My favorite XKCD comics
ROMANCE, SARCASM, MATH, AND LANGUAGE

Author/Artist: Randall Munroe

Background: degree in physics

What: xkcd, a webcomic, no meaning to the name "X" "K" "C" "D"
Topics

There are many topics Mr. Munroe discusses:

- Math!
- Astronomy
- Physics
- The Internet
- Graphs!
- Social norms
- Computer Science! ****
- Many others
A SUBSET OF MY FAVORITES, IN NO ORDER

1: Exploits of a Mom

MO: Her daughter is named Help I'm trapped in a driver's license factory.
This is Git. It tracks collaborative work on projects through a beautiful distributed graph theory tree model.

Cool. How do we use it?

No idea. Just memorize these shell commands and type them to sync up. If you get errors, save your work elsewhere, delete the project, and download a fresh copy.

Git - this is so appropriate!
Machine learning

This is your machine learning system?

Yup! You pour the data into this big pile of linear algebra, then collect the answers on the other side.

What if the answers are wrong?

Just stir the pile until they start looking right.
AI

Speaking of ML....

To complete your registration, please tell us whether or not this image contains a stop sign:

**NO**  **YES**

Answer quickly—our self-driving car is almost at the intersection.

So much of “AI” is just figuring out ways to offload work onto random strangers.
And speaking of crowdsourcing...
Classification vs. lookup

5 years??

When a user takes a photo, the app should check whether they’re in a national park...

Sure, easy GIS lookup. Gimme a few hours.

...and check whether the photo is of a bird.

I’ll need a research team and five years.

In CS, it can be hard to explain the difference between the easy and the virtually impossible.
YOU KNOW THIS METAL RECTANGLE FULL OF LITTLE LIGHTS?

Yeah.

I SPEND MOST OF MY LIFE PRESSING BUTTONS TO MAKE THE PATTERN OF LIGHTS CHANGE HOWEVER I WANT.

Sounds good.

BUT TODAY, THE PATTERN OF LIGHTS IS ALL WRONG!

Oh God! Try pressing more buttons!

It's not helping!
Passwords

Through 20 years of effort, we've successfully trained everyone to use passwords that are hard for humans to remember, but easy for computers to guess.
Real Programmers

nano? Real programmers use emacs.

Hey. Real programmers use vim.

Well, real programmers use ed.

No, real programmers use cat.

Real programmers use a magnetized needle and a steady hand.

Excuse me, but real programmers use butterflies.

They open their hands and let the delicate wings flap once.

The disturbance ripples outward, changing the flow of the eddy currents in the upper atmosphere.

These cause momentary pockets of higher-pressure air to form.

Which act as lenses that deflect incoming cosmic rays, focusing them to strike the drive platter and flip the desired bit.

Nice. ‘Course, there’s an Emacs command to do that. Oh yeah! Good ol’ C-x M-c M-butterfly...

Damn it, Emacs.
Workflow

Speaking of emacs:

changes in version 10.17:
the CPU no longer overheats
when you hold down spacebar.

comments:

LongtimeUser4 writes:
this update broke my workflow!
my control key is hard to reach,
so I hold spacebar instead, and I
configured emacs to interpret a
rapid temperature rise as "control".

admin writes:
that's horrifying.

LongtimeUser4 writes:
look, my setup works for me.
just add an option to reenable
spacebar heating.

every change breaks someone's workflow.
Compiling

Maybe next: "Training"
Virus venn diagram

- Computer problems that make people say "Maybe it has a virus?"
- Computer problems caused by viruses
Rob!
You use Unix!

Come quick!

To disarm the bomb, simply enter a valid tar command on your first try. No googling. You have ten seconds.

#_#

...Rob?

I’m so sorry.
Cautionary tale about Linux

**LINUX: A TRUE STORY: WEEK ONE**
Hey, it's your cousin. I got a new computer but don't want Windows. Can you help me install "Linux"?

Sure.

