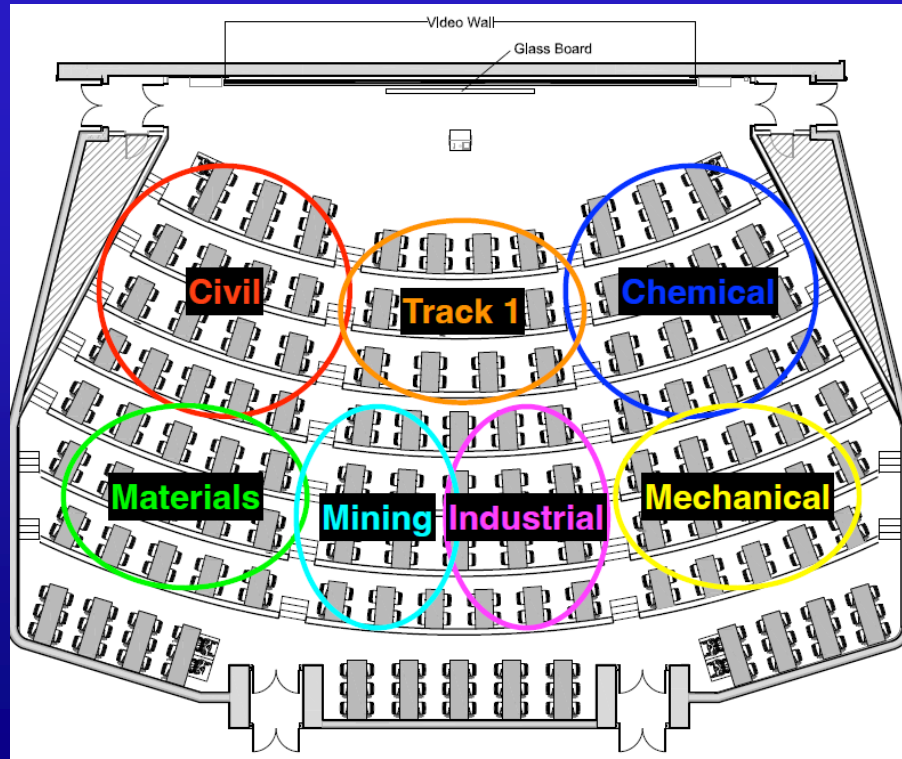


The background features a vibrant gradient from deep blue at the top to bright orange and red at the bottom. It is decorated with numerous white stars of varying sizes and a network of thin, white, curved lines that create a sense of depth and movement, resembling a stylized galaxy or a digital grid.

# AP S106

## 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	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



A close-up, front-facing image of Darth Vader's helmet and upper torso. The helmet is black with a silver-colored breathing apparatus. The background is dark. The text "LOOP WARS" is overlaid on the lower part of the image.

# 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

A promotional image for the movie 'The Matrix'. It features Keanu Reeves as Neo and Laurence Fishburne as Morpheus. They are both wearing dark suits and sunglasses. Neo is in the foreground, looking directly at the camera. Morpheus is slightly behind him, holding a handgun. The background is a dark green space filled with vertical streaks of glowing green code, reminiscent of the 'Matrix rain' effect. The overall mood is mysterious and high-tech.

# 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?

```
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.

A dramatic, low-angle shot of Batman standing in the center of a destroyed Gotham City. He is silhouetted against a bright, chaotic explosion or fire in the background. Debris is flying through the air, and the surrounding skyscrapers are dark and damaged. The overall tone is dark and gritty.

# THE BATCODE RISES



## ➤ 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



A promotional image for the movie Avatar: The Way of Water. It features the character Sully (Jake Sully) riding his banshee over the ocean. The banshee's wings are spread wide, showing a vibrant rainbow-like pattern. Sully is holding a spear. The background shows a tropical coastline with jagged rock formations and a blue sky with clouds. The text "FINAL JEOPARDY" is overlaid in large, white, 3D block letters.

# 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](#)