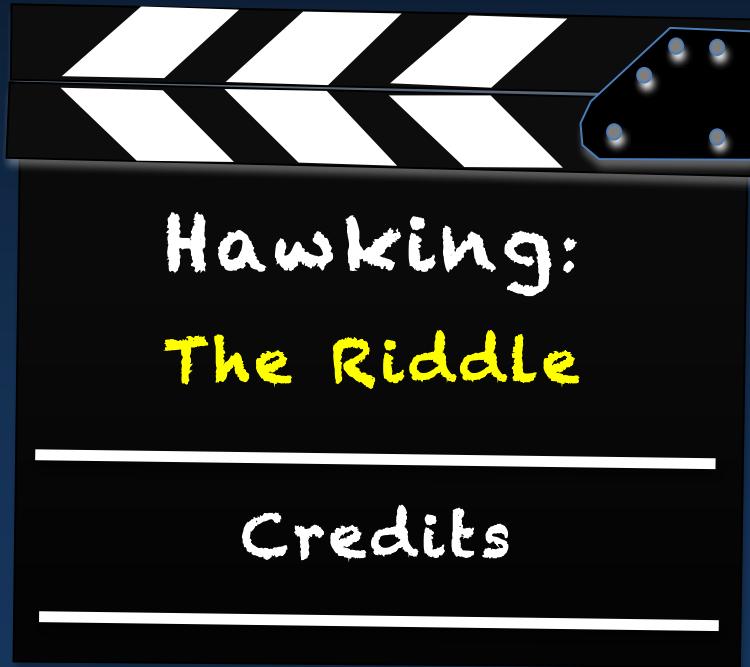


Hawking's Riddle



A Challenge for LLMs **Tony Veale, 2024**



Hawking's riddle is based on “Einstein’s Riddle” from **Life magazine** in December, 1962. Einstein’s connection to the riddle is apocryphal, and about as tenuous as Hawking’s.

To Begin ...



Donald J. Trump

Take 5 Dastardly Villains ...



