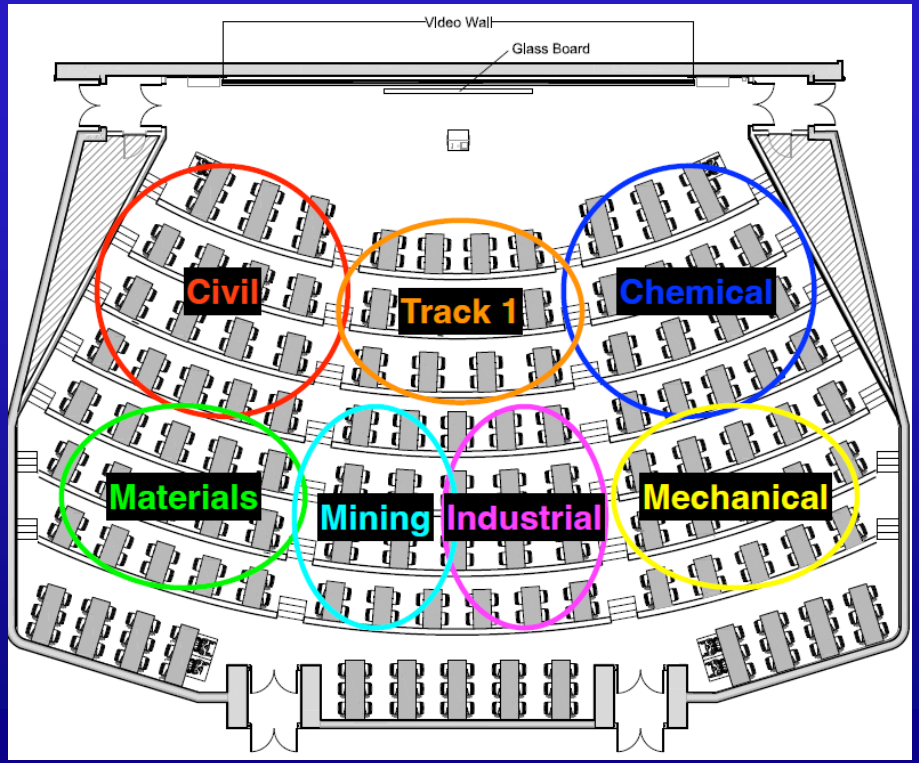
APS106

MIDTERM REVIEW


Video Wall
Glass Board
Civil
Track 1
Chemical
Materials
Mining
Industrial
Mechanical

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	CODE EXTRACTION
$250	$250	$250	$250	$250
$500	$500	$500	$500	$500
$1000	$1000	$1000	$1000	$1000

