



Universidad Nacional Autónoma de México

Facultad de Estudios Superiores Aragón



Ingeniería en
Computación

Diseño y análisis de
algoritmos

TAREA 8

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The image shows a Visual Studio Code editor with a Python file named `laberinto.py` open. The code is a maze solver using backtracking and a stack. The maze is represented as a 2D grid where 0 is a path and 1 is a wall. The solver starts at the entrance (row 1, column 1) and finds the exit (row 10, column 10).

```
laberinto.py > main
110 def main():
111     nombre_archivo = "laberinto.txt"
112     laberinto, entrada, salida = leer_laberinto(nombre_archivo)
113
114     pygame.init()
115     tam_celda = 25
116     ancho = len(laberinto[0]) * tam_celda
117     alto = len(laberinto) * tam_celda
118     pantalla = pygame.display.set_mode((ancho, alto))
119     pygame.display.set_caption("Laberinto con Backtracking y Pila")
120
121     resolver_laberinto(laberinto, entrada, salida, pantalla)
122     terminado = False
123     while not terminado:
124         for evento in pygame.event.get():
125             if evento.type == pygame.QUIT:
126                 terminado = True
127
128     pygame.quit()
129
130
131 if __name__ == "__main__":
132     main()
133
```

The execution window shows the following output:

```
ata\Local\Programs\Python\Python312\python.exe 'c:\Users\braya\.vscode\extensions\ms-python.debugpy-2025.14.1-win32-x64\bundled\libs\debugpy\1
auncher' '60052' '--' 'C:\Users\braya\OneDrive\Documentos\Tarea 8 laberinto\laberinto.py'
pygame 2.6.0 (SDL 2.28.4, Python 3.12.3)
Hello from the pygame community. https://www.pygame.org/contribute.html
PS C:\Users\braya\OneDrive\Documentos\Tarea 8 laberinto> ^C
PS C:\Users\braya\OneDrive\Documentos\Tarea 8 laberinto>
PS C:\Users\braya\OneDrive\Documentos\Tarea 8 laberinto> c.; cd 'c:\Users\braya\OneDrive\Documentos\Tarea 8 laberinto'; & 'c:\Users\braya\AppData\Local\Programs\Python\Python312\python.exe' 'c:\Users\braya\.vscode\extensions\ms-python.debugpy-2025.14.1-win32-x64\bundled\libs\debugpy\1
auncher' '60069' '--' 'C:\Users\braya\OneDrive\Documentos\Tarea 8 laberinto\laberinto.py'
pygame 2.6.0 (SDL 2.28.4, Python 3.12.3)
Hello from the pygame community. https://www.pygame.org/contribute.html
```