APS106

MIDTERM REVIEW

RULES OF THE GAME

- Must use button on the table to answer question verbally and explain your answer – you will be called on to answer by one of the instructors
- Must tell us which discipline you're in before you answer for points (we'll rely on the honour system)
- If you get the answer right, you pick the next category
- If you get the answer wrong, the next person whose hand is up can steal
- Everyone is here to learn and review for the midterm so be kind to everyone who answers!

PANEL

STRANGER STRINGS	LOOP WARS	THE BOOLEAN IDENTITY	THE BATCODE RISES	MISSION DEBUGGING
$250	$250	$250	$250	$250
$500	$500	$500	$500	$500
$1000	$1000	$1000	$1000	$1000

STRANGER STRINGS
"Because Python strings can hide secrets — just like Joyce's Christmas lights!"
WELCOME
TO
HAWKINS

➢ HAWKINS LAB EXPERIMENT · $250

What is the output?

```
experiment_log = "SUBJECT ELEVEN - TELEKINESIS TEST"
print(experiment_log[8:-19])
```

Question board

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➢ DUSTIN'S SECRET TRANSMISSION · $500

What is the output?

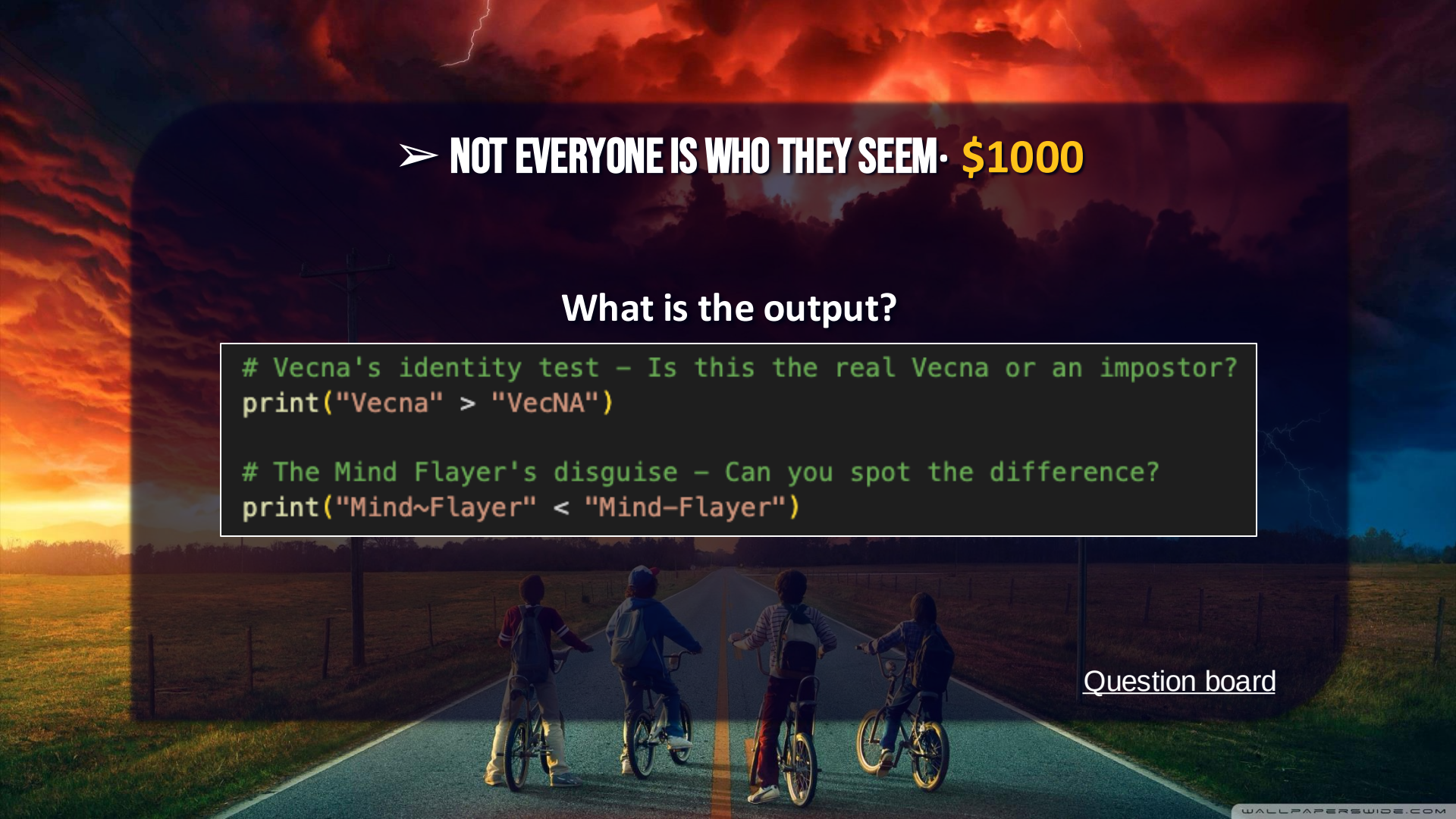
```
radio_signal = "Nobody normal ever accomplished anything meaningful in this world."
radio_signal = radio_signal.lower()
radio_signal = radio_signal.upper()
radio_signal = radio_signal[15:4:-4]
print(radio_signal)
```