FINAL JEOPARDY


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

➢ 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

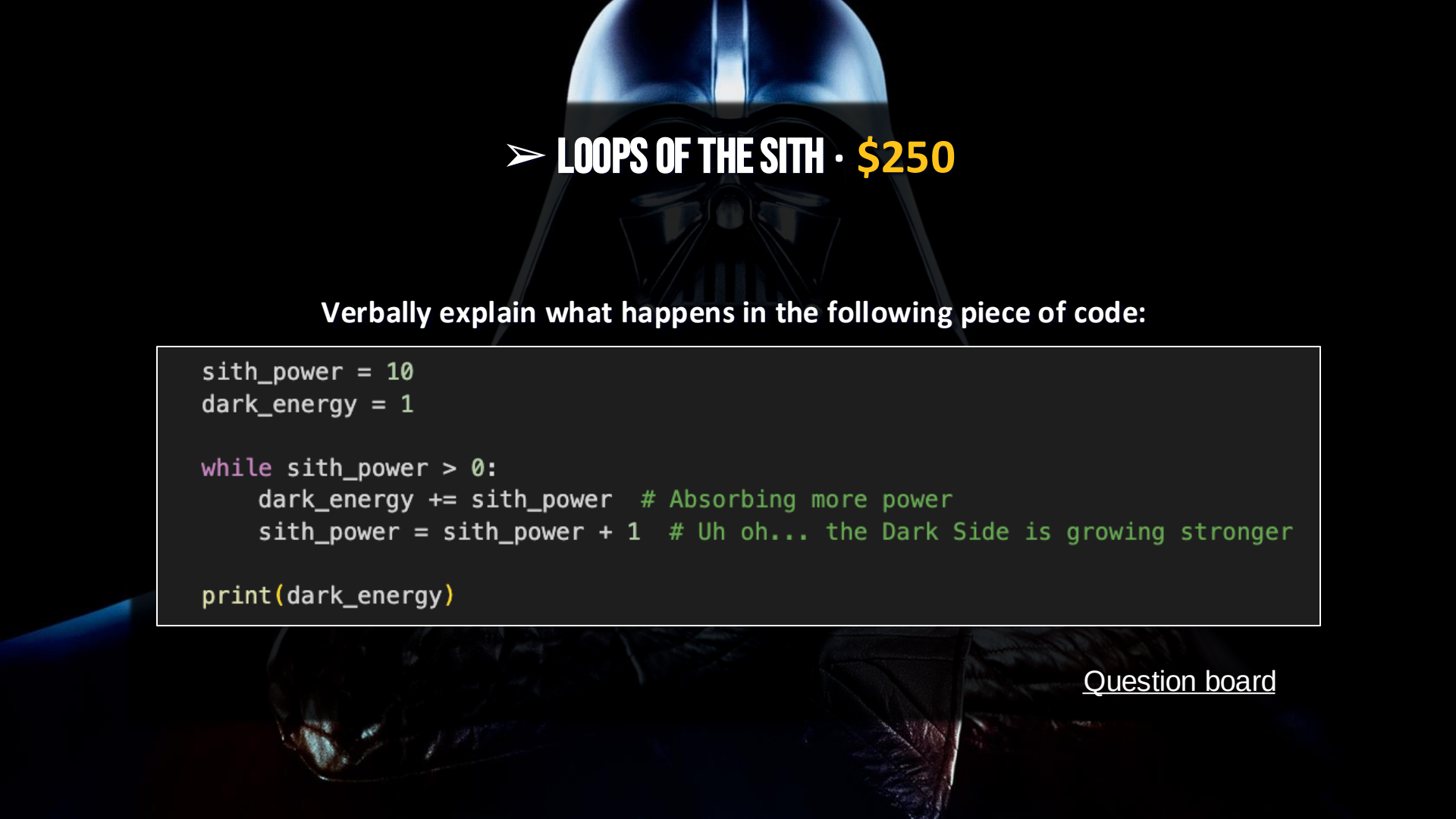
➢ NOT EVERYONE IS WHO THEY SEEM· $1000

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


LOOP WARS
May the Loops & Logic Be With You

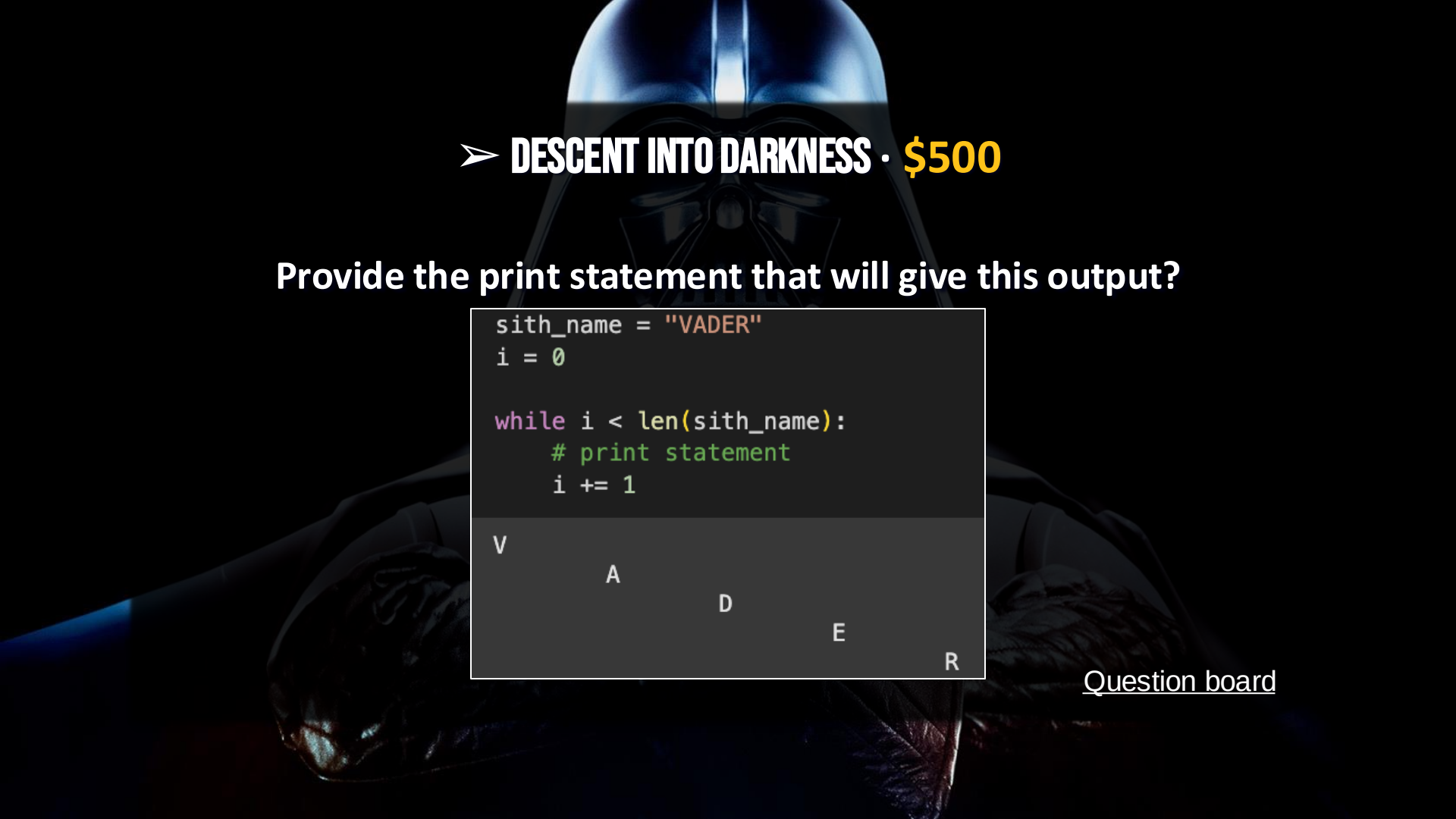


➢ LOOPS OF THE SITH · $250

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 · $1000

What will the contents of the files look like?

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

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

file.close()
```

A

```
 1 Round 1: The Jedi and Sith clash!
 2
 3 Round 2: The Jedi and Sith clash!
 4
 5 Round 3: The Jedi and Sith clash!
 6
 7 Round 4: The Jedi and Sith clash!
 8
 9 Round 5: The Jedi and Sith clash!
10
```

B

