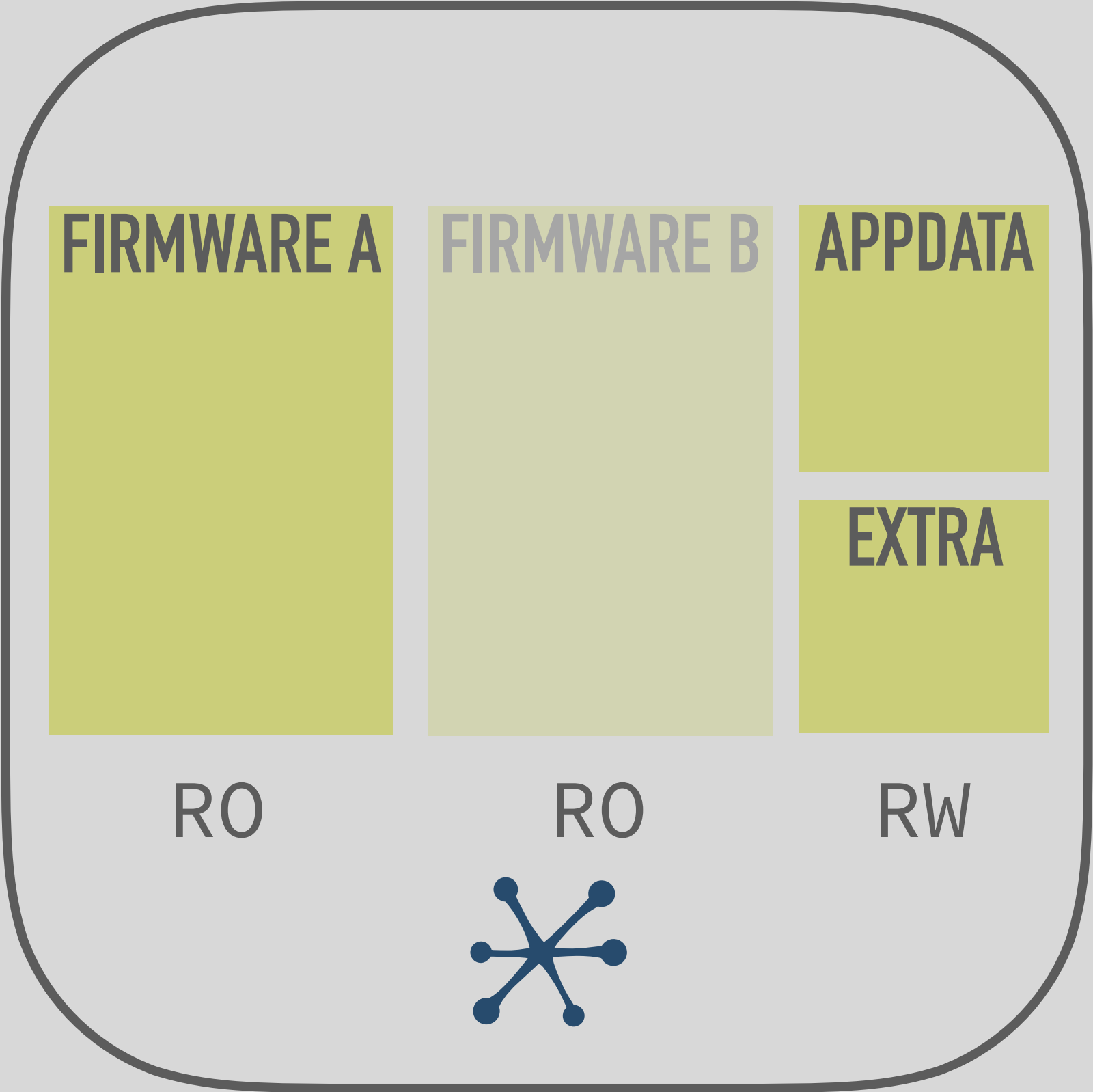
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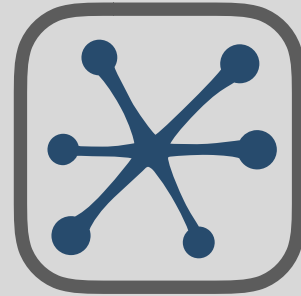
Nerves Compiler



