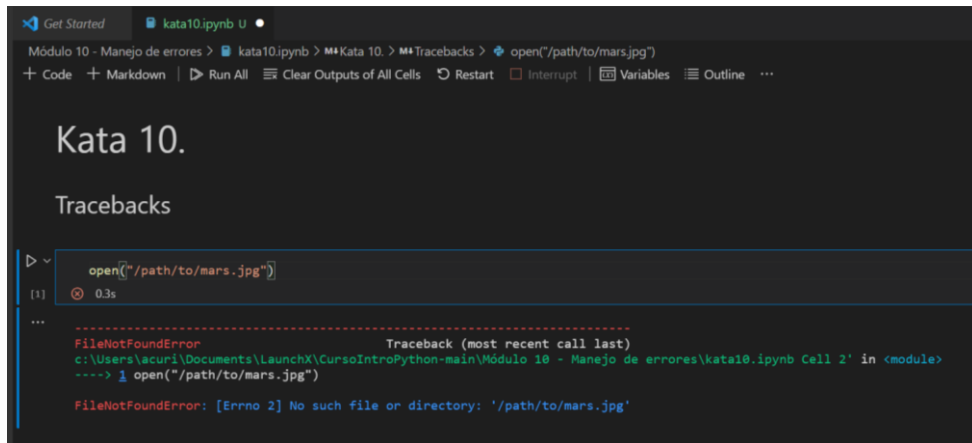


## Kata 10. Manejo de errores.

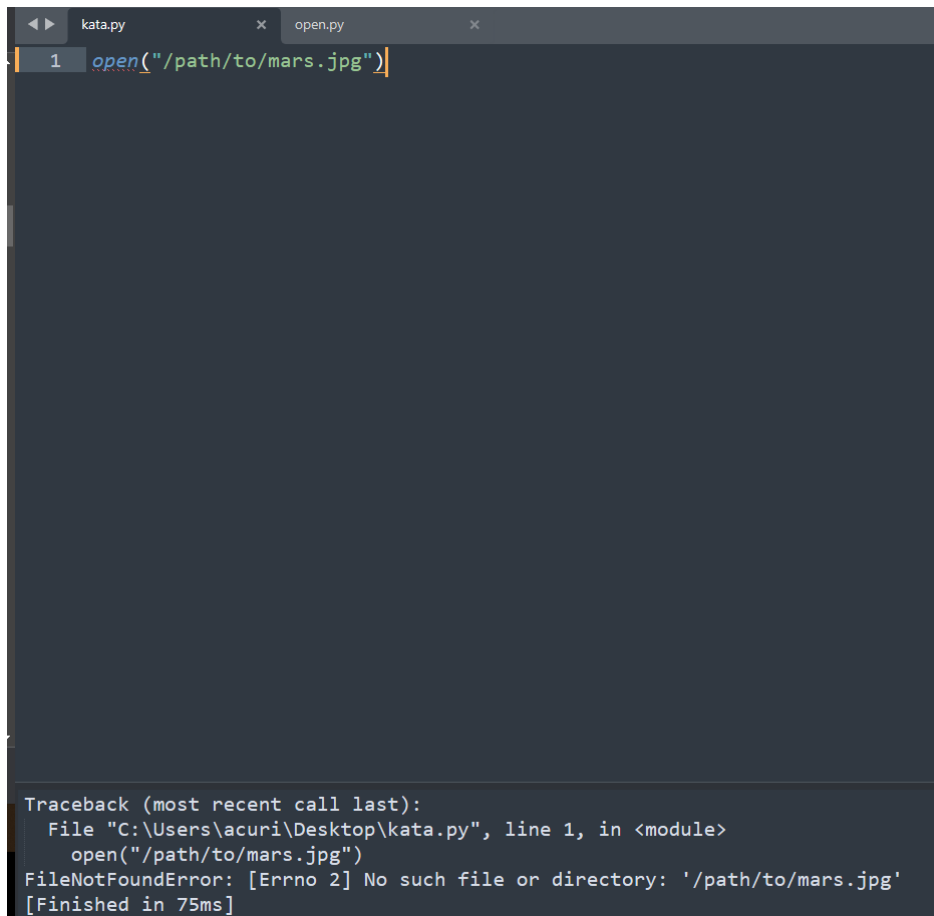
### Tracebacks

Abrir un archivo inexistente con un notebook y un archivo .py.