```
1 Round 1: The Jedi and Sith clash!
2 Round 2: The Jedi and Sith clash!
3 Round 3: The Jedi and Sith clash!
4 Round 4: The Jedi and Sith clash!
5 Round 5: The Jedi and Sith clash!
6
```

C

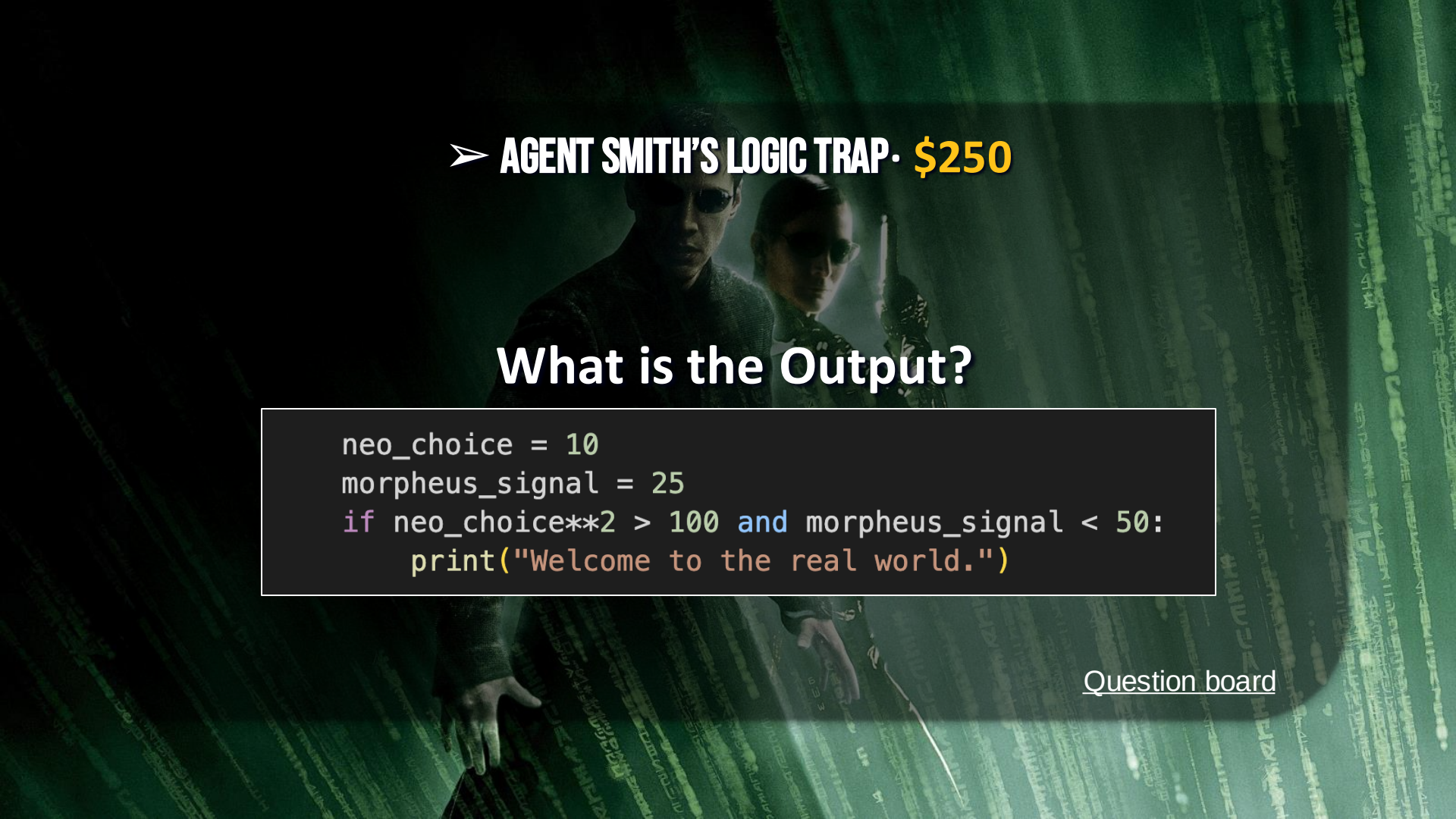
```
1 Round 1: The Jedi and Sith clash!
2 Round 2: The Jedi and Sith clash!
3 Round 3: The Jedi and Sith clash!
4 Round 4: The Jedi and Sith clash!
5 Round 5: The Jedi and Sith clash!
```

D