Question board

➢ NOT EVERYONE IS WHO THEY SEEM· $1000

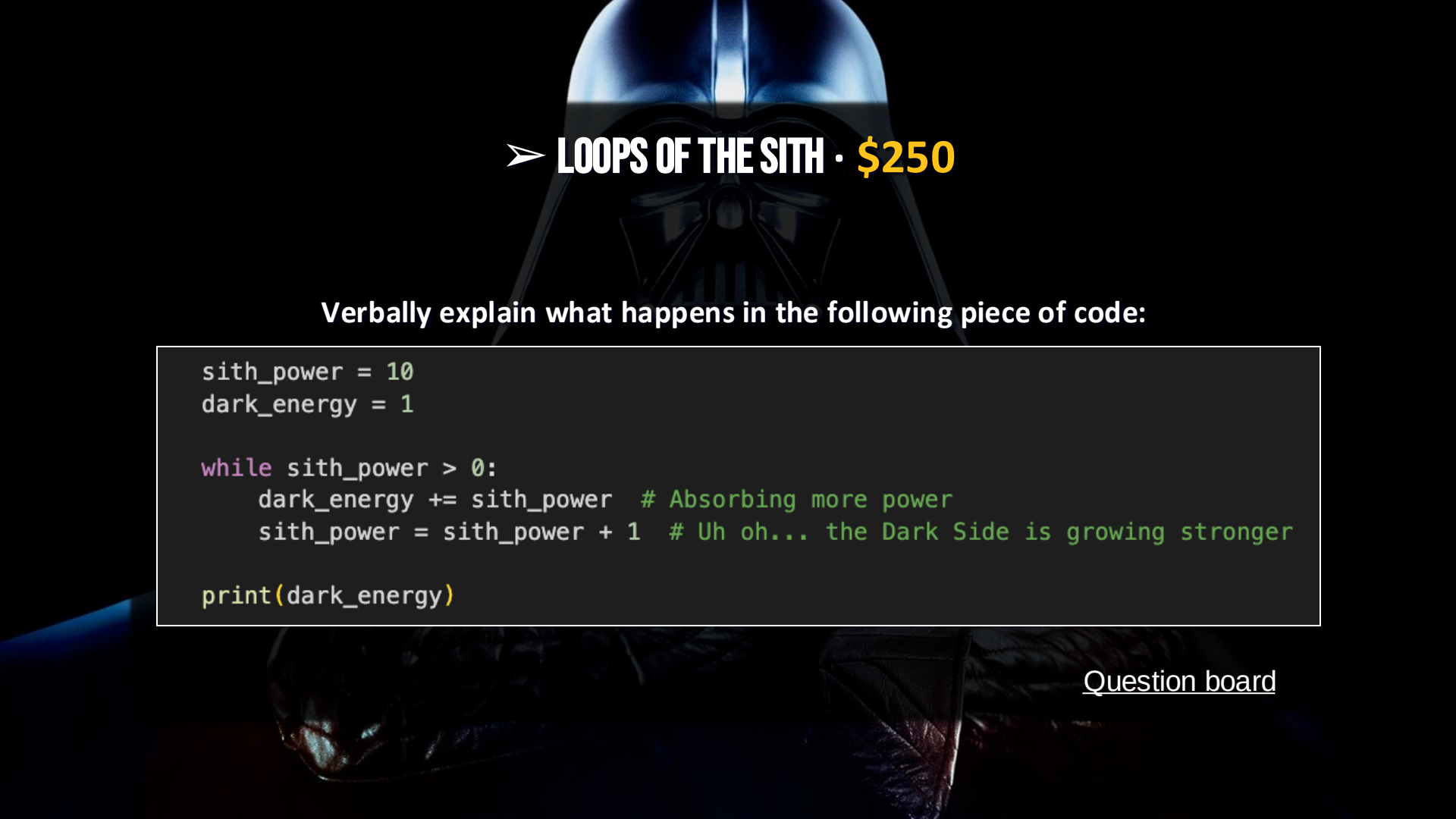
What is the output?

```
# Vecna's identity test - Is this the real Vecna or an impostor?
print("Vecna" > "VecNA")

# The Mind Flayer's disguise - Can you spot the difference?
print("Mind~Flayer" < "Mind-Flayer")
```