**WEEK TWO**
It says my XORG is broken. What's an "XORG"? Where can I look that up?

Hmm, lemme show you man pages.

**WEEK SIX**
Due to auto-config issues, I'm leaving Ubuntu for Debian.

UH or Gentoo. UH OH.

**WEEK TWELVE**
You haven't answered your phone in days. Can't sleep. Must compile kernel.

I'm too late.

Parents: Talk to your kids about Linux... before somebody else does.
Ah, Linux

While you're doing the surgery, can you also implant this in my arm?

A USB port? Just wire it up to some nerves.

...this won't let your brain control USB devices, you know. Sure - I just want the hardware.

The rest is software; I'm sure there will be a project to patch together support eventually.

Ah - you're a Linux user, I see. Yeah; how'd you know?
Linux Support......

Sometimes one must wonder how many users need a particular feature!
SUDO

Thanks, Rafi, for the shirt!
Operating Systems
The Cloud

1. What's this?
   - The Cloud.
   - Yeah, but everyone buys server time from everyone else. In the end, they're all getting it here.

2. Huh? I always thought "The Cloud" was a huge, amorphous network of servers somewhere.
   - The Cloud.
   - Yeah, but everyone buys server time from everyone else. In the end, they're all getting it here.

   - There's a lot of caching.

4. Should the cord be stretched across the room like this?
   - Of course, it has to reach the server, and the server is over there.

5. What if someone trips on it?
   - Who would want to do that? It sounds unpleasant.
   - Uh, sometimes people do stuff by accident. I don't think I know anybody like that.
Someone wrong?

Are you coming to bed?

I can't. This is important.

What?

Someone is wrong on the internet.
Server Names

Configure the network

Please enter the hostname for the system.

Hostname:

<Go back>

You've been staring at that screen a while.
Picking a good server name is important.

And yet you settled on "Caroline" for our daughter in like 15 seconds.

But this is a server. Besides, I had to—you were trying to name her "epidural."

Those were good drugs.
DEAR VARIOUS PARENTS, GRANDPARENTS, CO-WORKERS, AND OTHER "NOT COMPUTER PEOPLE."

WE DON'T MAGICALLY KNOW HOW TO DO EVERYTHING IN EVERY PROGRAM. WHEN WE HELP YOU, WE'RE USUALLY JUST DOING THIS:

START

FIND A MENU ITEM OR BUTTON WHICH LOOKS RELATED TO WHAT YOU WANT TO DO.

I CAN'T FIND ONE

PART ONE AT RANDOM.

I'VE TRIED THEM ALL.

OK

OK

CLICK IT.

NO

HAVE YOU BEEN TRYING THIS FOR OVER HALF AN HOUR?

YES

ASK SOMEONE FOR HELP OR GIVE UP.

NO

DID IT WORK?

YES

YOU'RE DONE!

NO

Google the name of the program plus a few words related to what you want to do. Follow any instructions.

PLEASE PRINT THIS FLOWCHART OUT AND TAPE IT NEAR YOUR SCREEN. CONGRATULATIONS; YOU'RE NOW THE LOCAL COMPUTER EXPERT!
Tech support by phone

...restart my computer? I know you have a script to follow, but the Uplink light on the modem is going off every few hours. The problem is between your office and the modem.

My computer has nothing to do with... OK, whatever, I restarted my computer.

It's still down, and even if it comes back, it's going to die again in a few hours, because your...

I don't have a startup menu. This is a HAIKU install, but that's not important.

HAIKU? It's an experimental OS that I... oh, never mind.

I'm sorry, but this won't get fixed until I talk to an engineer. Can you look around for someone wearing cargo pants, maybe a subway map on their wall?

There's a chick two phones over with a stuffed penguin doll and a poster of some bearded dude with swords.

Perfect. Can you put her on? Sure.

Hey, so sorry to bother you, but my connection... yeah, I see it. Lingering problems from a server move.

(doesn't care) Should be fixed now.

Thank you so much.

