

Introduction to Automating System Builds, Workflows, and Configuration Management with GitHub Actions

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June 29, 2021

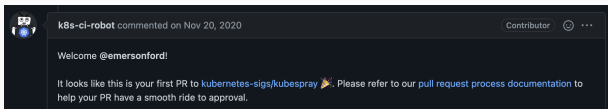
University of Utah — ITX Meeting

- Understanding automation
- How to automate with Github Actions
- Best practices of automation
- Q&A and related topics

What is automation?

Getting computers do things for you automatically

- building, testing, and publishing artifacts
- linting and auto formatting code
- deploying configurations
- welcome new contributors to your repo

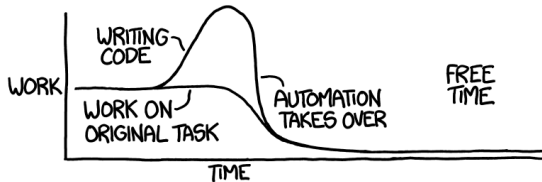


Why automate?

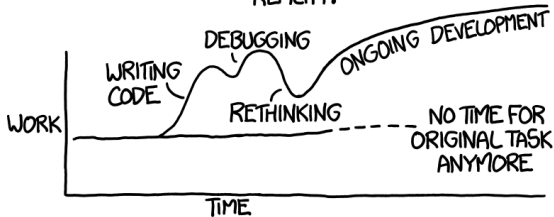
- saves you time and headaches
- ensure consistent workflow runs
- improve visibility, handoff, and usability
- it scales

"I SPEND A LOT OF TIME ON THIS TASK.
I SHOULD WRITE A PROGRAM AUTOMATING IT!"

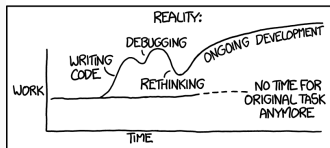
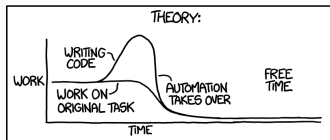
THEORY:



REALITY:



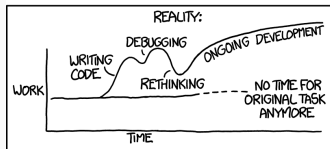
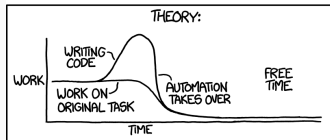
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HOW LONG CAN YOU WORK ON MAKING A ROUTINE TASK MORE
EFFICIENT BEFORE YOU'RE SPENDING MORE TIME THAN YOU SAVE?
(ACROSS FIVE YEARS)

		HOW OFTEN YOU DO THE TASK					
		50/DAY	5/DAY	DAILY	WEEKLY	MONTHLY	YEARLY
HOW MUCH TIME YOU SHAVE OFF	1 SECOND	1 DAY	2 HOURS	30 MINUTES	4 MINUTES	1 MINUTE	5 SECONDS
	5 SECONDS	5 DAYS	12 HOURS	2 HOURS	21 MINUTES	5 MINUTES	25 SECONDS
	30 SECONDS	4 WEEKS	3 DAYS	12 HOURS	2 HOURS	30 MINUTES	2 MINUTES
	1 MINUTE	8 WEEKS	6 DAYS	1 DAY	4 HOURS	1 HOUR	5 MINUTES
	5 MINUTES	9 MONTHS	4 WEEKS	6 DAYS	21 HOURS	5 HOURS	25 MINUTES
	30 MINUTES		6 MONTHS	5 WEEKS	5 DAYS	1 DAY	2 HOURS
	1 HOUR		10 MONTHS	2 MONTHS	10 DAYS	2 DAYS	5 HOURS
	6 HOURS				2 MONTHS	2 WEEKS	1 DAY
	1 DAY					8 WEEKS	5 DAYS

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HOW MUCH TIME YOU SHAVE OFF

CHECK IT OUT—I MADE A FULLY AUTOMATED DATA PIPELINE THAT COLLECTS AND PROCESSES ALL THE INFORMATION WE NEED



IS IT A GRANT HOUSE OF CARDS BUILT FROM RANDOM SCRIPTS THAT WILL ALL COMPLETELY COLLAPSE THE MOMENT ANY INPUT DOES ANYTHING WEIRD?



IT... MIGHT NOT BE.

I GUESS THAT'S SOMETHING WHOOPS, JUST COLLAPSED. HANG ON, I CAN PATCH IT.

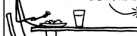


CAN YOU PASS THE SALT?



I SAID—I KNOW I'M DEVELOPING A SYSTEM TO PASS YOU ARBITRARY CONDIMENTS. IT'S BEEN 20 MINUTES!

IT'LL SAVE TIME IN THE LONG RUN!



WHAT DO YOU DO?

I MAKE TOOLS THAT MAKE TOOLS



...THAT MONITOR CODE THAT DEPLOYS TOOLS THAT BUILD TOOLS FOR DEPLOYING MONITORS...



20 MINUTES LATER...

...FOR MONITORING DEPLOYMENT OF TOOLS FOR— BUT WHAT'S IT ALL FOR?

HONESTLY, NO IDEA. FORM, PROBABLY.



THE #1 PROGRAMMER EXCUSE FOR LEGITIMATELY SLACKING OFF:

"MY CODE'S COMPILING."

HEY! GET BACK TO WORK!

OH, CARRY ON.

COMPLAINING!

OH, CARRY ON.



How to Automate