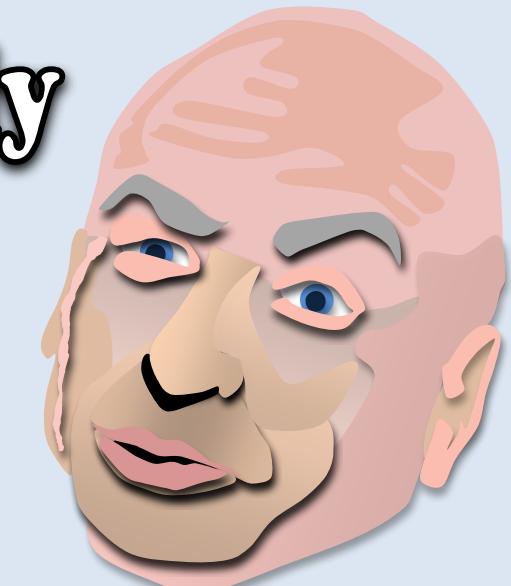
Frank Underwood



Kim Jong-un

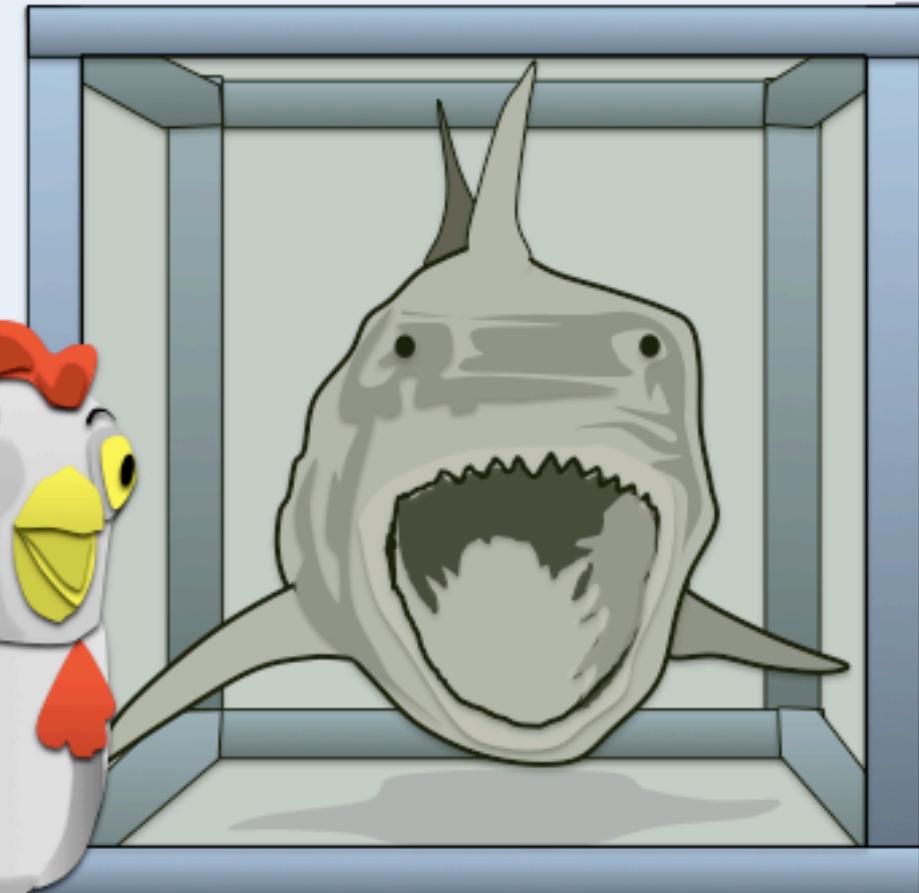


Bane



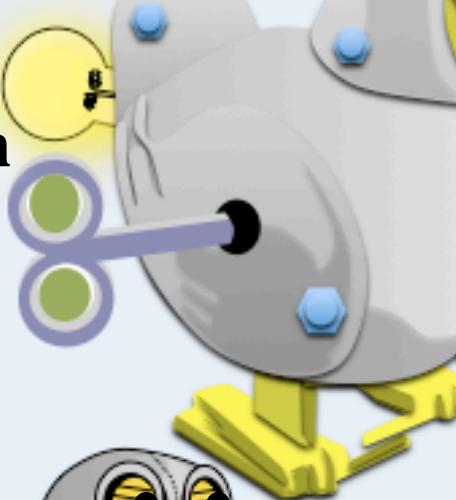
Dr. Evil

Octopus



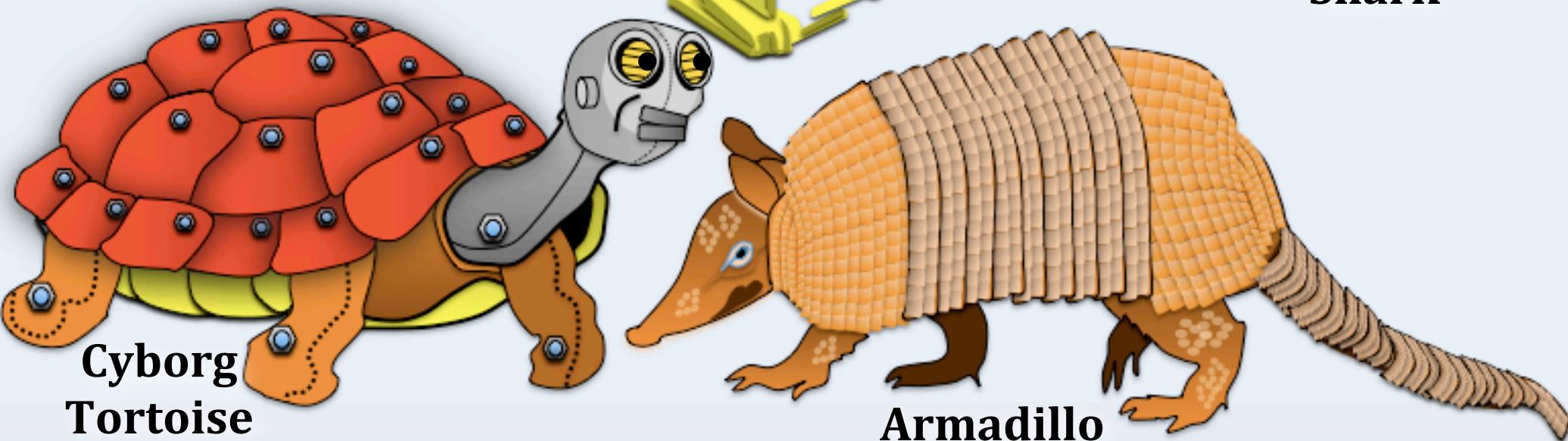
Robot
Chicken

Add
5 Evil Pets ...



Shark

Armadillo



Cyborg
Tortoise

Put them in 5 Adjacent Houses ...