Nerves Platform

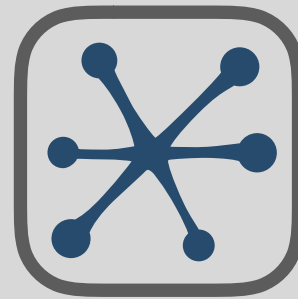


Nerves Platform



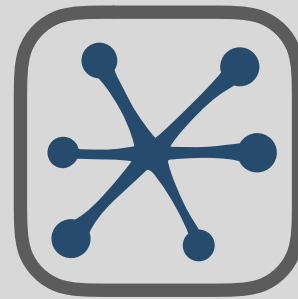
- Raspberry Pi 1, 2, 3
- Raspberry Pi Zero / Zero W
- Linkit Smart Duo
- BeagleBone Black / Green
- Lego EV3

Nerves Platform



<https://hexdocs.pm/nerves/targets.html#supporting-new-target-hardware>

Nerves Platform



```
1. root@38144b616852: /o/nerves_system_linkit (docker)
/o/nerves_system_linkit/./config - Buildroot 2016.02 Configuration

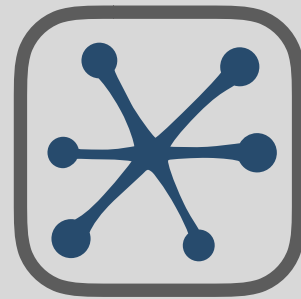
Buildroot 2016.02 Configuration
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenu ----).
Highlighted letters are hotkeys. Pressing <Y> selectes a feature, while <N> will
exclude a feature. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend:
[*] feature is selected [ ] feature is excluded

Target options --->
Build options --->
Toolchain --->
System configuration --->
Kernel --->
Target packages --->
Filesystem images --->
Bootloaders --->
Host utilities --->
Legacy config options --->

[+]

<Select> < Exit > < Help > < Save > < Load >
```