Question board

May the Loops & Logic Be With You



➢ LOOPS OF THE SITH · $250

Verbally explain what happens in the following piece of code:

```
sith_power = 10
dark_energy = 1

while sith_power > 0:
    dark_energy += sith_power  # Absorbing more power
    sith_power = sith_power + 1  # Uh oh... the Dark Side is growing stronger

print(dark_energy)
```

Question board

➢ DESCENT INTO DARKNESS · $500

Provide the print statement that will give this output?

```
sith_name = "VADER"
i = 0

while i < len(sith_name):
    # print statement
    i += 1
```

```
V
        A
                D
                        E
                                R
```

Question board

BATTLE OF LOOPS: THE FILES OF FATE · $250

What will the contents of the files look like?

```python
file = open("battle_log.txt", "w")

power_level = 1
while power_level <= 5:  # The battle continues for 5 rounds
    file.write(f"Round {power_level}: The Jedi and Sith clash!\n")
    power_level += 1  # Power grows

file.close()
```

A

```
Round 1: The Jedi and Sith clash!

Round 2: The Jedi and Sith clash!

Round 3: The Jedi and Sith clash!

Round 4: The Jedi and Sith clash!

Round 5: The Jedi and Sith clash!

```

B

```
Round 1: The Jedi and Sith clash!
Round 2: The Jedi and Sith clash!
Round 3: The Jedi and Sith clash!
Round 4: The Jedi and Sith clash!
Round 5: The Jedi and Sith clash!