**Give them
5 Favorite Smokes ...**

Black Lung

French Soot

Coal Dust

Slow Death

Hacking Cough



... and 5 Favorite Tipples

Whiskey

Bourbon

Tequila

Vodka

Champagne



Hawking's Riddle

1. There are **five houses**.
2. **Frank Underwood** lives in the **Red house**.
3. **Dr. Evil** owns the frickin' **Octopus**.
4. **Whiskey** is the preferred drink in the **Black house**.
5. **Donald Trump** drinks **Bourbon**.
6. The **Black** house is just to the right of the **White** house.
7. The **Black Lung** smoker owns the **Tortoise**.
8. **French Soot** is smoked in the **Brown** house.
9. **Tequila** is the preferred drink in the middle house.
10. **Bane** lives in the first house.
11. The villain who smokes **Coal Dust** lives in the house next to the villain with the **Armadillo**.
12. **French Soot** is smoked in a house next to the house where the **Shark** is kept.
13. The **Slow Death** smoker drinks **Vodka**.
14. **Kim Jong-un** smokes **Hacking Cough**.
15. **Bane** lives next to the **Blue** house.





**To solve the riddle, let's use ChatGPT ...
... and walk the LLM through a chain-of-thought .**

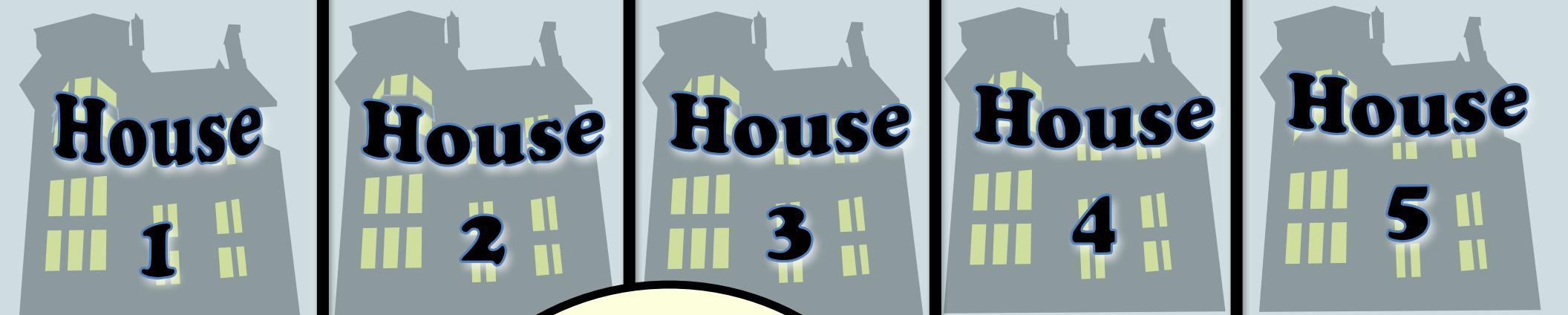
Thinking Fast and Slow ...





A cartoon illustration set against a dark blue background. On the left, a man with light green hair and glasses is shown from the side, looking towards the right. On the right, a small red and yellow robot turtle is walking towards the left. The turtle has a black ink bottle labeled "INK" on its shell. A speech bubble originates from the man's head, containing text.

Okay,
let's first solve it
the old-fashioned
human way:
with **paper**
and **pen!**



House

1

House

2

House

3

House

4

House

5

We can start by drawing a **simple grid** into which to put all of our **facts** and **inferences**.





Blue





Blue



?