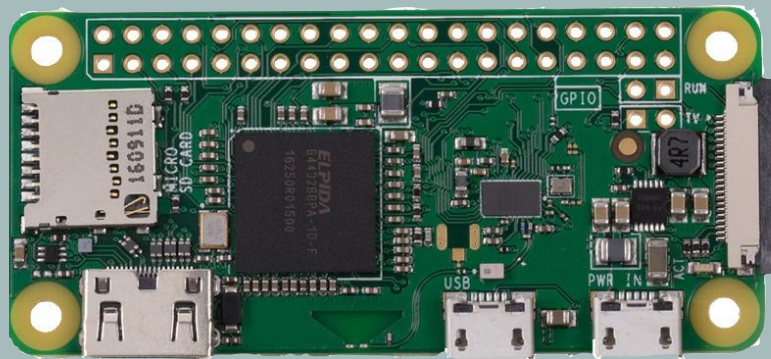
Nerves Platform



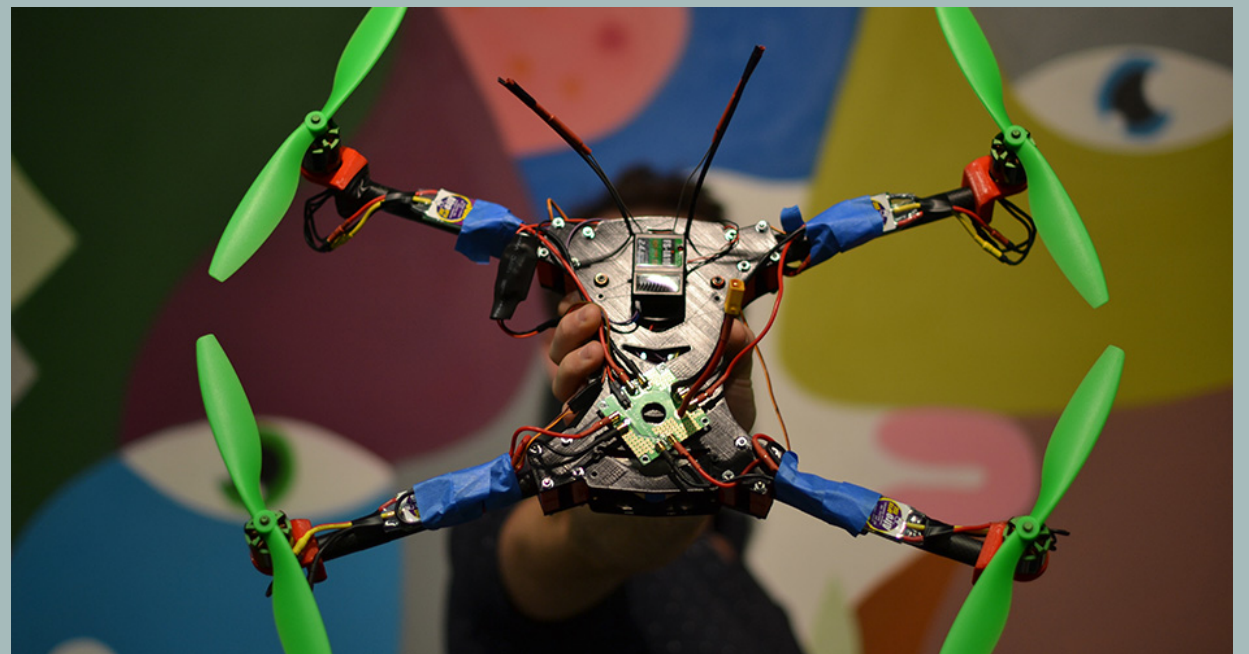