The screenshot shows a Jupyter Notebook interface with a dark theme. The title bar indicates the notebook is named 'kata10.ipynb'. The top toolbar shows various icons for running and managing the notebook. The main content area has the title 'Kata 10.' and a subtitle 'Tracebacks'. Below this, a code cell is shown with the command `open("/path/to/mars.jpg")`. The output of the cell displays a `FileNotFoundError` traceback, indicating that the file does not exist at the specified path.

```
open("/path/to/mars.jpg")
[1] 0.3s
...
-----
FileNotFoundError: Traceback (most recent call last)
c:\Users\acuri\Documents\LaunchX\CursoIntroPython-main\Módulo 10 - Manejo de errores\kata10.ipynb Cell 2' in <module>
----> 1 open("/path/to/mars.jpg")
FileNotFoundError: [Errno 2] No such file or directory: '/path/to/mars.jpg'
```

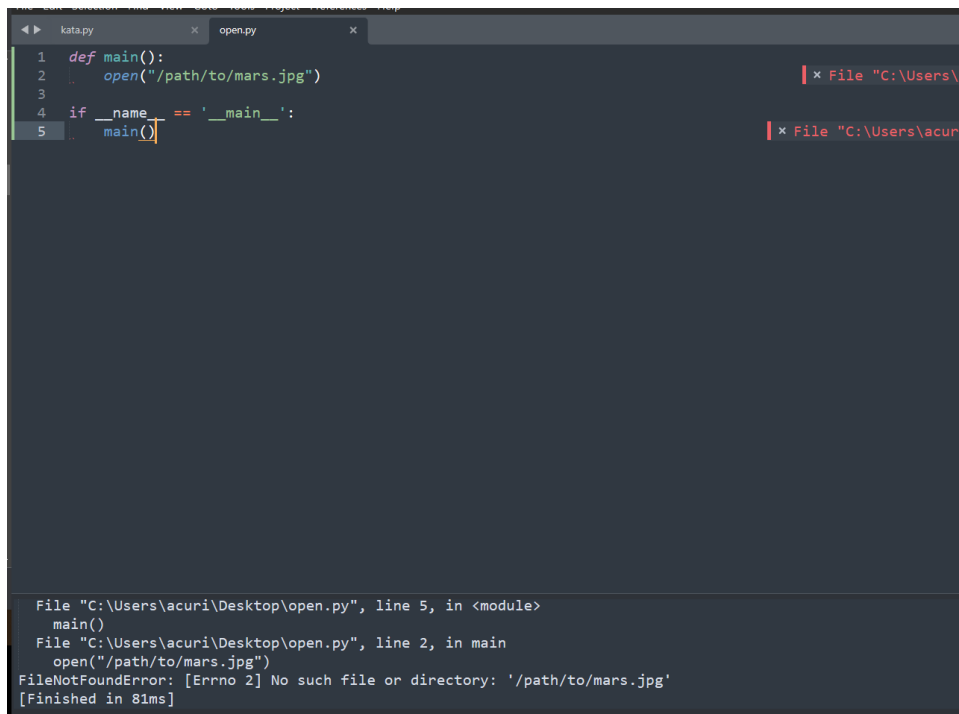


The screenshot shows a Python script editor with two tabs: 'kata.py' and 'open.py'. The 'kata.py' tab is active, showing a single line of code: `open("/path/to/mars.jpg")`. The output area at the bottom displays a `FileNotFoundError` traceback, indicating that the file does not exist at the specified path.

```
1 open("/path/to/mars.jpg")

Traceback (most recent call last):
  File "C:\Users\acuri\Desktop\kata.py", line 1, in <module>
    open("/path/to/mars.jpg")
FileNotFoundError: [Errno 2] No such file or directory: '/path/to/mars.jpg'
[Finished in 75ms]
```