White

Black





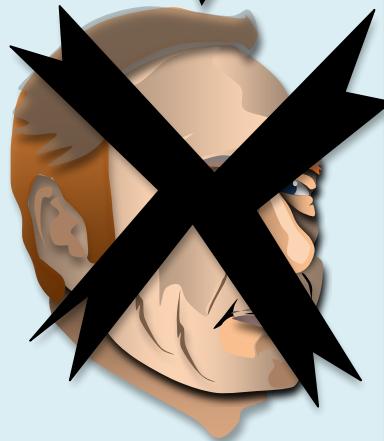
Blue



White

Black

Red

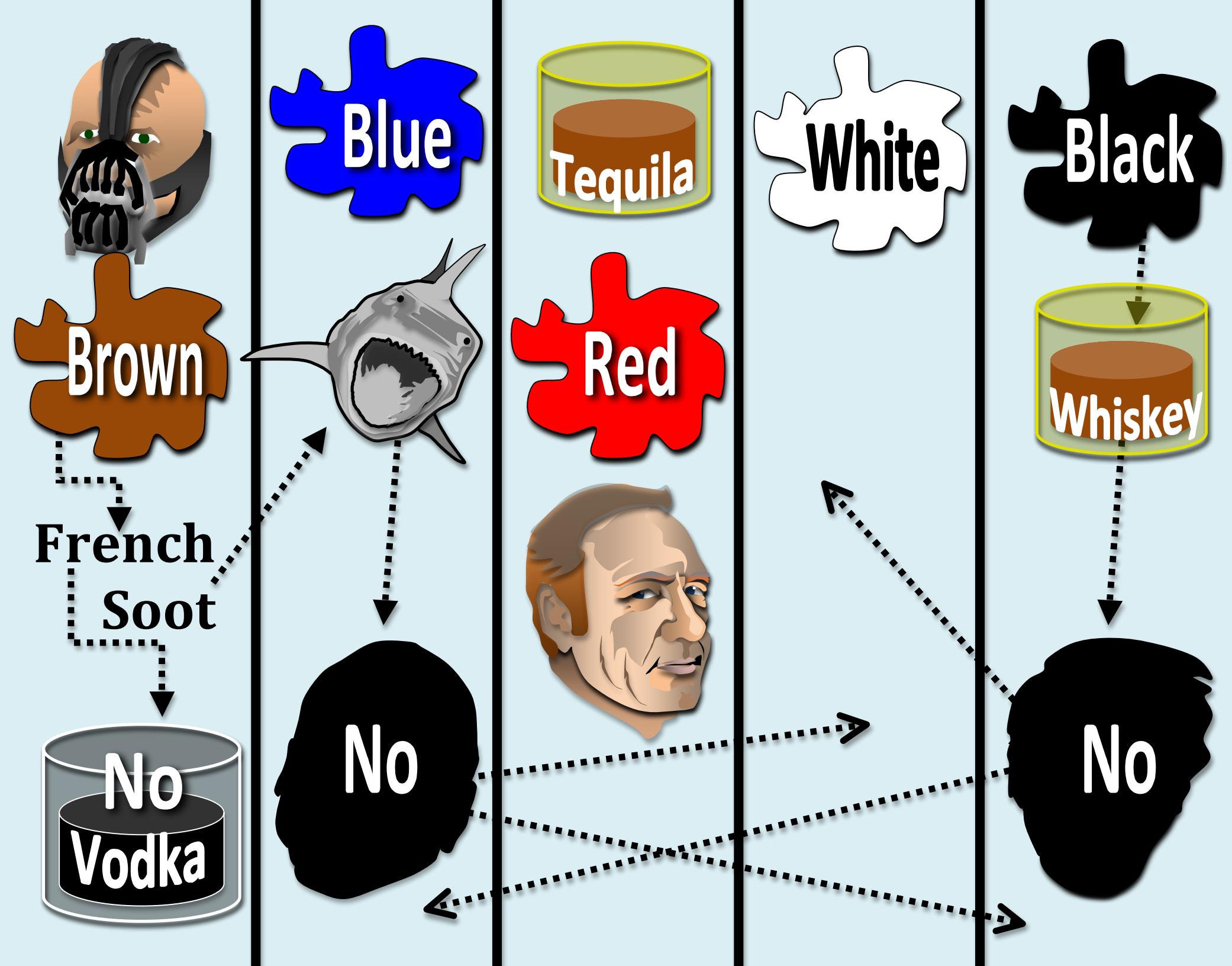


?