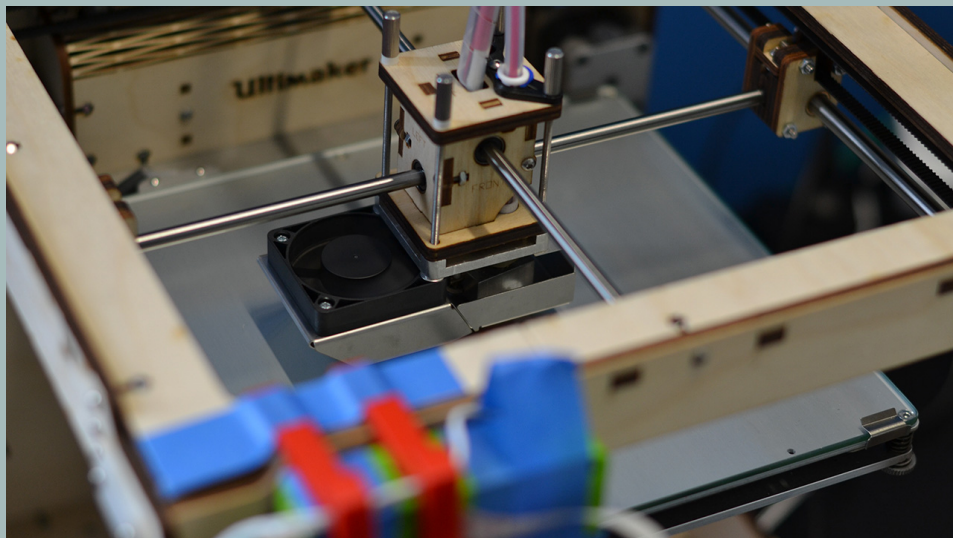
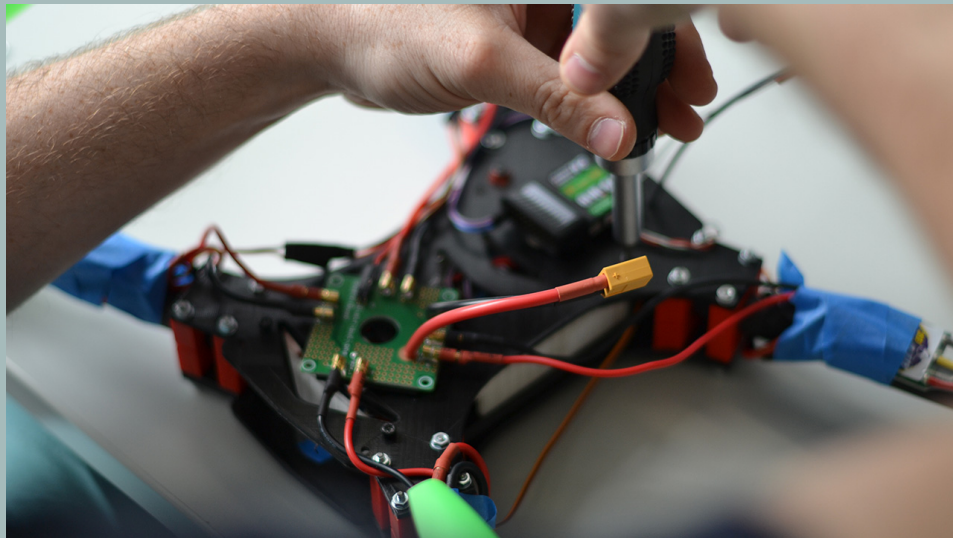
- root filesystem additions
- c / c++