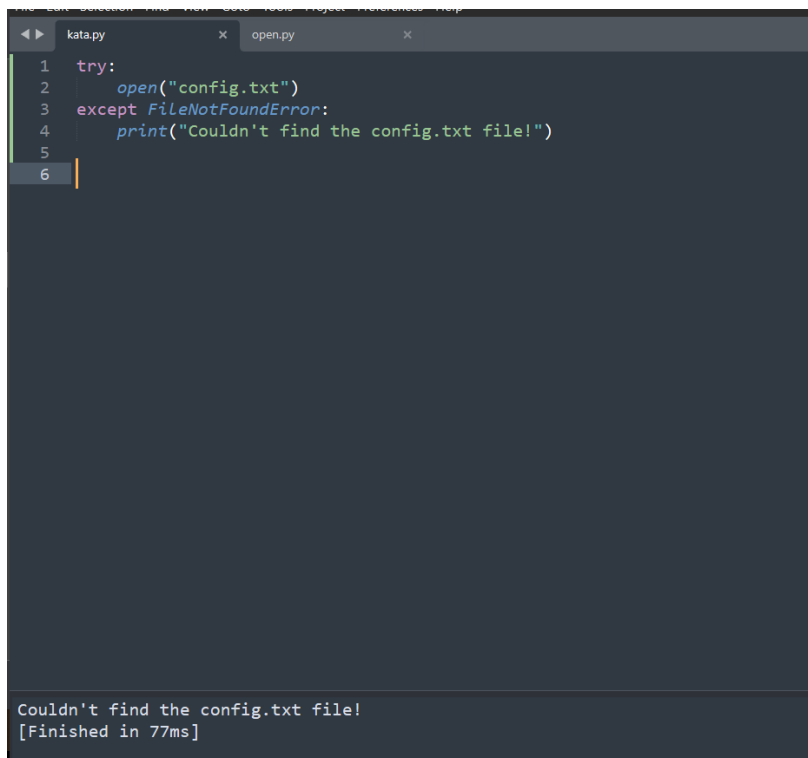
Crear un archivo de Python y asígnale el nombre *open.py*, con el contenido siguiente:



```
1 def main():
2     open("/path/to/mars.jpg")
3
4 if __name__ == '__main__':
5     main()
```

File "C:\Users\acuri\Desktop\open.py", line 5, in <module>  
main()  
File "C:\Users\acuri\Desktop\open.py", line 2, in main  
open("/path/to/mars.jpg")  
FileNotFoundError: [Errno 2] No such file or directory: '/path/to/mars.jpg'  
[Finished in 81ms]

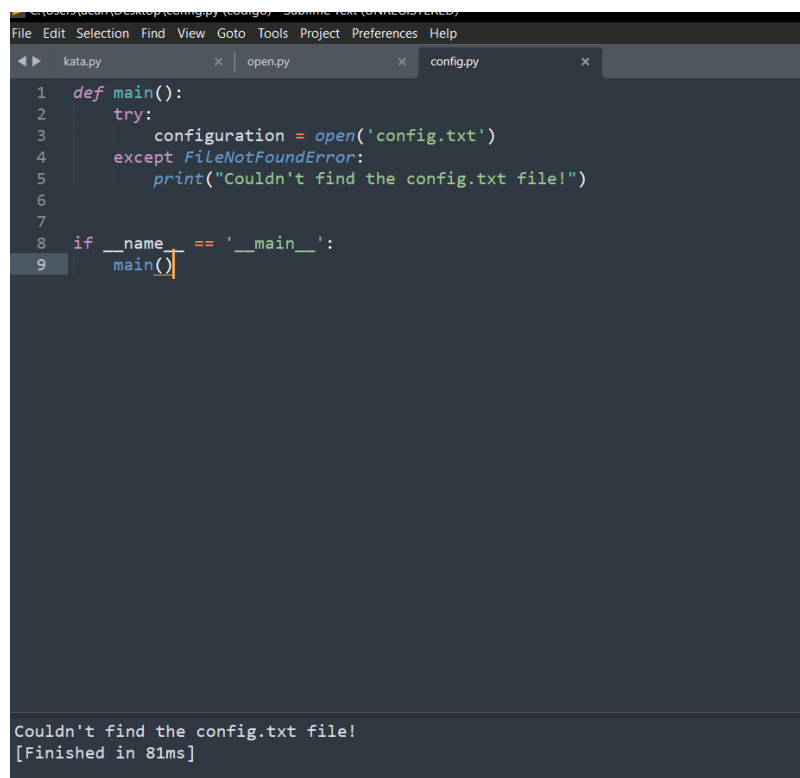
Usar Try y Except.



```
1 try:
2     open("config.txt")
3 except FileNotFoundError:
4     print("Couldn't find the config.txt file!")
5
6
```