Brown

French
Soot





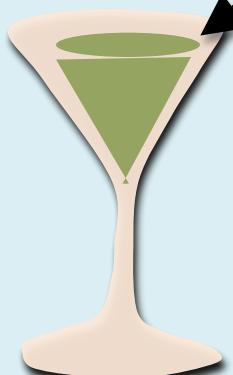


Blue

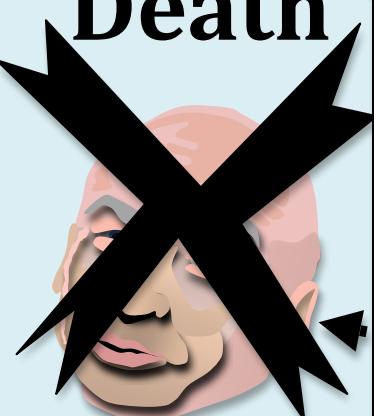


Brown

French
Soot



Slow
Death



Red



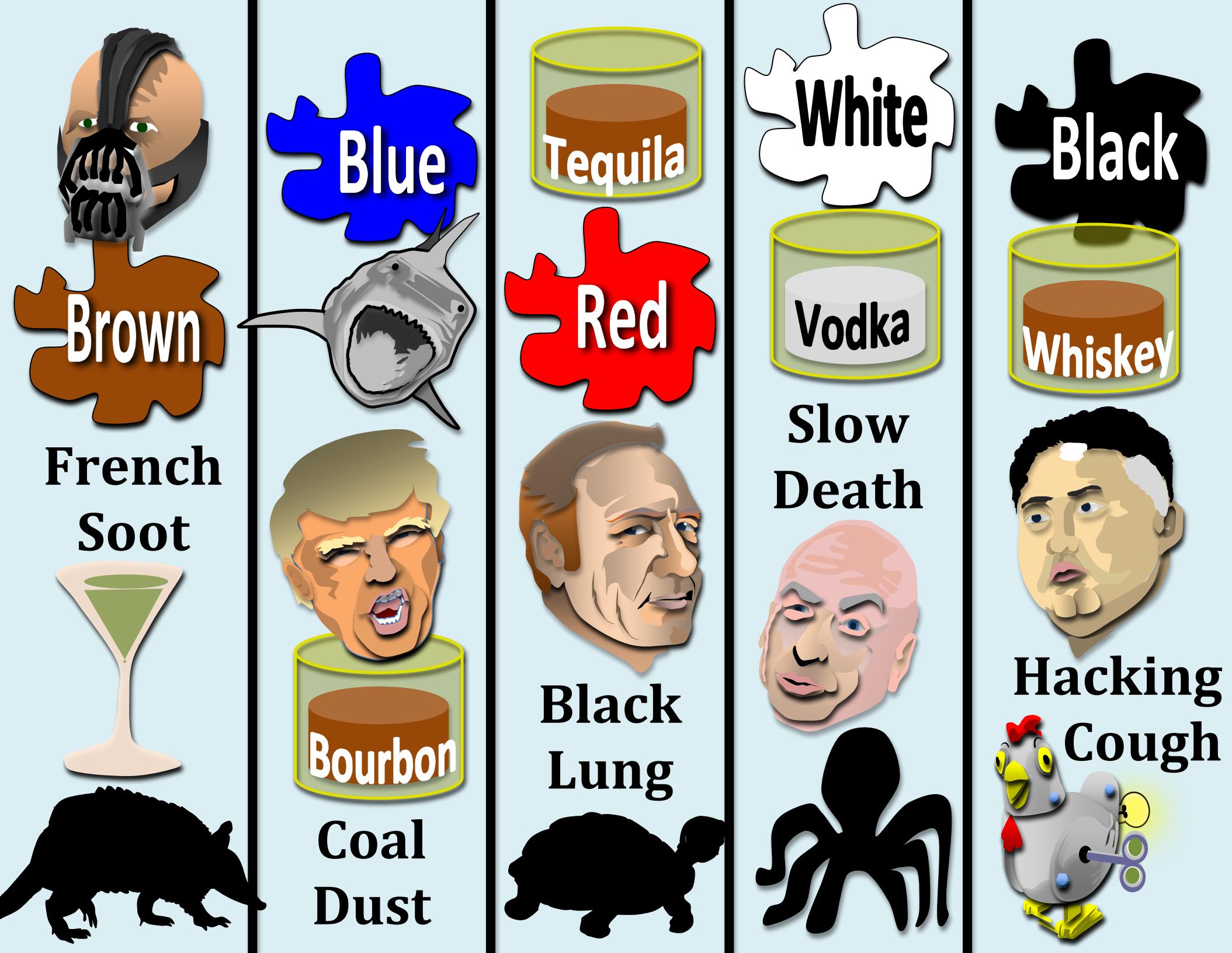
White



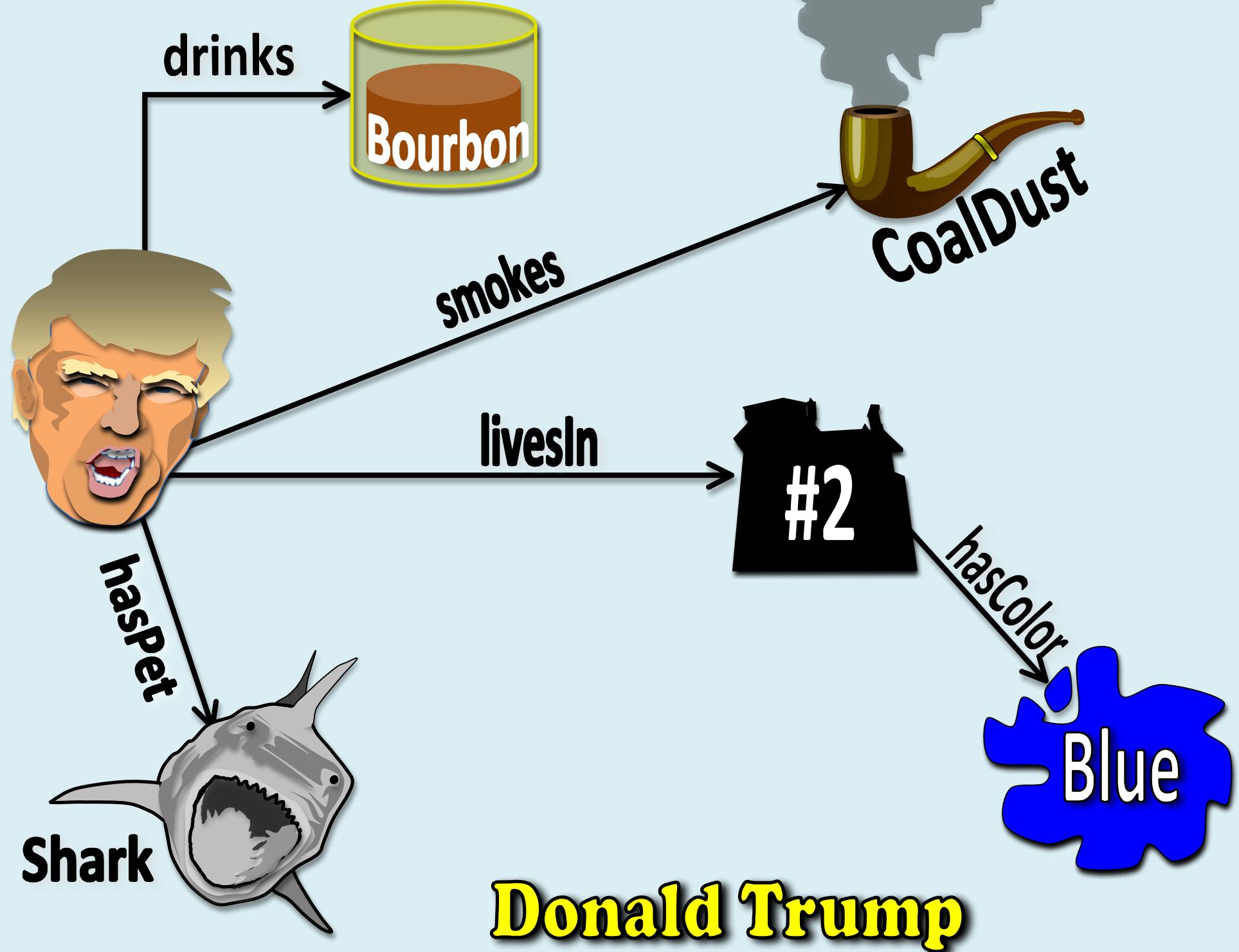
Black

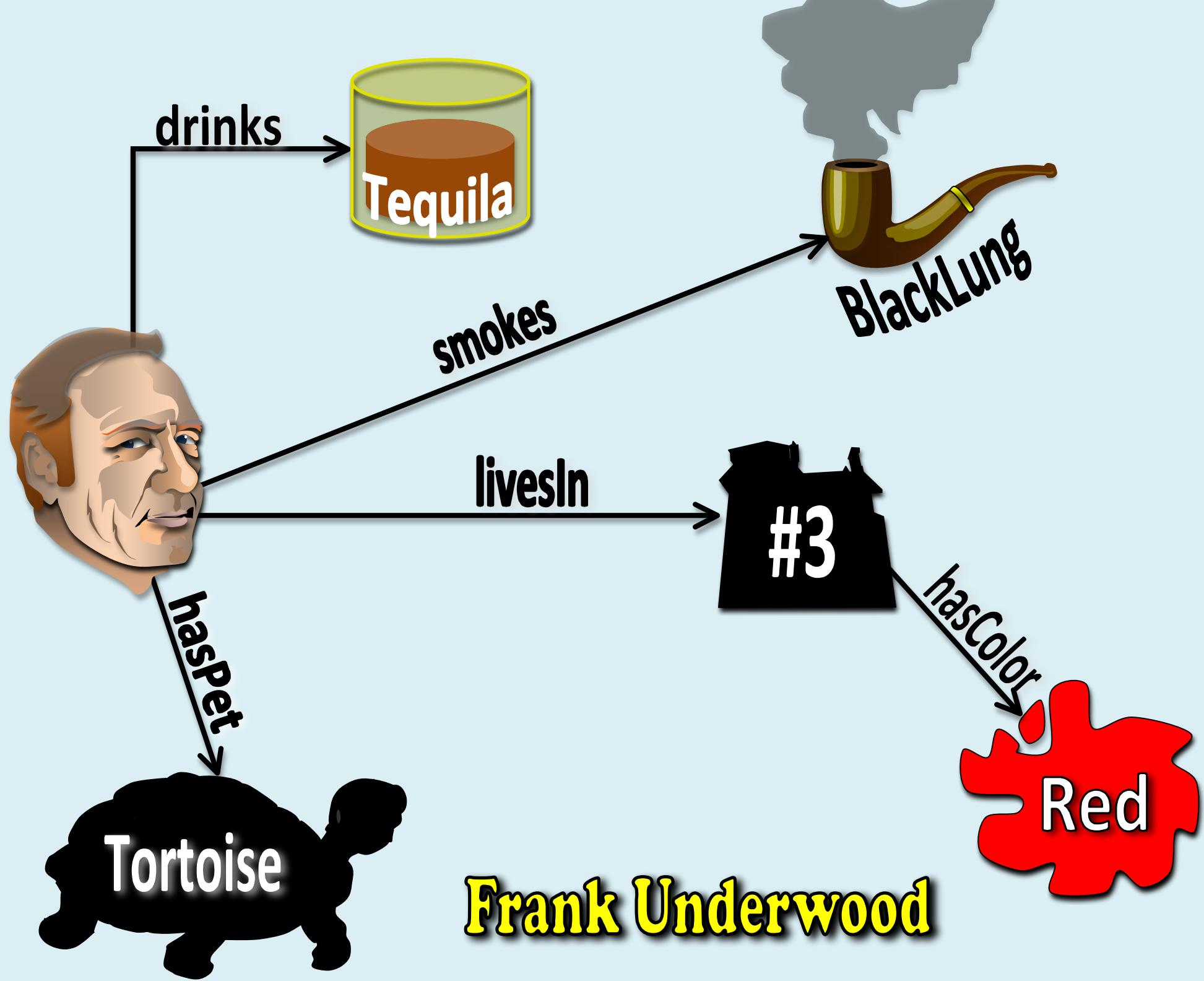


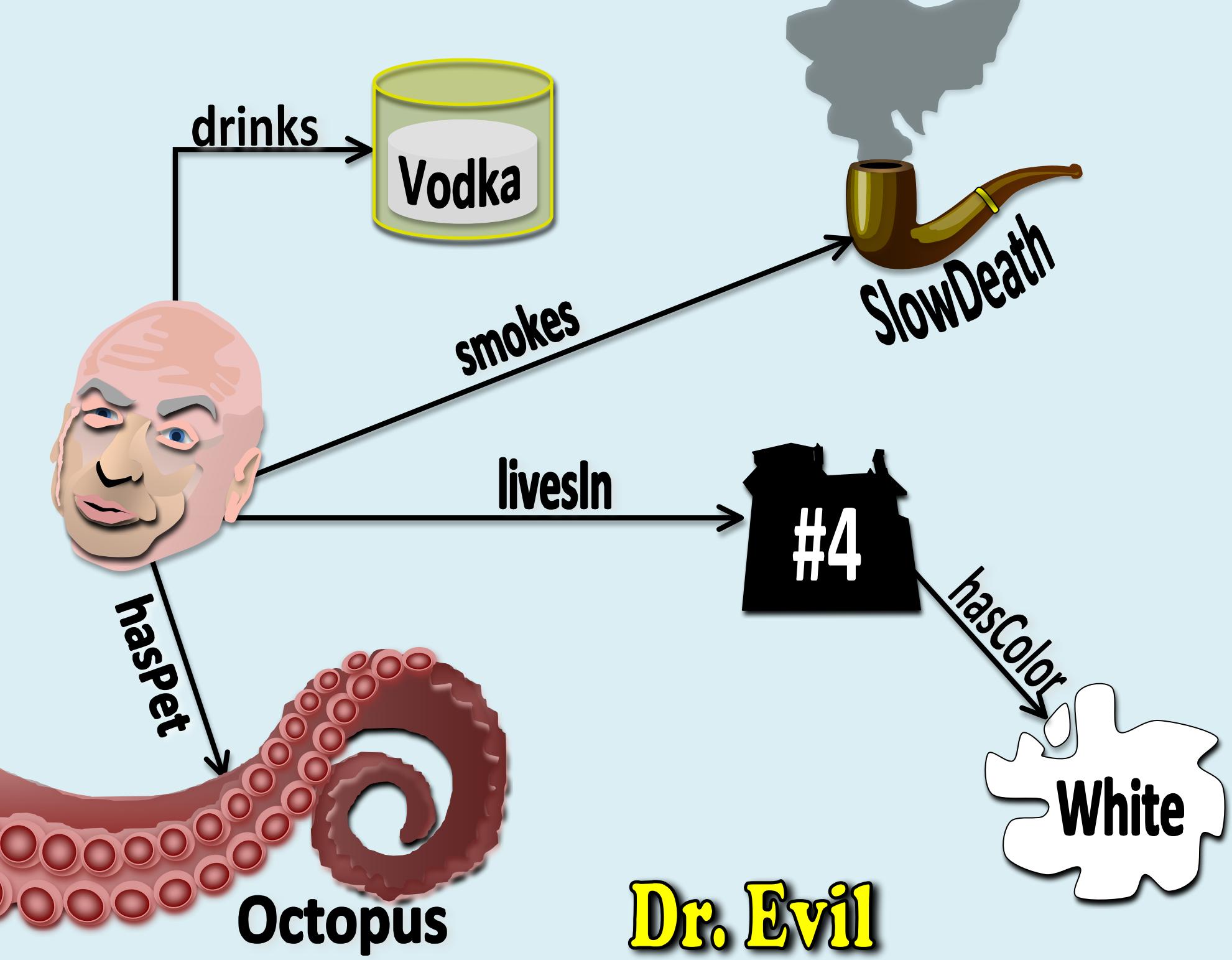