No problem. Hey, in the future, if you're on any tech support call, you can say the code word "shibboleet" at any point and you'll be automatically transferred to someone who knows a minimum of two programming languages.

Seriously? YUP. It's a backdoor put in by the geeks who built these phone support systems back in the 1990s. Don't tell anyone.

Oh my god, this is the greatest...

 What...
Computer Problems

You know this metal rectangle full of little lights?

Yeah.

I spend most of my life pressing buttons to make the pattern of lights change however I want. Sounds good.

But today, the pattern of lights is all wrong! Oh God! Try pressing more buttons! It's not helping!
WE'RE CONCERNED THAT SOME OF YOUR RESULTS MAY BE TAINTED BY THE FACT THAT YOUR HUMAN SUBJECTS ARE AWFUL.

WHAT DO YOU MEAN?

SEVERAL PARTICIPANTS IN YOUR DRUG TRIAL WERE ARRESTED FOR ARSON.

SIDE EFFECTS CAN BE UNPREDICTABLE.

THEY WERE IN THE CONTROL GROUP.

IN YOUR PRISONER'S DILEMMA STUDY, 80% OF THE PARTICIPANTS CHOSE TO BETRAY THEIR PARTNERS BEFORE THE EXPERIMENTER HAD A CHANCE TO TELL THEM ABOUT THE REWARD.

DEFINITELY TROUBLING.

IN ONE EXPERIMENT, YOUR SUBJECTS REPEATEDLY GAVE ELECTRIC SHOCKS TO A STRANGER IN ANOTHER ROOM.

THAT'S A FAMOUS PSYCHOLOGICAL—THIS WAS A STUDY OF MOISTURIZING CREAMS!

YES, WE'RE NOT SURE HOW THEY SNUCK IN ALL THAT EQUIPMENT.
Student nightmare...

**Your projects are due today by 5:00 PM.**

...I didn't even know we had one.

**Wait. I don't think I've been attending. I must have forgotten I had this class. SHIT SHIT SHIT.**

**Okay, I'm gonna fail. Will it hold me back? I just want to get out of here. I thought I'd finished my requirements already.**

**In fact, I think I remember graduating. What the hell is—**

Fun Fact: Decades from now, with school a distant memory, you'll _still_ be having this dream.
Can't vocalize this one:

MO: If you get an 11/100 on a CS test, but you claim it should be counted as a 'C', they'll probably decide you deserve the upgrade.
DFS

PREPARING FOR A DATE:
WHAT SITUATIONS MIGHT I PREPARE FOR?
1) MEDICAL EMERGENCY
2) DANCING
3) FOOD TOO EXPENSIVE

OKAY, WHAT KINDS OF EMERGENCIES CAN HAPPEN?
1) SNAKEBITE
2) LIGHTNING STROKE
3) FALL FROM CHAIR

HMM, WHICH SNAKES ARE DANGEROUS? LET'S SEE...
1) CORN SNAKE
2) GARTER SNAKE
3) COPPERHEAD

THE RESEARCH COMPARING SNAKE VENOMS IS SCATTERED AND INCONSISTENT. I'LL MAKE A SPREADSHEET TO ORGANIZE IT.

I'M HERE TO PICK YOU UP. YOU'RE NOT DRESSED.

BY THE WAY, THE INLAND TAIPAN HAS THE DEADLIEST VENOM OF ANY SNAKE!

I REALLY NEED TO STOP USING DEPTH-FIRST SEARCHES.
Non-traveling Salesman problem...?
Standards...

As a project wears on, standards for success slip lower and lower.

0 hours
Okay, I should be able to dual-boot BSD soon.

6 hours
I'll be happy if I can get the system working like it was when I started.

10 hours
Well, the desktop's a lost cause, but I think I can fix the problems the laptop's developed.

24 hours
If we're lucky, the sharks will stay away until we reach shallow water.
If we make it back alive, you're never upgrading anything again.
What if there was a robot apocalypse? How long would humanity last?

https://what-if.xkcd.com/5/