Couldn't find the config.txt file!  
[Finished in 77ms]

Manejo de la excepción FileNotFoundError.

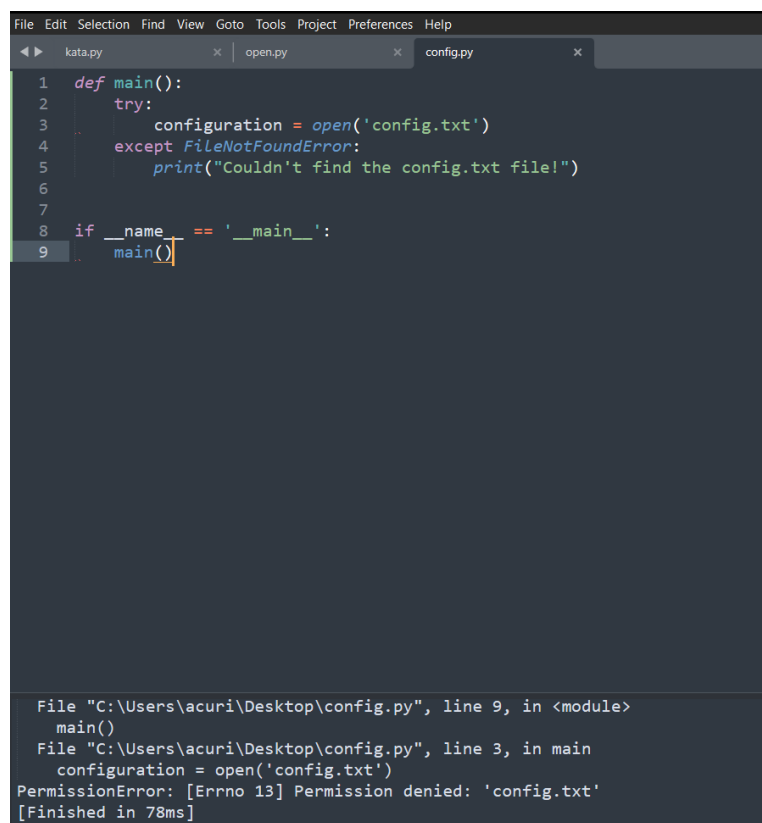


The screenshot shows a Python IDE with three tabs: `kata.py`, `open.py`, and `config.py`. The `config.py` tab is active, displaying the following code:

```
1 def main():
2     try:
3         configuration = open('config.txt')
4     except FileNotFoundError:
5         print("Couldn't find the config.txt file!")
6
7
8 if __name__ == '__main__':
9     main()
```

