

CS50 Presents

# CS50x Puzzle Day 2022

with thanks to our friends at Meta

## April 1 – April 4, 2022

- This packet contains 10 puzzles. The first puzzle is an optional practice puzzle, to prepare you for subsequent puzzles. The next 8 puzzles are independent of one another. The final puzzle is a metapuzzle: it requires answers from the previous 8 puzzles in order to solve it.
- The answer to each puzzle (but not the metapuzzle!) is a single word or name in English.
- You may use the internet and any other resources at your disposal.
- You are encouraged (but not required) to work on a team with 1, 2, or 3 classmates or friends, either in person or online; if you gather in person, you must follow your local COVID-19 protocols.
- Take photos while you work on the puzzles (or screenshots of your team collaborating online)! Share them at <https://cs50.ly/photos> if you'd like!
- Submit your answers at <https://cs50.ly/submit> by 23:59 on Monday, 4 April 2022. If working on a team, only one member of your team should submit. If you submit multiple times, we'll consider your only most recent submission, which should contain all of your answers together.
- See <https://cs50.ly/puzzles> for all rules.
- Be sure to watch <https://cs50.ly/welcome> before starting. You might also find <http://puzzledpint.com/files/2415/7835/9513/CodeSheet-201912.pdf> useful!
- Have fun and good luck!

## Practice Puzzle: Look Up

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			Louis Armstrong	U.S.A.
			Juscelino Kubitschek de Oliveira	Brazil
			Rick Husband	U.S.A.
			Amado Nervo	Mexico
			Tenzing Norgay, Sir Edmund Hillary	Nepal
			John August Earl Bergstrom	U.S.A.
			Ben Elbert Douglas, Sr.	U.S.A.
			Guadalupe Victoria	Mexico
			Vicente Almandos Almonacid	Argentina
			William Mitchell	U.S.A.
			Edward Lawrence Logan	U.S.A.
			Francisco Bangoy	Philippines
			William P. Hobby	U.S.A.
			Abelardo L. Rodríguez	Mexico
			Luis Muñoz Marín	Puerto Rico
			Abraham Lincoln	U.S.A.
			Sukarno, Mohammad Hatta	Indonesia
			Albert Bond Lambert	U.S.A.
			John Wayne	U.S.A.
			Charles McGhee Tyson	U.S.A.

Answer: \_\_\_\_\_

Solution: <https://youtu.be/8oUozluQRio>

## #1: Harry Potter and The Off-By-One Error

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*Let's check the Installation Wizard's office safe! He might have left some clues for us there. Help us figure out the password - how did these quotes go again?*

-----,

Perish the thought that you, a circuit chip with computing power, would necessitate calling me, a mere student of this boarding school, a title of such respect reserved for people higher on the hierarchy than I.



-----

Through supernatural and mystical causes, this multi-fingered appendage that is made up of organic material which has unique properties for each instance can self-actualize by selecting an individual that only appeals to this particular object.



-----

In occasions of merry-making and gift-giving, an oft-overlooked present may very well be rectangular-shaped bags as there is no limit to their uses even if given a limitless amount of them.



-----

It is my current state of mind to inform the person that is my godson that he is the spitting image of his paternal parent's common unit of weight that is often used in describing heavy masses.





-----', -----  
-----', -----

As an educator of a complicated and intellectually taxing subject, it is within my prerogative to bequeath upon you peons the ability to capture a goddess that meddles with a person's destiny, titrate prestige, and certainly prevent the end of existence on this planet.



-----, -----?

I, as your rival figure, am here to inform you of your impending cooking at high temperatures in order to form a crispy crust while retaining juicy insides.



-----  
,  
-----

If one brings disorder to a rotund rubber tube then they are in for a world of horrible consequences - especially if they are a human within a taxonomic, supernatural group that have magical powers of which you and I are members of.



Answer: \_\_\_\_\_

## #2: If At First You Don't Succeed...

The walls of the Wand Division are covered in motivational posters, but you've barely read a few before a friendly voice startles you. "You see", the mage says, "we have an issue with morale around here. I keep trying to remind everyone that if they start their projects strong, everything else will fall into place, but they're just not paying attention."