```

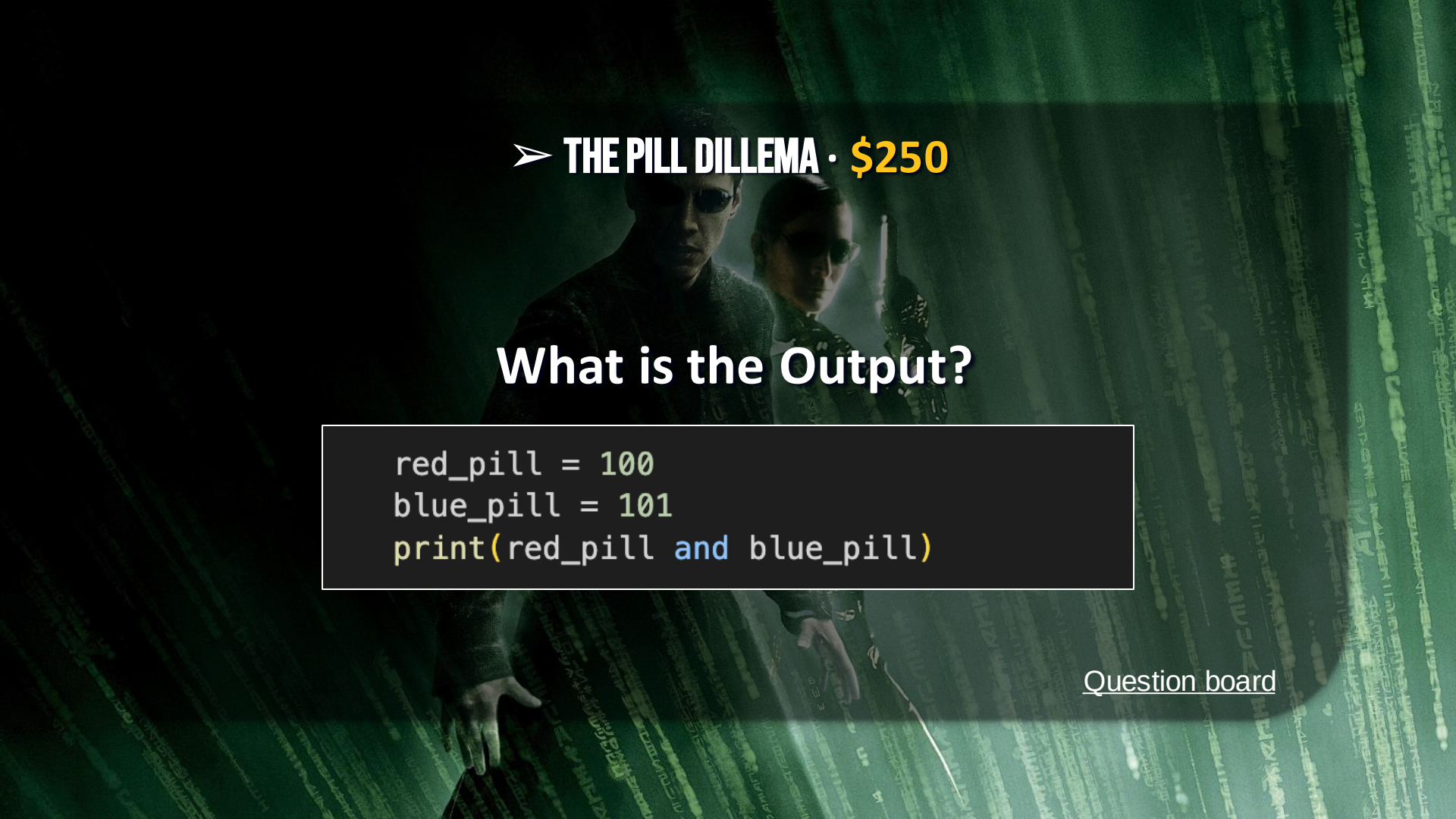
C

```
Round 1: The Jedi and Sith clash!
Round 2: The Jedi and Sith clash!
Round 3: The Jedi and Sith clash!
Round 4: The Jedi and Sith clash!
Round 5: The Jedi and Sith clash!
```

D

```
Round 1: The Jedi and Sith clash!

Round 2: The Jedi and Sith clash!

Round 3: The Jedi and Sith clash!

Round 4: The Jedi and Sith clash!

Round 5: The Jedi and Sith clash!
```

THE BOOLEAN IDENTITY
The difference between knowing the truth... and living a lie.