```
1 Round 1: The Jedi and Sith clash!
2
3 Round 2: The Jedi and Sith clash!
4
5 Round 3: The Jedi and Sith clash!
6
7 Round 4: The Jedi and Sith clash!
8
9 Round 5: The Jedi and Sith clash!
```

Question board


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

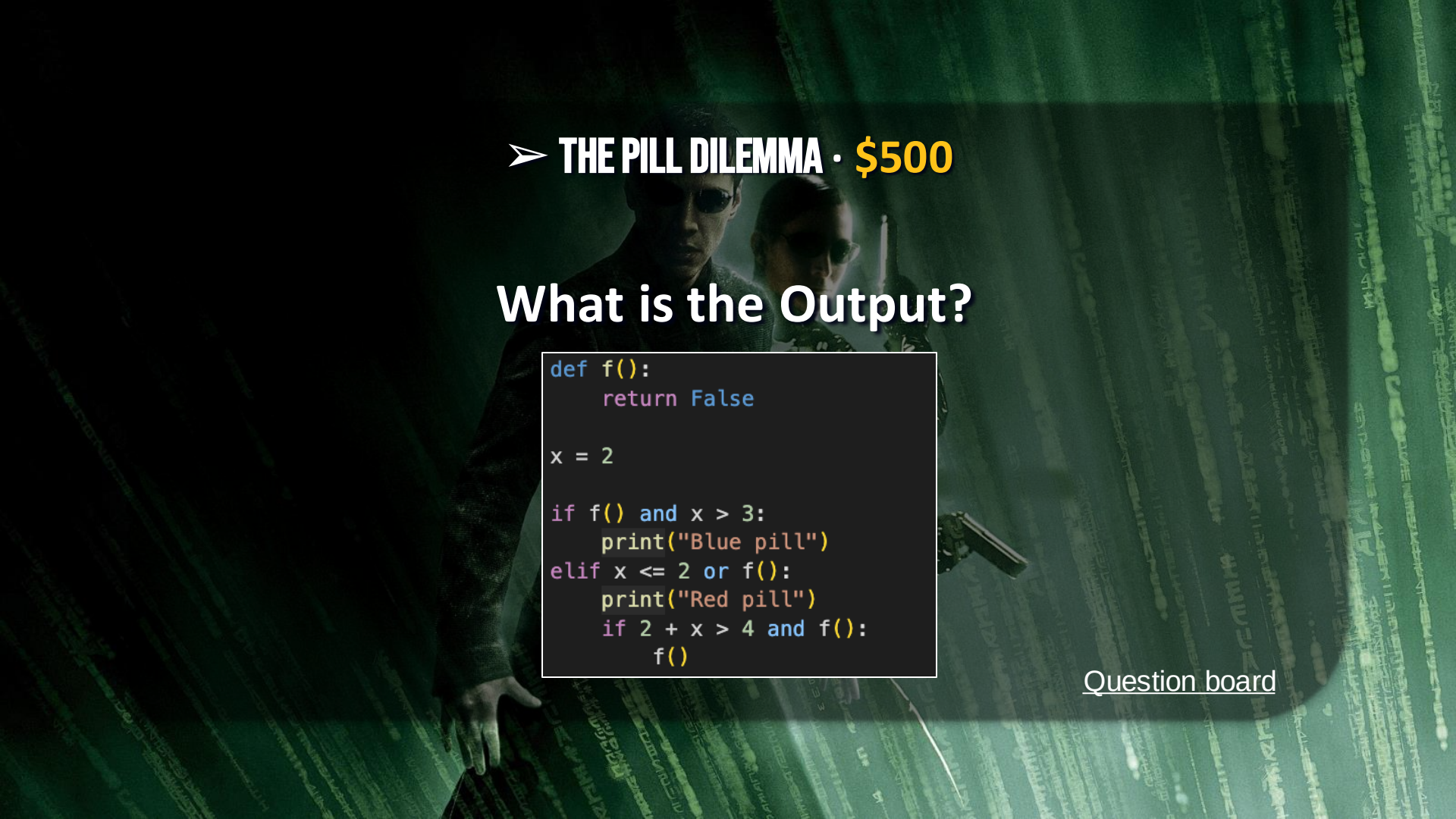


➢ AGENT SMITH'S LOGIC TRAP· $250

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 PILL DILEMMA · $500

What is the Output?

```python
def f():
    return False

x = 2

if f() and x > 3:
    print("Blue pill")
elif x <= 2 or f():
    print("Red pill")
    if 2 + x > 4 and f():
        f()
```

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
```