----- (5)

Answer: \_\_\_\_\_

### #3: Input/Output

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*The GRAIL team uncovered this set of Inputs, but we can't seem to figure out what it's supposed to Output...*

**INPUT:** A FAMOUS CANADIAN SONGWRITER CURRENTLY IN HIS EIGHTIES

**INPUT:** BIRD BRAINIAC

**INPUT:** HOME TO A STATUE COMMEMORATING THE WINNER OF THE 1971 EPSOM HANDICAP

**INPUT:** BIRTHPLACE OF THE 7TH INPUT

**INPUT:** SPORTS EQUIPMENT STORE CHAIN IN THE FORTUNE 500

**INPUT:** \_\_\_\_\_ (SLIGHT RETURN)

**INPUT:** FORMER 125CC MOTORCYCLE WORLD CHAMPION

**Answer:** \_\_\_\_\_

#4:

⤵↵⤴⤴ ⤵⤵ ⤴⤵⤵⤵⤴⤴⤵⤵⤴⤵⤵

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Will☺

I hope this letter finds you well⇒ I expect you now know I've had trouble with bugs in the game I purchased over a month ago\_ I'm disappointed by the experience and I'm writing in order to once again ask about next steps in getting this problem resolved↓↑

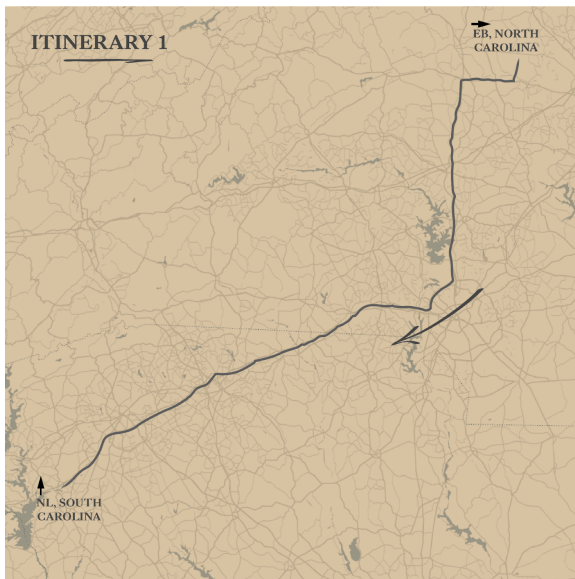
Greatly appreciate your support☺  
Samantha

Answer: \_\_\_\_\_



#5:

Hi, I'm Norm! I'm the head of the travel department. The ghost prepared these maps, showing a few of the potential paths on which she may have taken the installation wizard! Where do you think she took him?



Answer: \_\_\_\_\_

## #6: Portholes

*"Hey, I'm Lachlan, and I'm the head of our Shipbuilding division... I know, shipbuilding, not something you'd expect to find wizards working on - but how exactly do you think submarines work? Anyway, we've been working on some new designs for the wizarding ships of the future - and get this! The portholes will also serve as portals."*

O O M O I A B N E T T I O A  
W B R A U D E R U O L A K O  
M L A G L A O K R E S I B A  
Y A A N R O J U E T Y E O W  
A R T A G H U O O N E N I I  
O T I T I O A C O W O N P M  
O H C I M C K B I A N N E E  
G P I O I B A L K O K E G C  
Y O N N E O S A O H M O S O  
R K C O B A F A A L I I W A  
A L B A M A M O G G L E A H  
S U S A C Y S O A S U I A T  
D C D T S A T N H L E C N A  
A O O H A S H E U N T E R G

AMADJUAK  
ATHABASCA  
BAIKAL  
BALKHASH  
BANGWEULU  
DUBAWNT  
KHANKA  
MALAWI  
MICHIGAN

MWERU  
NETTILLING  
NICARAGUA  
SARYGAMYSH  
TANGANYIKA  
TITICACA  
URMIA  
WINNIPEG

Answer: \_\_\_\_\_

## #7: Puzzling Pyrotechnics

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*You arrive at the Department of Magical Codebreakers to find a small gathering of wizards hunched around a table, all quietly concentrating. They seem deep in the middle of some ritual.*

*“Excuse me, I -,” you say, but are interrupted immediately.*

*“SHHHH!” one of them shushed. “We’re concentrating, this is very important.” You try to look over to see what they’re doing, but can’t really see past their hunched bodies.*

*Eventually, you hear “NOOO!”. One of them lets out a loud groan, and they all lean backwards in their chairs. “Lost again, this time was so close!”*

*You finally get a clear view of the table; it looks like they’re playing a card game of some sort.*

*“Shouldn’t y’all be working?” you ask quizzically. “Anyway, I really need help with -”*

*“Oh hush, our code breaker’s compiling,” one of them interrupts.*

*“Be nice to the new guy!” another, more friendly looking wizard, responded. “Where are our manners? My name is Helpful Harry and I’m the lead of the Wizard Codebreaking team. Have you ever played Wizard’s Hanabi before?”*

*“No but I-” you manage to sputter out.*

*“Don’t worry, we’ll teach you!” Harry clapped excitedly while handing you a parchment of rules. “You can play the cards, we’ll try to direct you; Let me introduce you to these folks.”*