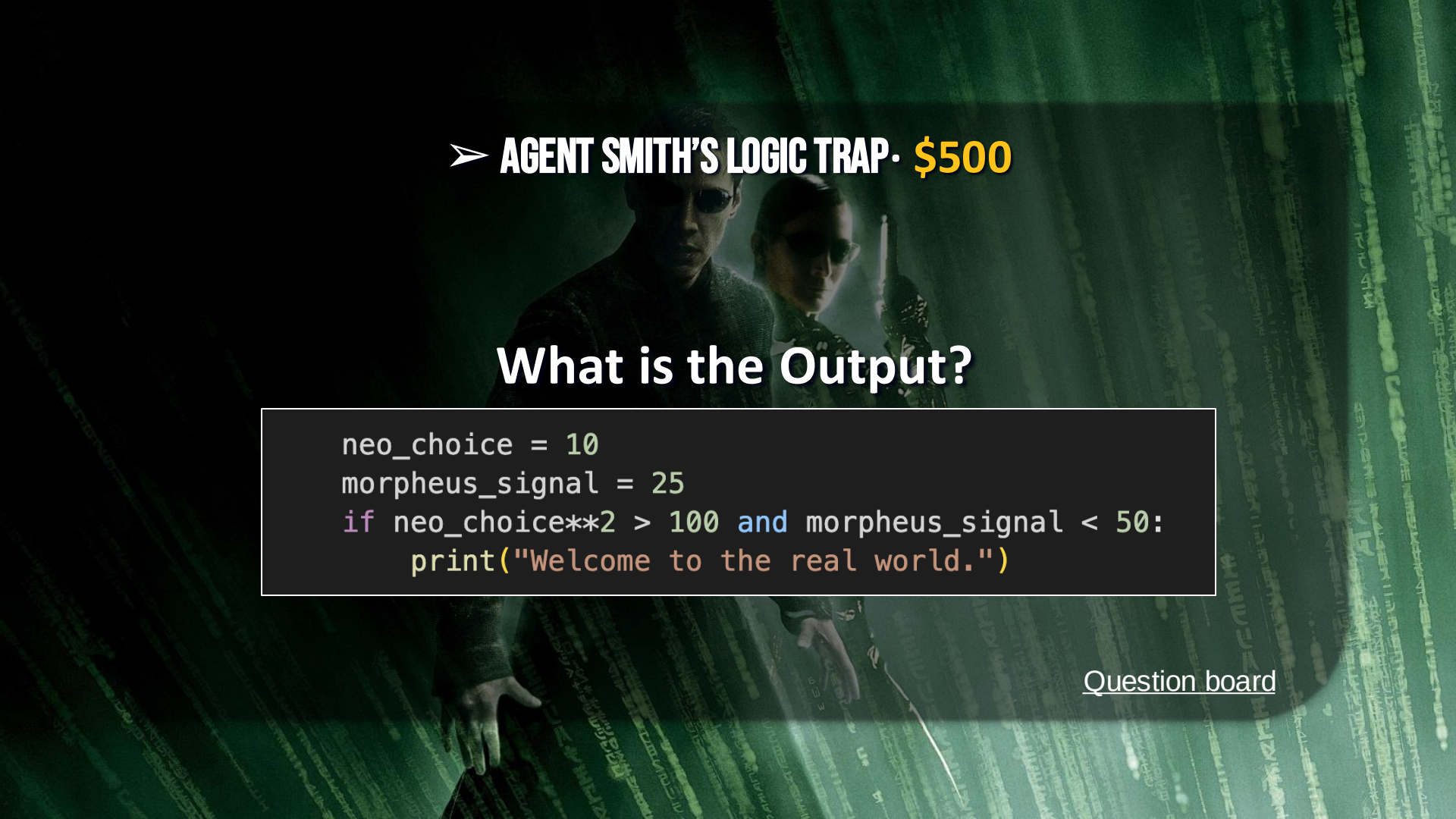


➢ THE PILL DILLEMA · $250

What is the Output?

```
red_pill = 100
blue_pill = 101
print(red_pill and blue_pill)
```

Question board



➢ AGENT SMITH'S LOGIC TRAP· $500

What is the Output?

```
neo_choice = 10
morpheus_signal = 25
if neo_choice**2 > 100 and morpheus_signal < 50:
    print("Welcome to the real world.")
```

Question board

➢ THE ONE CONDITION · $1000

Which Boolean condition will evaluate True when matrix is equal to "real_world" or "illusion"?

- A. `matrix == "real_world" == "illusion"`
- B. `matrix = "real_world" or matrix = "illusion"`
- C. `matrix == "real_world" or matrix == "illusion"`
- D. `matrix = "real_world" and matrix = "illusion"`
- E. `matrix == "real_world" and matrix == "illusion"`

Question board

Every function needs structure—just like Gotham needs order.

➢ TRUE POWER OF THE DARK KNIGHT · $250

What is the outcome of executing this code?

```
def dark_knight_power(num):
    """The Dark Knight rises... to the power of 3."""
    print(num**3)

# The Dark Knight tests his might
bat_signal1 = dark_knight_power(5)
bat_signal2 = bat_signal1 + 1

print(f"Gotham's power level: {bat_signal2}")
```

Question board

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➢ THE DARK KNIGHT'S MORAL CODE · $500

What is the Output?

```
def batman_or_joker(score):
    if score > 90:
        return "You're Batman."
    elif score > 50:
        return "You're Two-Face."
    else:
        return "You're Joker."

print(batman_or_joker(85))
```

What is the correct output?

[A] You're Two-Face.
[B] You're Batman.
    You're Two-Face.
[C] You're Batman.
    You're Two-Face.
    You're Joker.
[D] You're Two-Face.
    You're Joker.