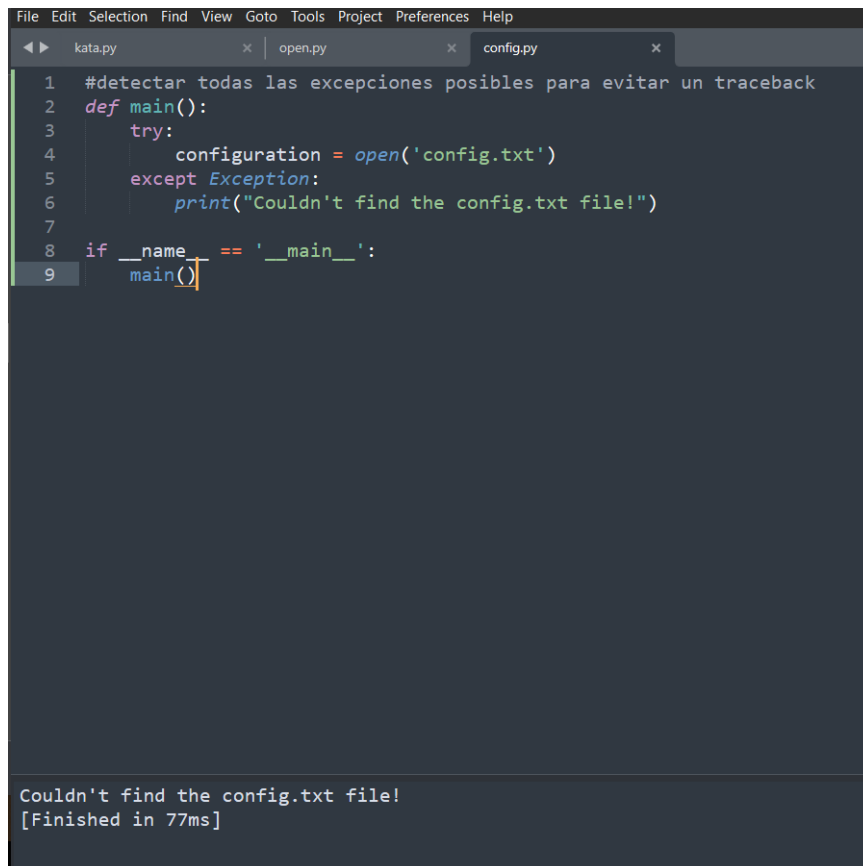
The output console at the bottom shows the message: "Couldn't find the config.txt file!" followed by "[Finished in 81ms]".

Crear una carpeta llamada config.txt y llamar config.py. Se tiene un Traceback por ser un error diferente.



The screenshot shows the same Python IDE with the same `config.py` code as the previous image. The output console at the bottom shows a different error: "PermissionError: [Errno 13] Permission denied: 'config.txt'" followed by "[Finished in 78ms]".

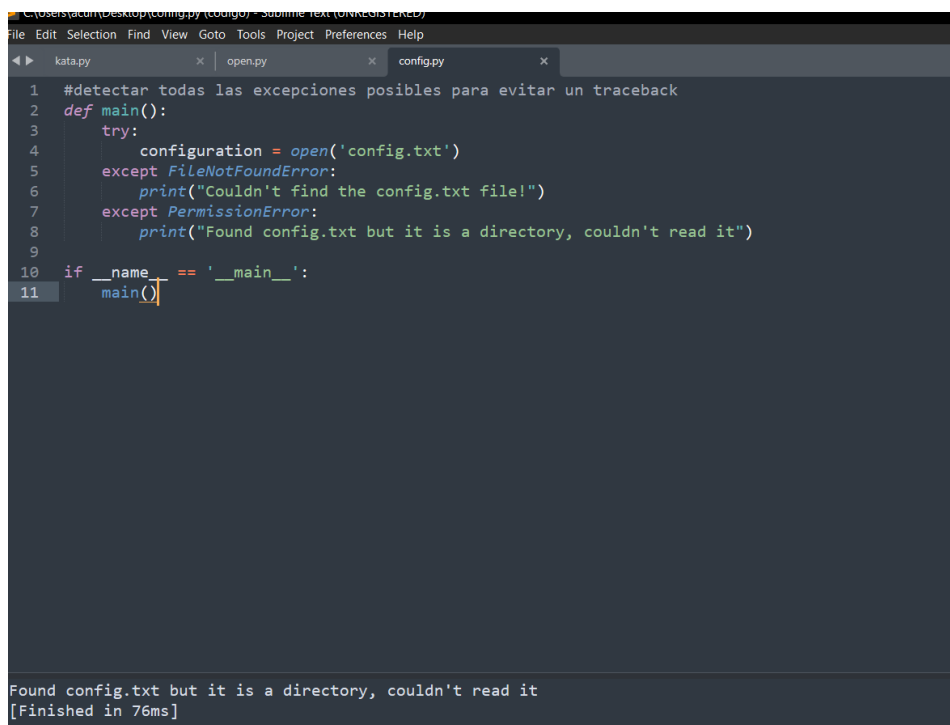
Detecta todas las excepciones.



```
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py open.py config.py
1 #detectar todas las excepciones posibles para evitar un traceback
2 def main():
3     try:
4         configuration = open('config.txt')
5     except Exception:
6         print("Couldn't find the config.txt file!")
7
8 if __name__ == '__main__':
9     main()

Couldn't find the config.txt file!
[Finished in 77ms]
```