DEMO

Nerves For Makers



Nerves For Makers



<https://github.com/elicopter>

Nerves For Makers

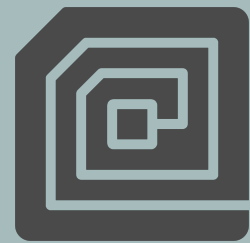


<https://github.com/tverlaan/brew>

Nerves For Makers



Nerves In Production

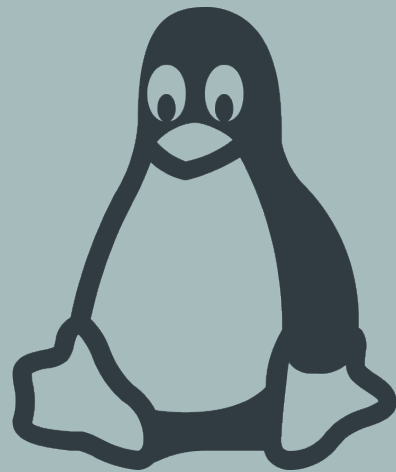


LE TOTE

Nerves In Production

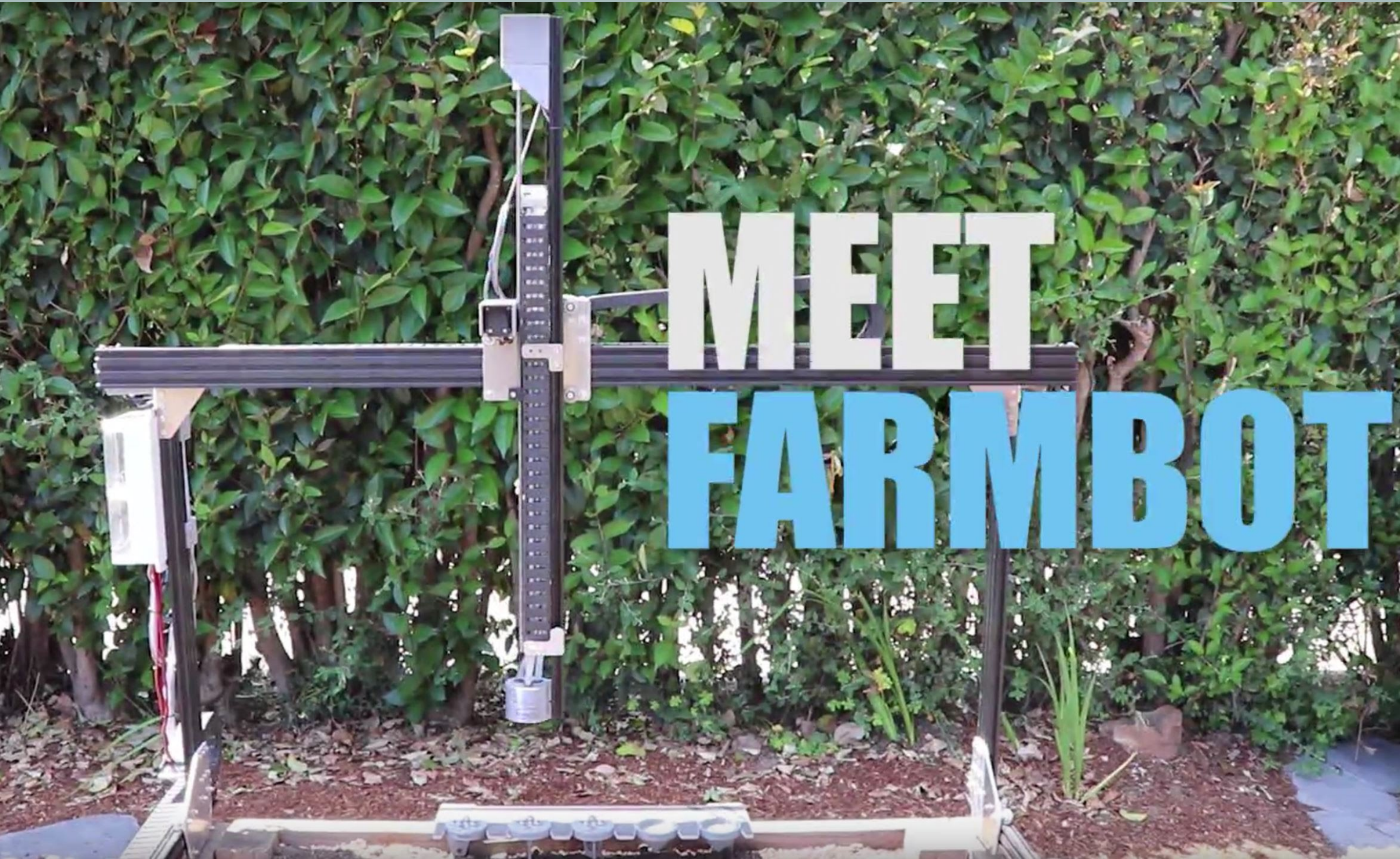
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Nerves System