Question board

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➢ WHERE IS HE?!· $1000

Select the missing function body from the options below

```
def where_is_batman(city):
    """Gotham needs to know where he is..."""
    # Missing Function Body

bat_signal = where_is_batman('Gotham')
```

```
Gotham
```

```
print(bat_signal)
```

```
Gotham
```

```
Options

[A] return city
    print(city)
[B] print(city)
[C] print(city)
    return city
[D] return city
```

Question board

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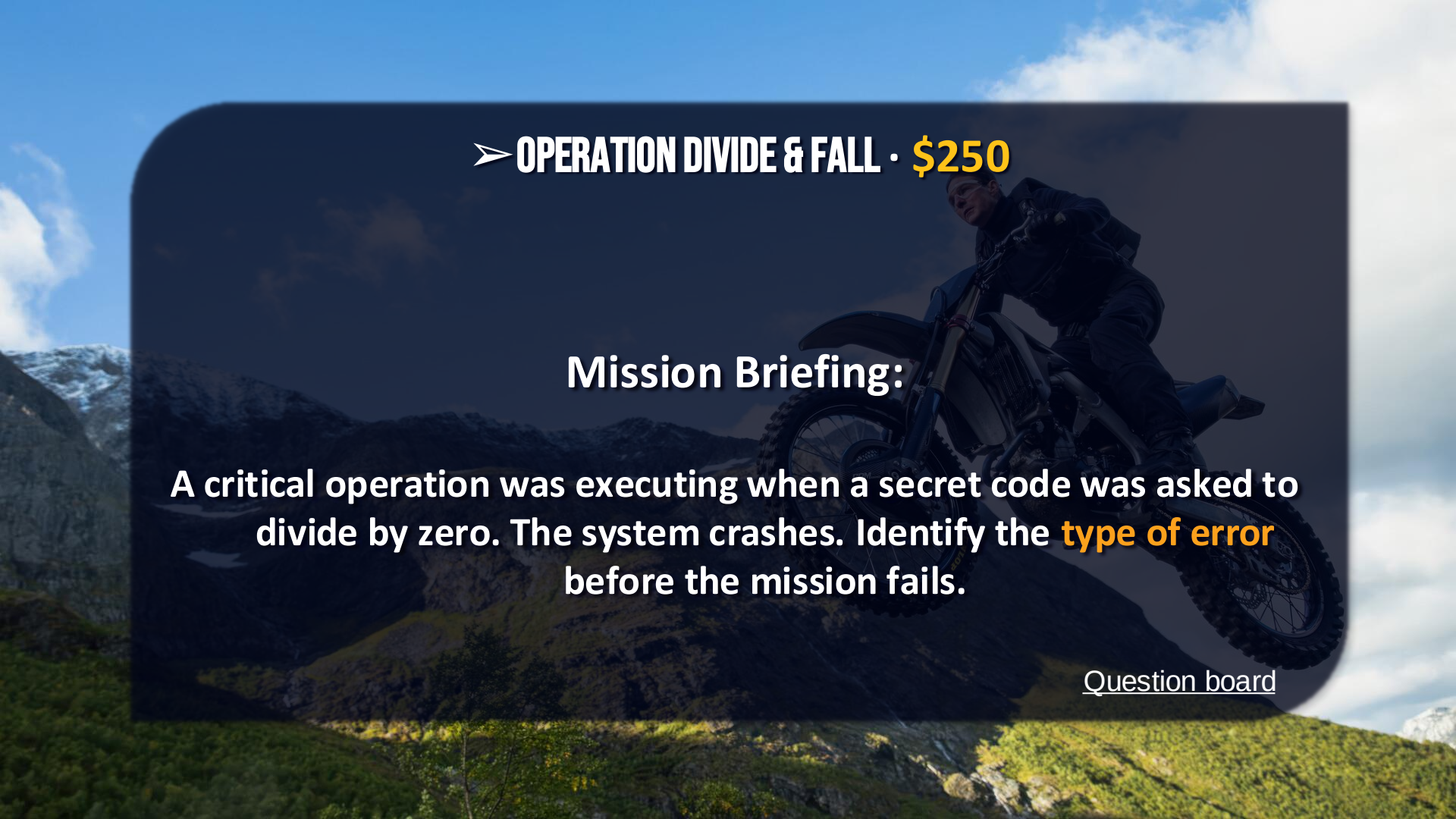
MISSION:
DEBUGGING
Because every bug is a ticking time bomb… can you defuse it in time? ⏳💥