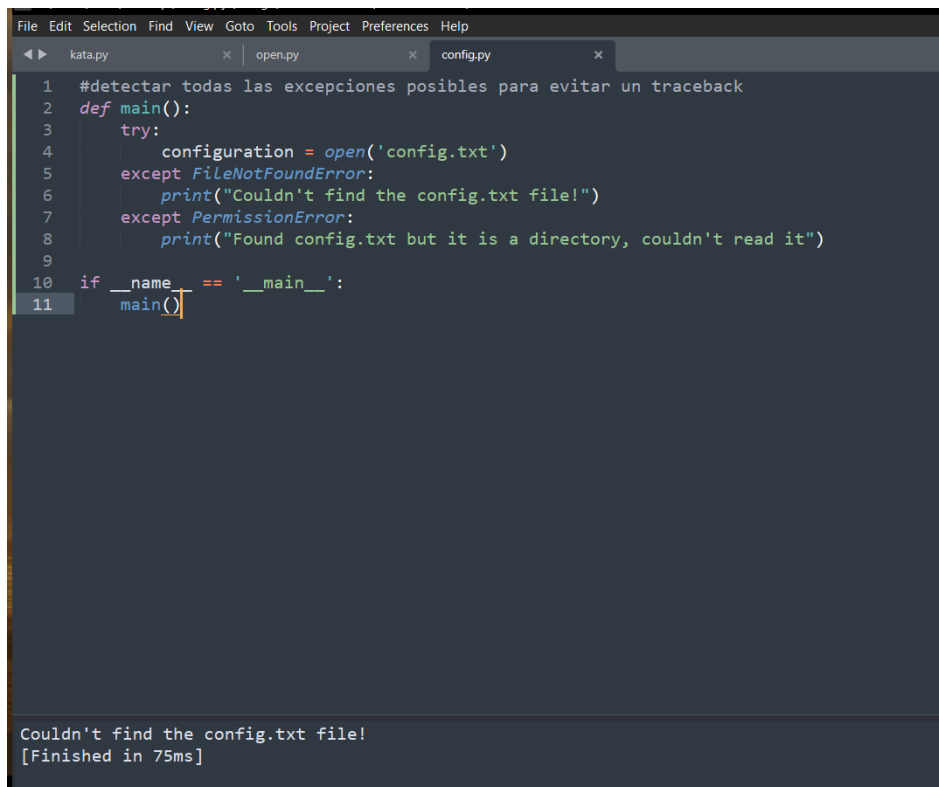
Código para abordar todas las frustraciones.



```
C:\Users\acdm\Desktop\config.py (config) - Sublime Text (fork) (restricted)
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py open.py config.py
1 #detectar todas las excepciones posibles para evitar un traceback
2 def main():
3     try:
4         configuration = open('config.txt')
5     except FileNotFoundError:
6         print("Couldn't find the config.txt file!")
7     except PermissionError:
8         print("Found config.txt but it is a directory, couldn't read it")
9
10 if __name__ == '__main__':
11     main()

Found config.txt but it is a directory, couldn't read it
[Finished in 76ms]
```