- Webkit
- QT
- Serial Drivers

Nerves In Production

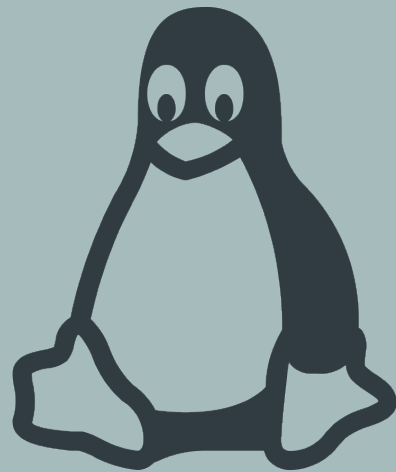


MEET
FARMBOT

Nerves In Production

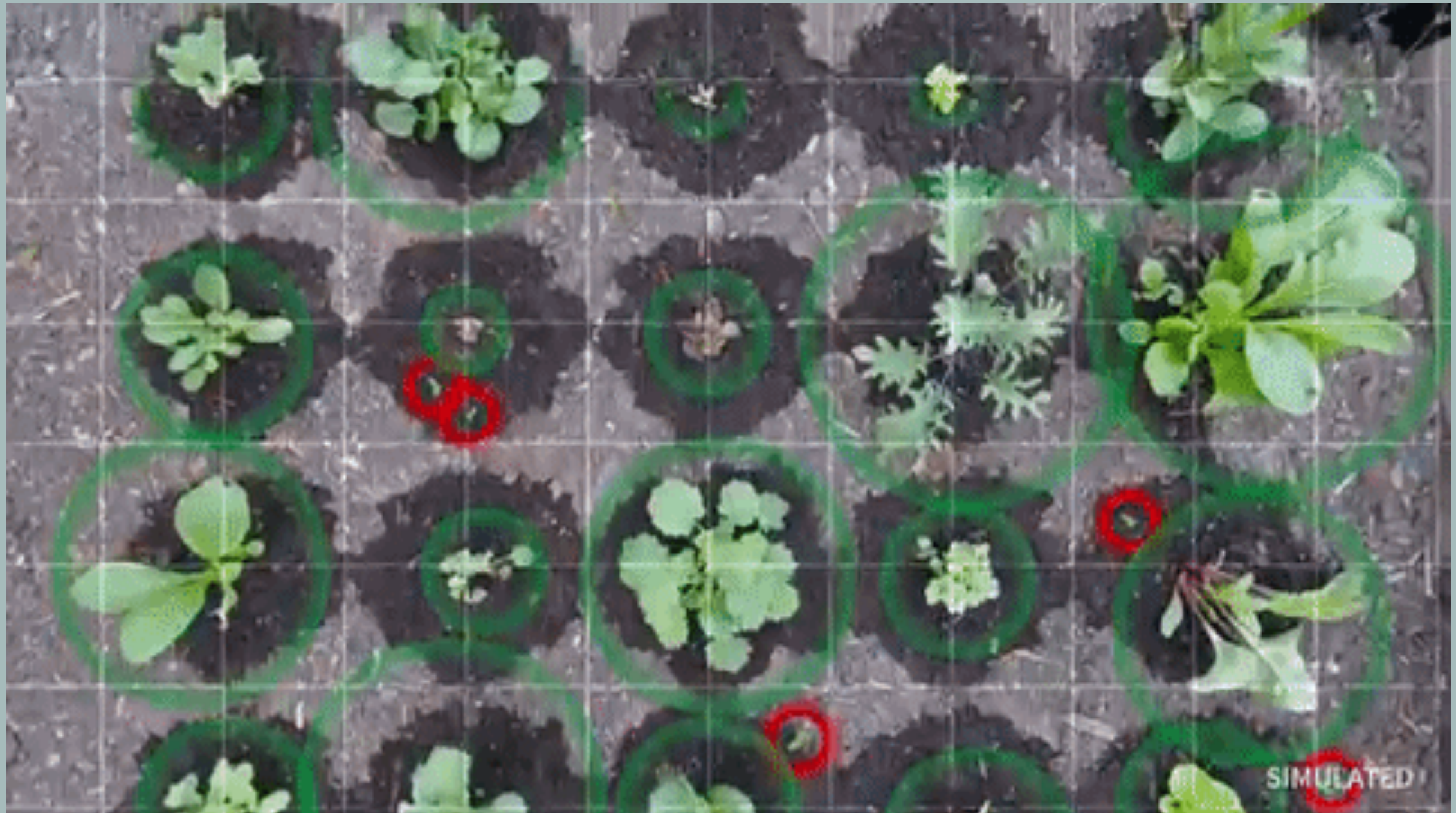


Nerves Platform



- Serial Drivers
- OpenCV
- Hostapd (Host access point daemon)

Nerves In Production



Getting Started

Getting Started



Q search

PAGES
MODULES

API Reference
Installation
Getting Started

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Introduction
Common Terms
Creating a New Nerves App
Building and Deploying
Firmware

Getting Started

Introduction

Nerves defines an entirely new way to build embedded systems using Elixir. It is specifically designed for embedded systems, not desktop or server systems. You can think of Nerves as containing three parts:


Platform - a customized, minimal Buildroot-derived Linux that boots directly to the BEAM VM.

Framework - ready-to-go library of Elixir modules to get you up and running quickly.

Tooling - powerful command-line tools to manage builds, update firmware, configure devices, and more.

Taken together, the Nerves platform, framework, and tooling provide a highly specialized environment for using Elixir to build advanced embedded devices.