*“This is Supportive Samantha, one of our most senior codebreakers! She’s been working here for over 2000 years!” Harry said, pointing to an older lady sitting next to him wearing a colorful tie dyed cloak. “Nice to meet you,” she smiled warmly.*

*“Wait just a minute, I -”*

*“This is Cory, he’s colorblind, so he might have trouble with some of the clues he gives you,” Harry continues, ignoring you. Cory, an older wizard with a scruffy looking beard, nods at you and shakes your unwilling hand.*



*“This fine gentleman is Detective Dan; he doesn’t really wanna play by the rules, so he’ll just point out cards he likes to look at,” Harry said, pointing to a teenage boy sitting across from him, who continues to scroll on his phone without looking up.*

*“And finally this is my pet CowPig, Fred,” Harry said, pointing to a magical creature in the corner. “He likes to play too.”*

*The creature gives you a friendly oink. Wait, can oinks be friendly? You think to yourself.*

*“Look I really don’t think I have time for this, I need —”*

*Harry waves his hand, completely ignoring your suggestion, and passes out the cards. “Nonsense! We’ll deal with your problem once we beat the game! We’ll try to give you helpful clues, but we’re not doing anything till we get a perfect score!”*

*You sigh and pick up your cards. Looks like you’re gonna need to figure this out before they’ll help.*

**To start the game, visit <https://puzzlingpyrotechnics.getforge.io/>.**

**To see the rules of Wizard's Hanabi, visit <https://puzzlingpyrotechnics.getforge.io/rules.html>.**

**Answer: \_\_\_\_\_**

## #8: Spelling Bee

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*The head of the Elemental Education department welcomes you in. “We run all kinds of events to expose children to the arts, and Recruiting occasionally asks me to send some of the most promising-looking ones in their direction. But I’ve been reviewing the recording of our most recent event and there’s something strange... want to listen to it with me?”*

*As she presses Play, you hear an announcer thunder: “Welcome to the 5th edition of the Duelers & Dictionaries Spelling Bee! Let’s see what our talented spellers can do...”*

<https://voca.ro/1nC0xjTeATQh>

<https://voca.ro/16mgZ3Oq5i8V>

<https://voca.ro/18EsACE0zKIG>

<https://voca.ro/16Zu6JuCENYy>

<https://voca.ro/1liQM5rYPGvB>

<https://voca.ro/1f7LQmruJGJE>

<https://voca.ro/17jokxsieq4U>

<https://voca.ro/1Tr4RXA1eVgK>

<https://voca.ro/1cTUCqJwltCJ>

<https://voca.ro/159jhwpt1obC>

<https://voca.ro/1hCwLiwerrEF>

*“...Wow! Can you believe all of them got their words wrong?”*

Answer: \_\_\_\_\_

## Metapuzzle: Memo from O.C.U.L.U.S.

**This is a metapuzzle. It requires answers from the previous 8 puzzles to solve it. You can start looking at it now, but you will reach a point where you need the answers to most or all of the prior puzzles, so focus on those first. This paragraph is not a puzzle.**

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*Thanks for all your help so far! We sent your data to our contact at Objective Consultants Using Logic to Understand Systems, and they sent over the following memo.*

An unfriendly spirit is often after something rather than causing chaos for chaos' sake. Figuring out what will require combining what you've learned so far here at the Magical Engineering & Technology Agency (M.E.T.A.) with lessons learned from the broader tech community. You should be able to bring the Installation Wizard back once you know the answer to this question:

### **What does the ghost want you to do?**

Volcano outside Tokyo, with Mt (4)[1]  
Pirate's syllable (3)[2]  
Reverberation (4)[2]  
Utensil with tines (4)[2]  
Photo taker (6)[1]  
Fare receipt (6)[6]  
Trounce or defeat (4)[2]  
Legally Blonde protagonist Woods (4)[3]  
Trapeze artist (7)[5]  
Contact \_\_\_\_ (4)[6]  
Fete, ball, or bash (4)[8]  
Stir or ignite (6)[4]  
Jenner who is basically a Kardashian (7)[1]  
Blink on and off, as a light (5)[1]  
Utah NBA team (4)[3]  
Relating to sight (7)[5]  
The New York \_\_\_\_ (5)[2]  
Unit of rain (4)[1]  
Scale measurement (6)[3]  
Labor group (5)[10]  
Dark shape made by blocking light (6)[4]  
A bit of inspiration (5)[8]  
Golf peg (3)[4]  
Like 2, 3, and 5 - but not 4 (5)[5]

**Answer:** \_\_\_\_\_