Question board

➢ 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

➢ WHERE IS HE?!· $1000

Select the missing function body from the options below

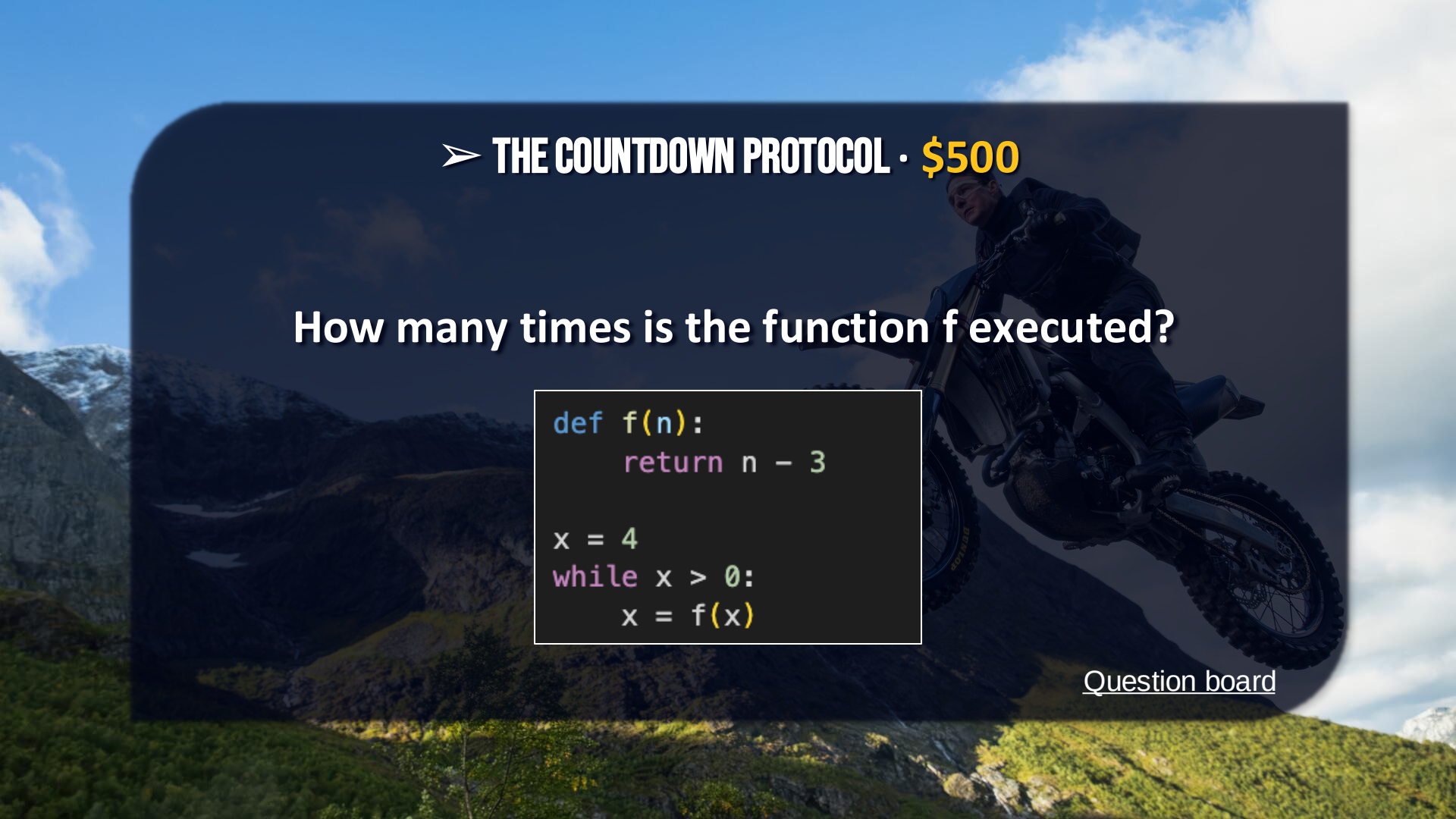
```
def where_is_batman(city):
    """Gotham needs to know where he is..."""
    # Missing Function Body

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


MISSION:
CODE EXTRACTION
Because every piece of logic is part of a classified operation! ⏳💥


➢ TIMER RESET· $250
What is the output?
counter = 1
time = 60 * counter
counter += 1
time = 60 * counter
print(time)
Question board



➢ THE COUNTDOWN PROTOCOL · $500

How many times is the function f executed?