Getting Started

 **nerves-project / nerves-examples**

Watch 9

Star 103

Fork 48

<> Code

Issues 5

Pull requests 2

Projects 0

Wiki

Settings

Insights

A couple small examples to demonstrate using Nerves

Edit

Add topics

175 commits

7 branches

0 releases

24 contributors

Branch: master


New pull request

Create new file











Upload files

Find file

Clone or download


 **axelclark** committed with **GregMefford** Update Hello WiFi config (#52) ...

Latest commit 95f53e1 5 days ago

 blinky	Add missing config files for MIX_TARGET=host	12 days ago
 hello_gpio	Split out system dependencies	12 days ago
 hello_gpio_input	Split out system dependencies	12 days ago
 hello_leds	Add missing config files for MIX_TARGET=host	12 days ago
 hello_network	Split out system dependencies	12 days ago
 hello_phoenix	Split out system dependencies	12 days ago
 hello_wifi	Update Hello WiFi config (#52)	5 days ago
 neopixel	Split out system dependencies	12 days ago
 .travis.yml	Only test neopixel on rpi targets	8 days ago
 README.md	Update the top-level README	3 months ago

Libraries

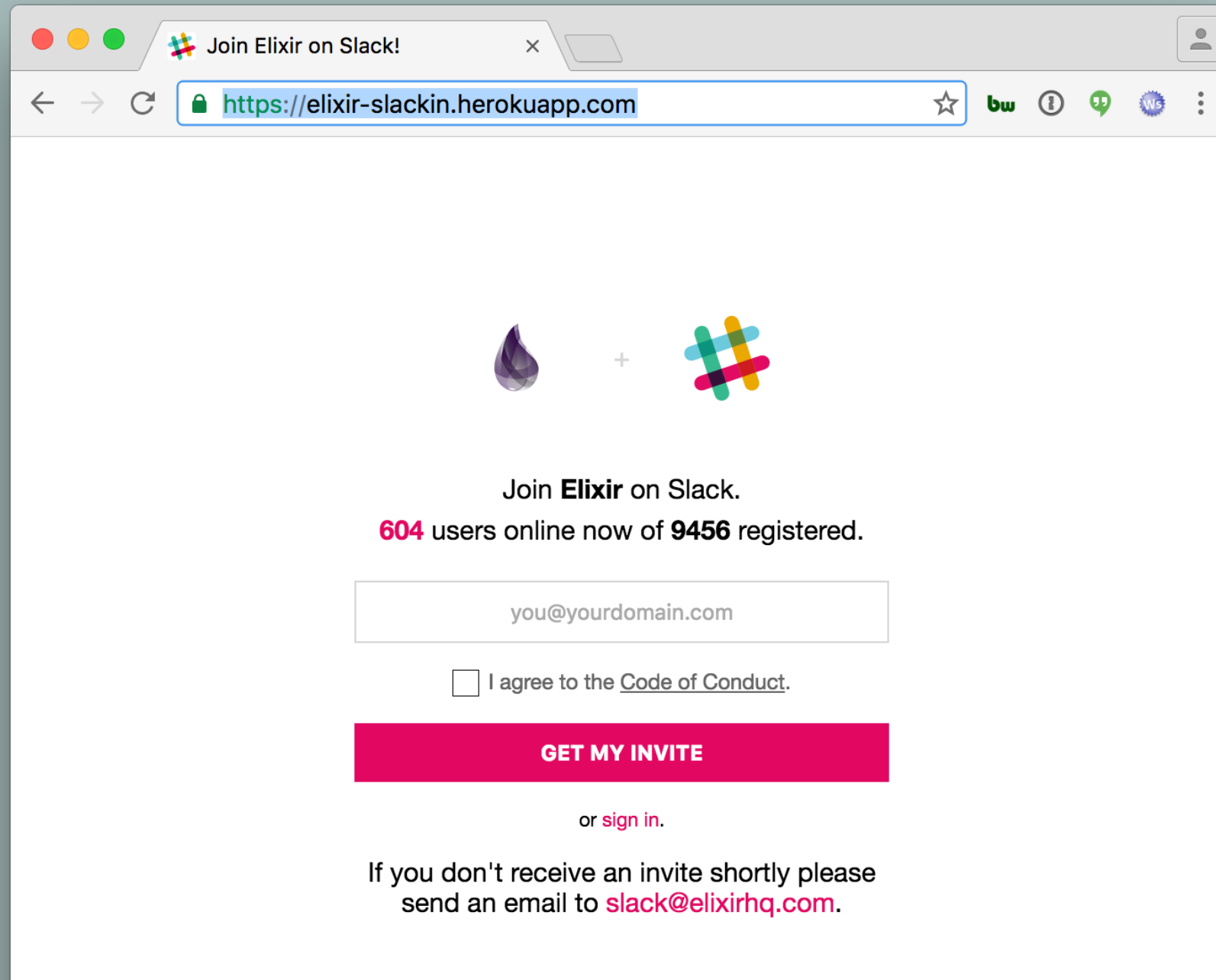
nerves-project.org/libraries/



HomeGet startedNewsWatchCodeLibraries

Community libraries

- **Chromecast** - A library for monitoring and controlling a [Chromecast](#)