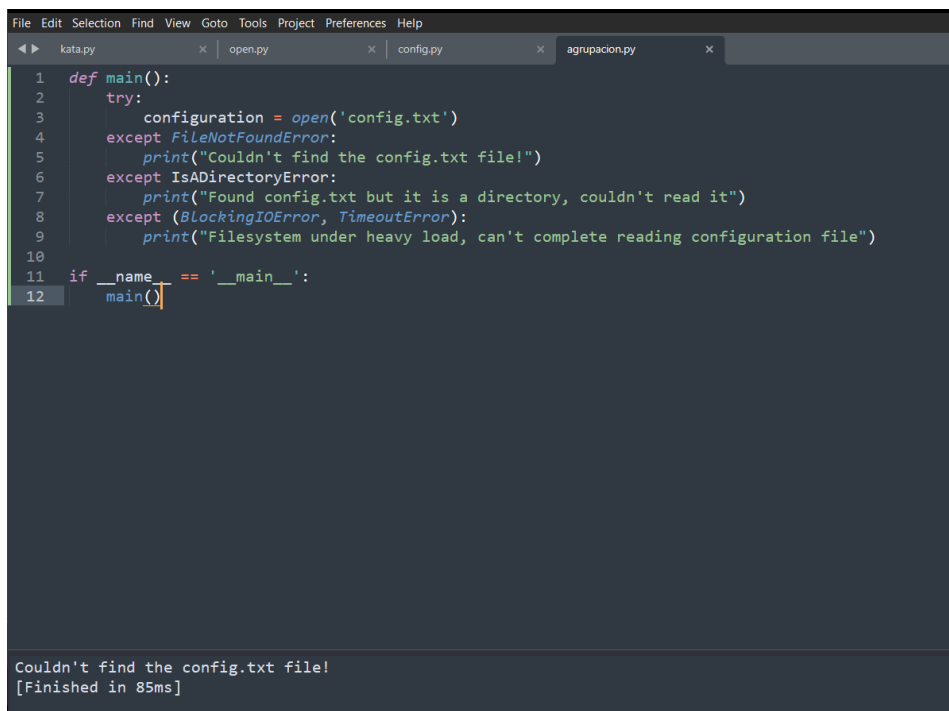
Se elimina el archivo config.txt para ver la primera excepción.



```
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py open.py config.py
1 #detectar todas las excepciones posibles para evitar un traceback
2 def main():
3     try:
4         configuration = open('config.txt')
5     except FileNotFoundError:
6         print("Couldn't find the config.txt file!")
7     except PermissionError:
8         print("Found config.txt but it is a directory, couldn't read it")
9
10 if __name__ == '__main__':
11     main()

Couldn't find the config.txt file!
[Finished in 75ms]
```

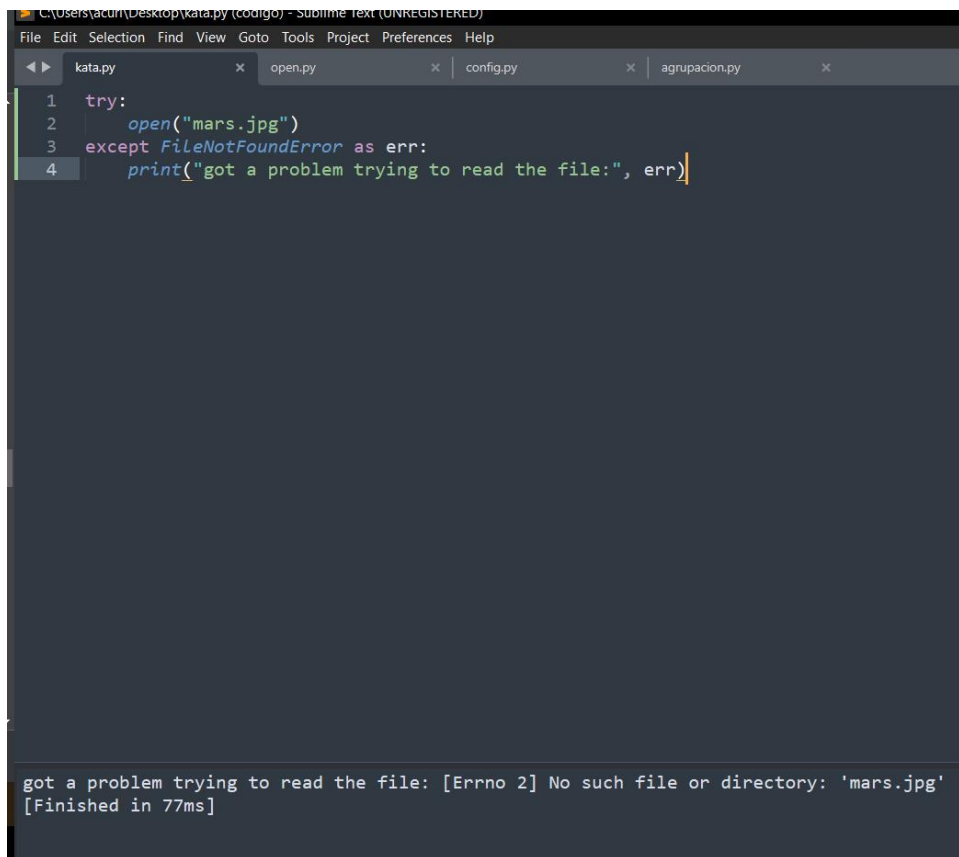
Agrupación de excepciones.



```
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py open.py config.py agrupacion.py
1 def main():
2     try:
3         configuration = open('config.txt')
4     except FileNotFoundError:
5         print("Couldn't find the config.txt file!")
6     except IsADirectoryError:
7         print("Found config.txt but it is a directory, couldn't read it")
8     except (BlockingIOError, TimeoutError):
9         print("Filesystem under heavy load, can't complete reading configuration file")
10
11 if __name__ == '__main__':
12     main()

Couldn't find the config.txt file!
[Finished in 85ms]
```