```
def f(n):
    return n - 3

x = 4
while x > 0:
    x = f(x)
```

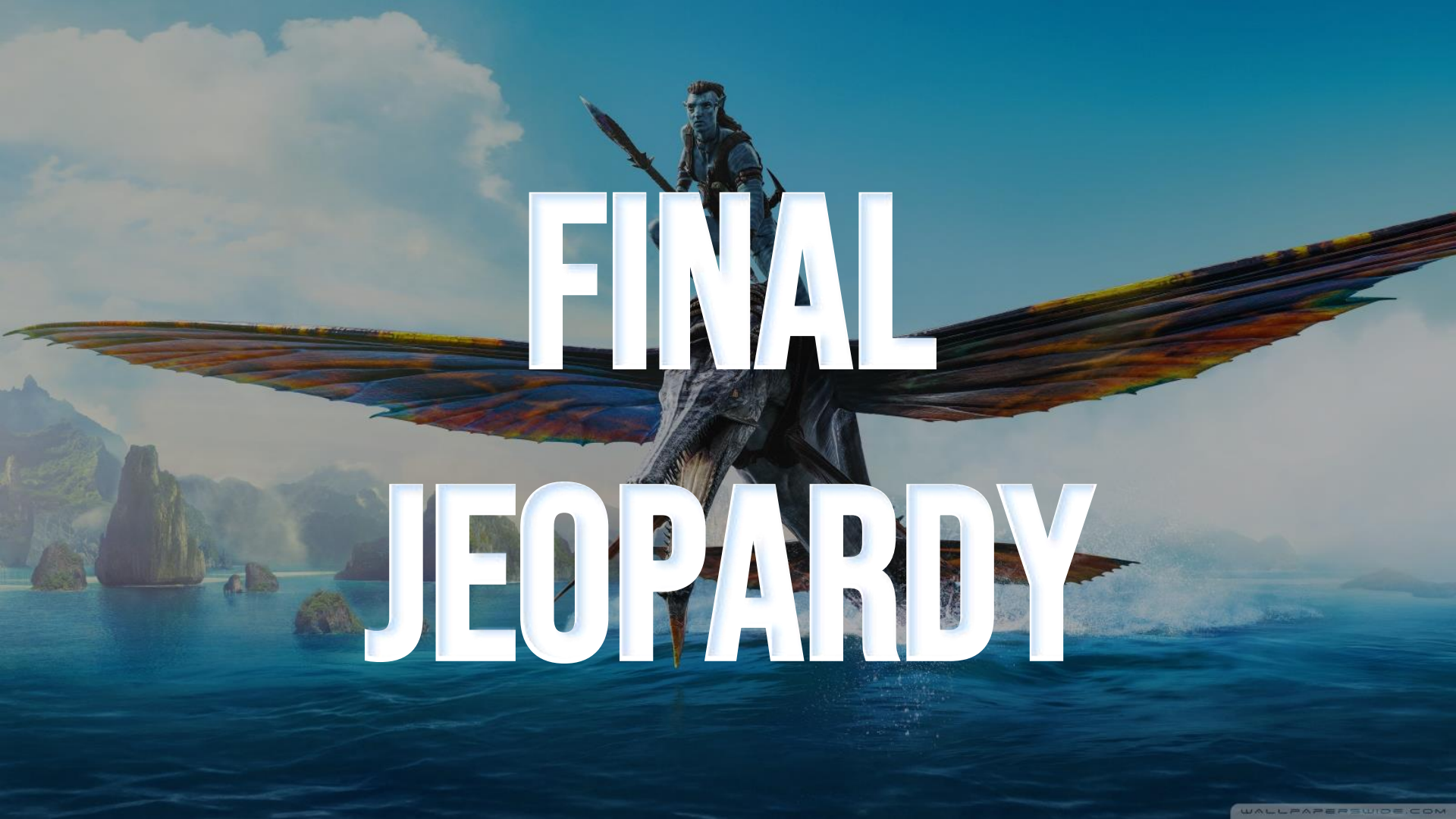
Question board

➢ THE LOOP TRAP · $1000

What will the code print?

```
i = 0
j = 6

while 0 < j < 10:

    print(i, end=" ")

    if j % 3 == 0:
        j = j // 2
    elif j % 2 == 0:
        j = j * 2
    else:
        j = j + 1

    i += 1
    print(j)
```

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 program using a function that prompts the user for a temperature and prints out whether Pandora's water is ice, liquid, or steam based on the temperature.

Question board