

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	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



## ➤ THINGS AND STRINGS · \$250

# What is the output?

```
message = "THE UPSIDE DOWN"  
print(message[4:-4])
```

[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](#)



## ➤ CRACKING ELEVEN'S CODE · \$1000

Provide the print statement that will give this output?

```
my_name = "MIRKWOOD"  
for i in range(len(my_name)):  
    ...
```



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[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



## ➤ THE LOOP AWAKENS · \$250

What are the values of var 1 and var 2 after the following code segment is executed and the while loop finishes?

```
var1 = 0;  
var2 = 2;  
  
while ((var2!=0) and ((var1 / var2) >= 0)):  
    var1 = var1 + 1;  
    var2 = var2 - 1;
```

[Question board](#)

A close-up, front-facing view of Darth Vader's iconic black helmet. The helmet is highly reflective, showing highlights and shadows that define its shape. The visor is dark and rectangular, with a small, glowing red light visible in the center. The background is dark, making the helmet stand out.

## ➤ DUEL OF THE STRINGS. \$500

What is the output?

```
print("Yoda" > "YodA")  
print("Obi-Wan" < "Obi")
```

[Question board](#)

A close-up, dark image of Darth Vader's helmet, which serves as the background for the slide. The helmet is metallic and has a central vertical ridge.

## ➤ DARTH DEBUGGING · \$1000

Verbally explain what happens in the following piece of code:

```
n = 10
answer = 1
while n > 0:
    answer = answer + n
    n = n + 1
print (answer)
```

[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.

➤ RED PILL OR BLUE PILL? · \$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 == "real_world"` or `matrix == "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  
  
print(f"Gotham's power level: {bat_signal2}")
```

[Question board](#)



## ➤ YOU EITHER DIE A HERO · \$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?

- ☐ You're Two-Face.
- ☐ You're Batman.  
You're Two-Face.
- ☐ You're Batman.  
You're Two-Face.  
You're Joker.
- ☐ You're Two-Face.  
You're Joker.

[Question board](#)

## ➤ IT'S ALL PART OF THE PLAN · \$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

- ☐ return city  
print(city)
- ☐ print(city)
- ☐ print(city)  
return city
- ☐ return city

[Question board](#)



# 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



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 has large, colorful wings with a rainbow-like pattern. Sully is holding a spear. The background shows a tropical island with jagged rock formations and a blue sky with clouds. The text "FINAL JEOPARDY" is overlaid in large, white, 3D block letters.

# FINAL JEOPARDY

A Na'vi warrior is riding a banshee over the ocean in Pandora. The warrior is holding a spear and looking forward. The banshee is in flight, with its wings spread. The background shows the ocean and some distant landmasses under a blue sky with clouds.

## ➤ 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](#)