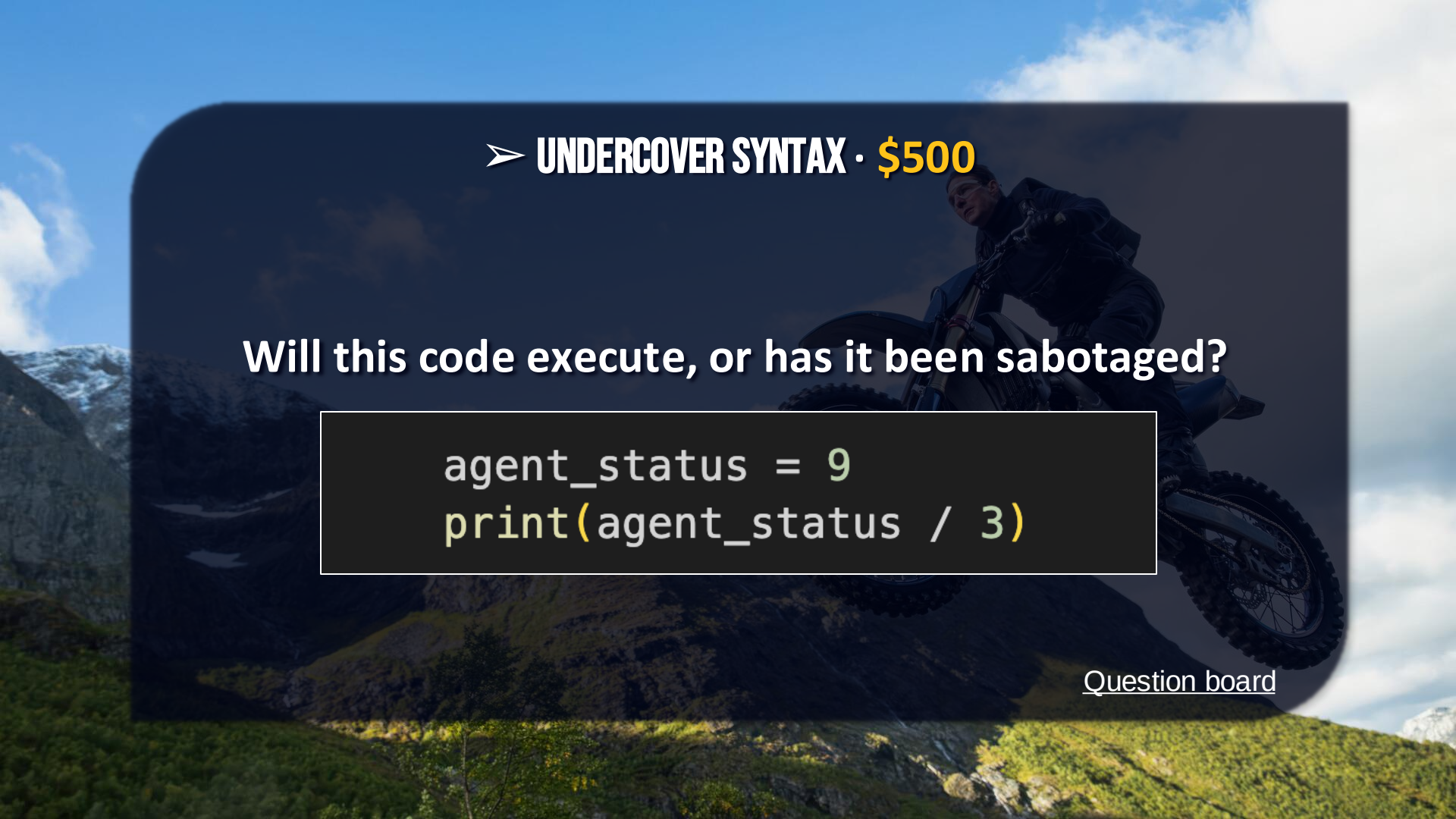


➢ OPERATION DIVIDE & FALL · $250

Mission Briefing:

A critical operation was executing when a secret code was asked to divide by zero. The system crashes. Identify the type of error before the mission fails.