Hacking
Cough

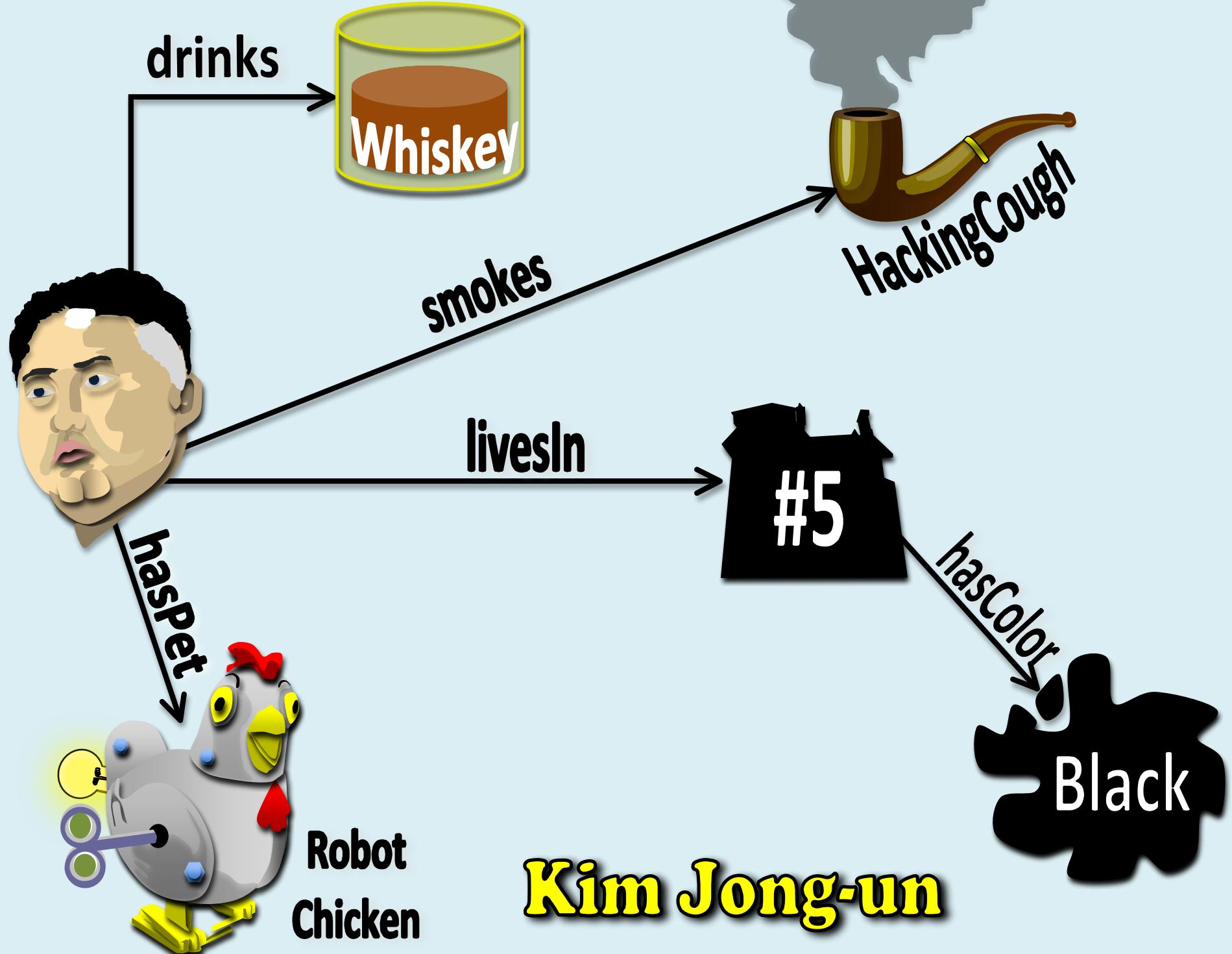














Now, your challenge is to get **ChatGPT** to produce the **right answer** too.



Send me the *annotated transcript* of your interactions with ChatGPT.

But take care **not** to give the LLM the **right answers**. It must work them out **for itself**.