- **elixir_ale** - Interact with hardware in Elixir - GPIOs, I2C and SPI
- **firmata** Control Arduino and other devices that work with the Firmata protocol
- **gen_mqtt** - Turning processes into MQTT clients
- **hmc5883l** - OTP application for reading the HMC5883L 3-axis magnetometer
- **Lifx** - A Client for [Lifx](#) LAN API
- **mDNS** - A simple [mDNS](#) (zeroconf, bonjour) client for device discovery on your local network.
- **Movi** - A library for communicating with the [Audeme MOVI™ Voice Control Shield](#)
- **nerves_io_neopixel** - Drive WS2812B NeoPixel RGB LED strips from a Raspberry Pi
- **nerves_io_nfc** - Read NFC tags using LibNFC-compatible USB NFC readers
- **nerves_io_rc522** - Read NFC tags using the RC522 RFID module
- **nerves_ntp** - OTP application for synchronizing time using built-in `ntpd` command
- **Raven** - A Client for the [Rainforest Automation Raven USB SMCD](#)
- **SSDP** - Discover devices on your network that use the [Simple Service Discovery Protocol](#)
- **XGPS** - OTP application for reading data from GPS attach to UART/serial

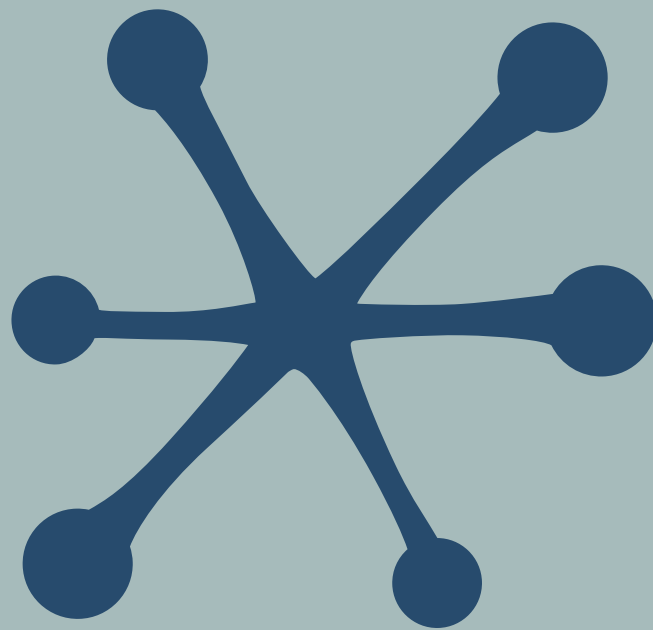


<https://elixir-slackin.herokuapp.com>

#nerves

LE TOTE

Community + Developers



Thank You

Justin Schneck
@mobileoverlord