Question board


➢ UNDERCOVER SYNTAX · $500
Will this code execute, or has it been sabotaged?
agent_status = 9
print(agent_status / 3)
Question board

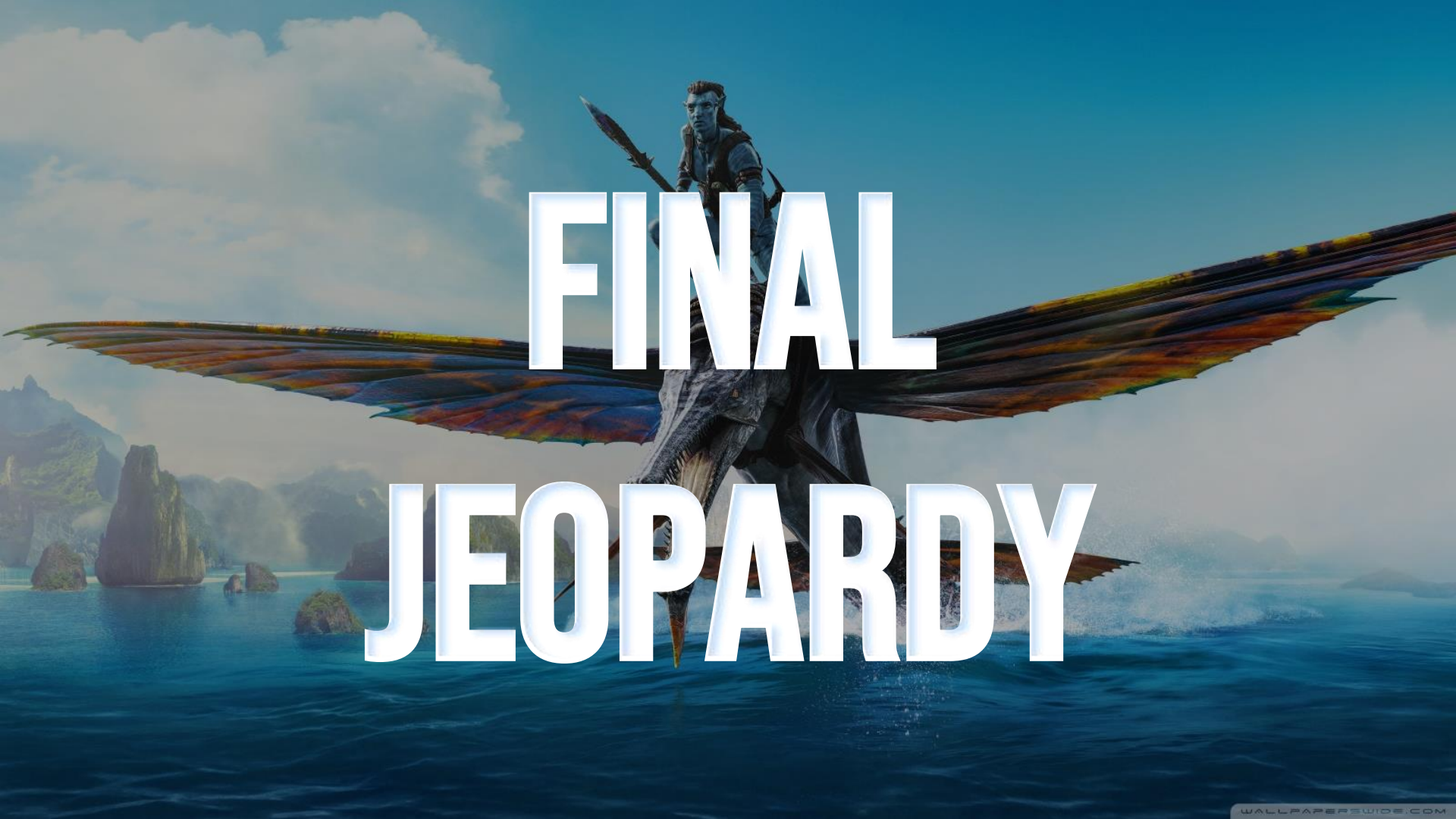
➢ THE DISAVOWED INPUT · $1000

What kind of error is that?

A hacker inputs “ethanhunt” and receives the response “Intruder Detected! Self-destruct in 5 seconds.”

```
access_code = input("Enter IMF override key:")
if access_code == "EthanHunt":
    print("Mission Authorized!")
else:
    print("Intruder Detected! Self-destruct in 5 seconds.")
```

Question board


FINAL
JEOPARDY

➢ MASTERING THE OCEAN'S FLOW

On Pandora, water changes depending on the environment.

- At freezing temperatures, it becomes solid ice.
- When the temperature is normal, it flows gently.
- When it's too hot, it turns into steam.

Your task:

Determine the state of Pandora's water based on its temperature.

Write a function that determines whether Pandora's water is ice, liquid, or steam based on temperature.

Question board