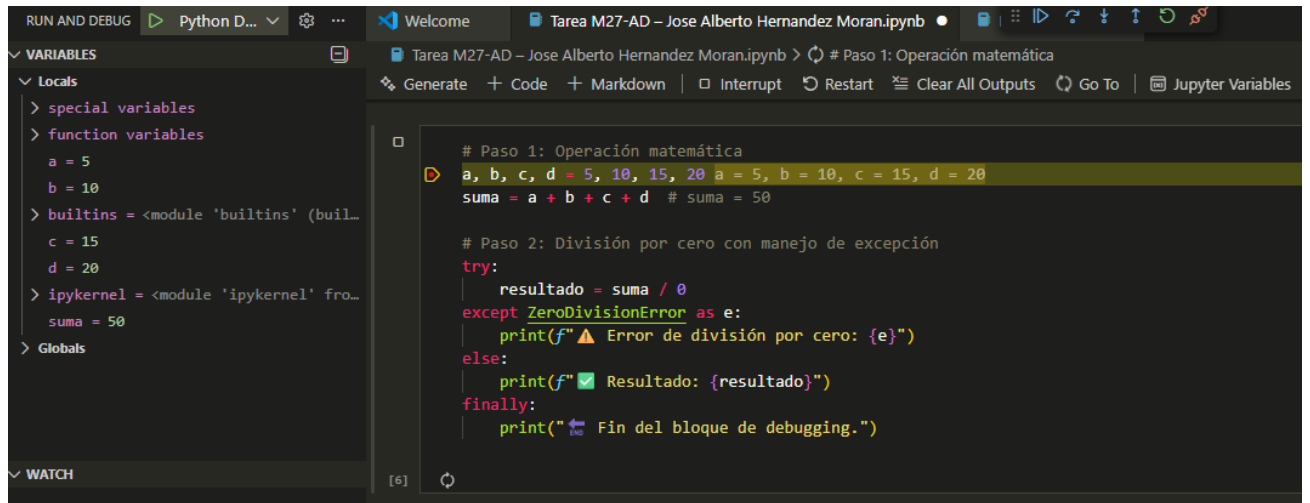


Proceso de debugging

Después de poner un breakpoint en la primera línea se activa el modo debugging:

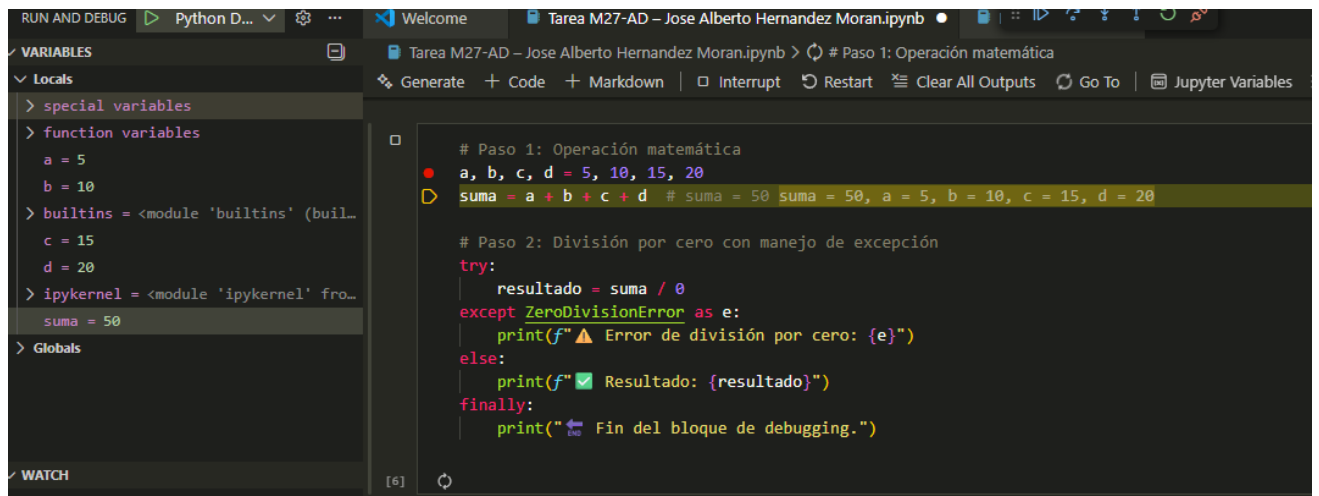


The screenshot shows a Jupyter Notebook interface with a dark theme. On the left, the 'VARIABLES' pane is expanded to 'Locals', showing variables: `a = 5`, `b = 10`, `c = 15`, `d = 20`, `suma = 50`, and `ipykernel`. The main code area shows two code blocks. The first block, '# Paso 1: Operación matemática', has a yellow breakpoint icon on line 1: `a, b, c, d = 5, 10, 15, 20`. The second block, '# Paso 2: División por cero con manejo de excepción', contains a try-except-else-finally structure. The output area at the bottom shows the execution of the first block, resulting in `suma = 50`.

```
# Paso 1: Operación matemática
a, b, c, d = 5, 10, 15, 20
suma = a + b + c + d # suma = 50

# Paso 2: División por cero con manejo de excepción
try:
    resultado = suma / 0
except ZeroDivisionError as e:
    print(f"⚠ Error de división por cero: {e}")
else:
    print(f"✅ Resultado: {resultado}")
finally:
    print(f"🛑 Fin del bloque de debugging.")
```

Segunda línea:

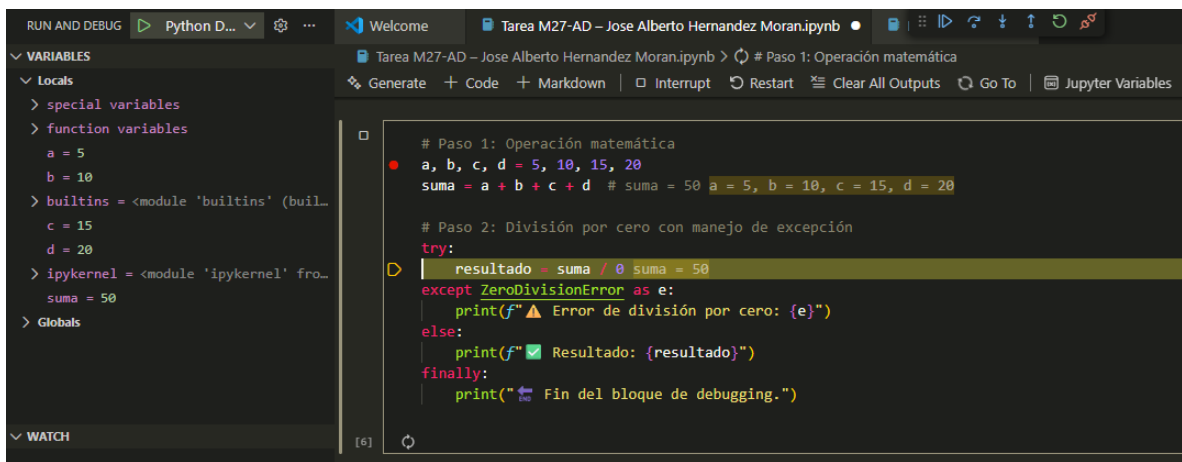


The screenshot shows the same Jupyter Notebook interface. The 'VARIABLES' pane is still expanded to 'Locals', showing the same variables. The main code area shows the same two code blocks. The first block now has a red dot breakpoint icon on line 2: `suma = a + b + c + d`. The second block remains the same. The output area at the bottom shows the execution of the first block, resulting in `suma = 50`.

```
# Paso 1: Operación matemática
a, b, c, d = 5, 10, 15, 20
suma = a + b + c + d # suma = 50 suma = 50, a = 5, b = 10, c = 15, d = 20

# Paso 2: División por cero con manejo de excepción
try:
    resultado = suma / 0
except ZeroDivisionError as e:
    print(f"⚠ Error de división por cero: {e}")
else:
    print(f"✅ Resultado: {resultado}")
finally:
    print(f"🛑 Fin del bloque de debugging.")
```

Tercera línea inicia el código de la división en cero:



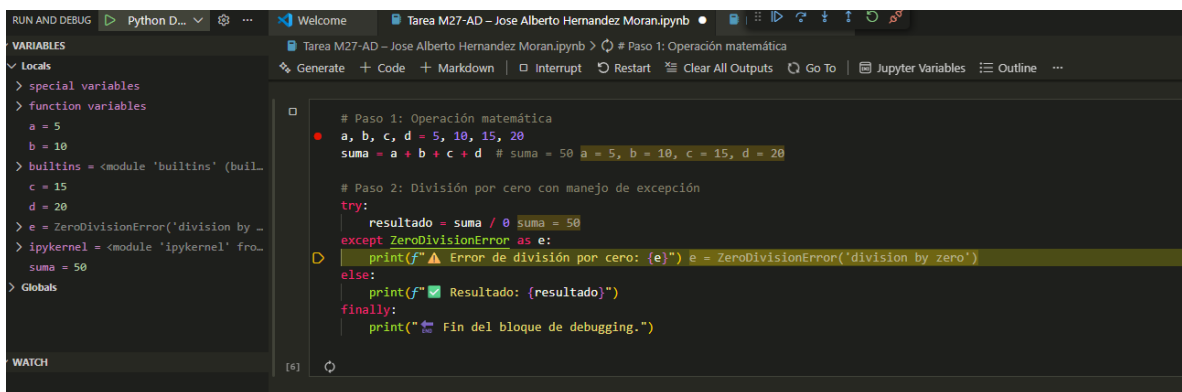
The screenshot shows a Jupyter Notebook interface with the following components:

- Top Bar:** "RUN AND DEBUG" button, "Python D..." dropdown, and "Tarea M27-AD - Jose Alberto Hernandez Moran.ipynb" title.
- Left Panel (VARIABLES):**
 - Locals:**
 - special variables
 - function variables
 - a = 5
 - b = 10
 - builtins = <module 'builtins' (built-in)>
 - c = 15
 - d = 20
 - ipykernel = <module 'ipykernel' from 'C:\ProgramData\Anaconda3\python.exe'>
 - suma = 50
 - Globals:**
- Right Panel (Code):**

```
# Paso 1: Operación matemática
a, b, c, d = 5, 10, 15, 20
suma = a + b + c + d # suma = 50 a = 5, b = 10, c = 15, d = 20

# Paso 2: División por cero con manejo de excepción
try:
    resultado = suma / 0 suma = 50
except ZeroDivisionError as e:
    print(f"⚠ Error de división por cero: {e}")
else:
    print(f"✅ Resultado: {resultado}")
finally:
    print("🛑 Fin del bloque de debugging.")
```
- Bottom Panel (WATCH):** Empty.

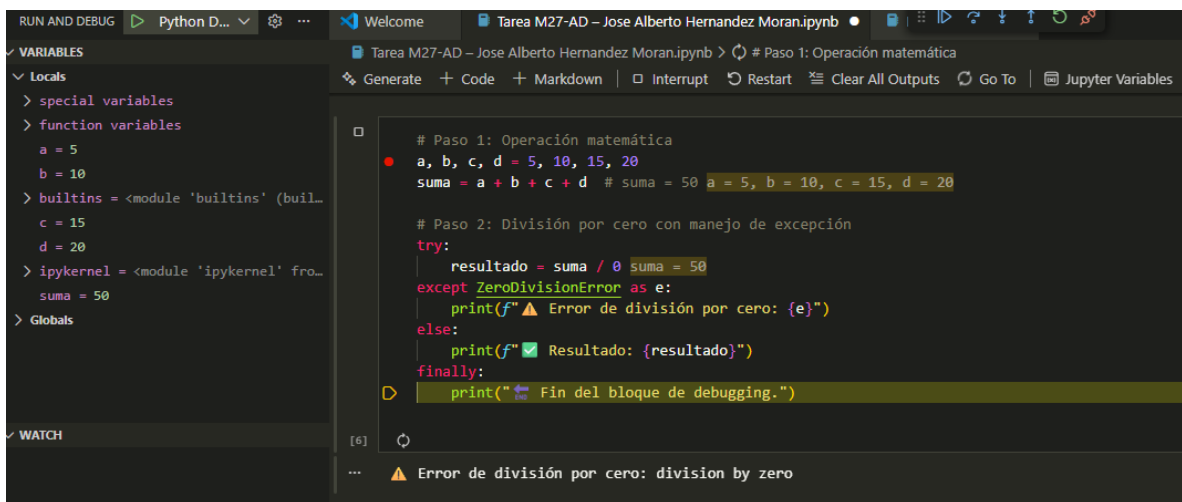
Cuarta línea:



The screenshot shows the same Jupyter Notebook interface as the previous one, but with the following changes:

- Left Panel (VARIABLES):**
 - Locals:**
 - special variables
 - function variables
 - a = 5
 - b = 10
 - builtins = <module 'builtins' (built-in)>
 - c = 15
 - d = 20
 - e = ZeroDivisionError('division by zero')
 - ipykernel = <module 'ipykernel' from 'C:\ProgramData\Anaconda3\python.exe'>
 - suma = 50
 - Globals:**
- Right Panel (Code):** The same code as before, but the line `print(f"⚠ Error de división por cero: {e}")` is now highlighted in yellow.
- Bottom Panel (WATCH):** Empty.

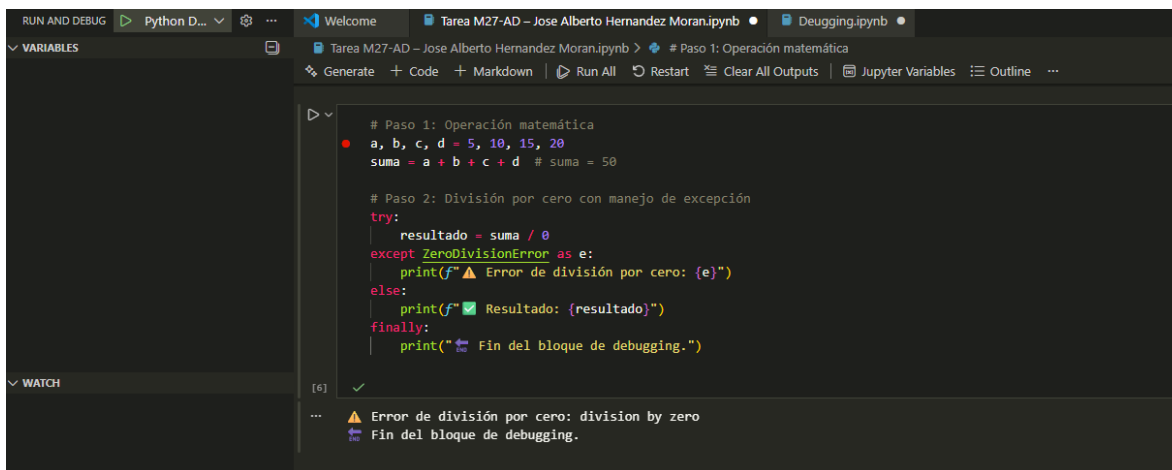
Quinta línea:



The screenshot shows the same Jupyter Notebook interface as the previous ones, but with the following changes:

- Left Panel (VARIABLES):** The same as the previous screenshot.
- Right Panel (Code):** The same code as before, but the line `print("🛑 Fin del bloque de debugging.")` is now highlighted in yellow.
- Bottom Panel (WATCH):** Empty.
- Output Area:** A new line of output is visible at the bottom: `⚠ Error de división por cero: division by zero`.

Se muestra el resultado final:



The screenshot shows a Jupyter Notebook interface with a dark theme. The top bar includes 'RUN AND DEBUG', 'Python D...', and a file explorer showing 'Tarea M27-AD - Jose Alberto Hernandez Moran.ipynb' and 'Deugging.ipynb'. The left sidebar has 'VARIABLES' and 'WATCH' sections. The main area displays a Python script with two steps: a mathematical operation and a division by zero with exception handling. The output shows a ZeroDivisionError and a final debug message.

```
# Paso 1: Operación matemática
a, b, c, d = 5, 10, 15, 20
suma = a + b + c + d # suma = 50

# Paso 2: División por cero con manejo de excepción
try:
    resultado = suma / 0
except ZeroDivisionError as e:
    print(f"⚠ Error de división por cero: {e}")
else:
    print(f"✅ Resultado: {resultado}")
finally:
    print("🔚 Fin del bloque de debugging.")
```

[6] ✓

... ⚠ Error de división por cero: division by zero
🔚 Fin del bloque de debugging.