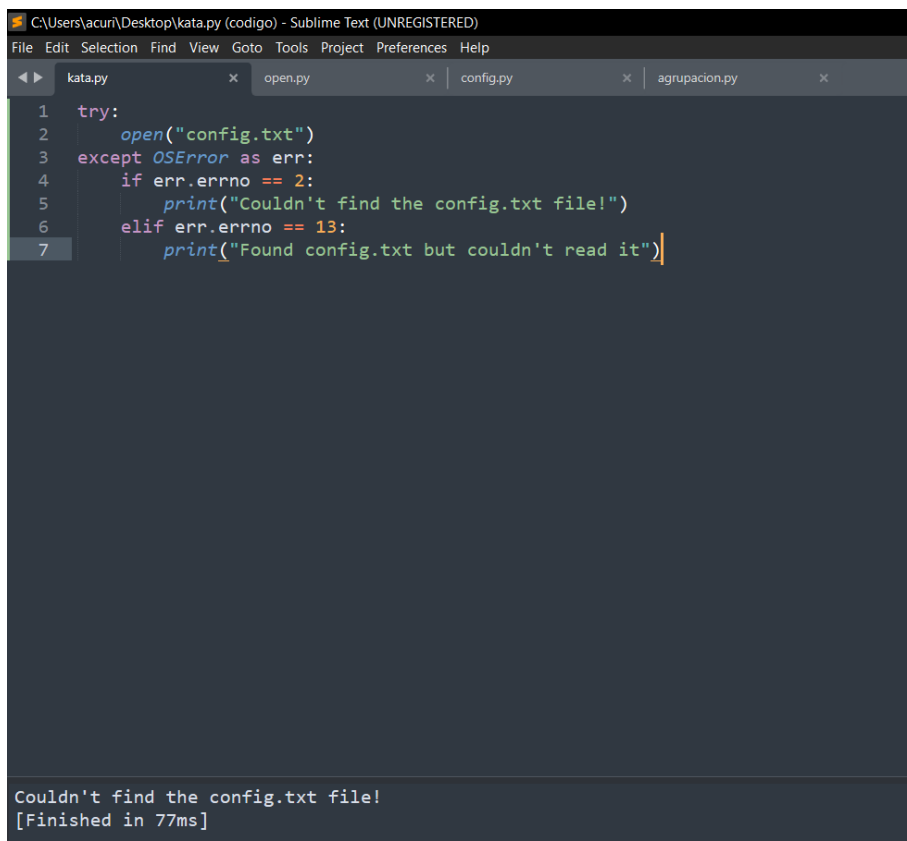
Como acceder a un error asociado a la excepción.



```
C:\Users\acur\Desktop\kata.py (codigo) - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py open.py config.py agrupacion.py
1 try:
2     open("mars.jpg")
3 except FileNotFoundError as err:
4     print("got a problem trying to read the file:", err)

got a problem trying to read the file: [Errno 2] No such file or directory: 'mars.jpg'
[Finished in 77ms]
```

Acceder directamente a los atributos del error.

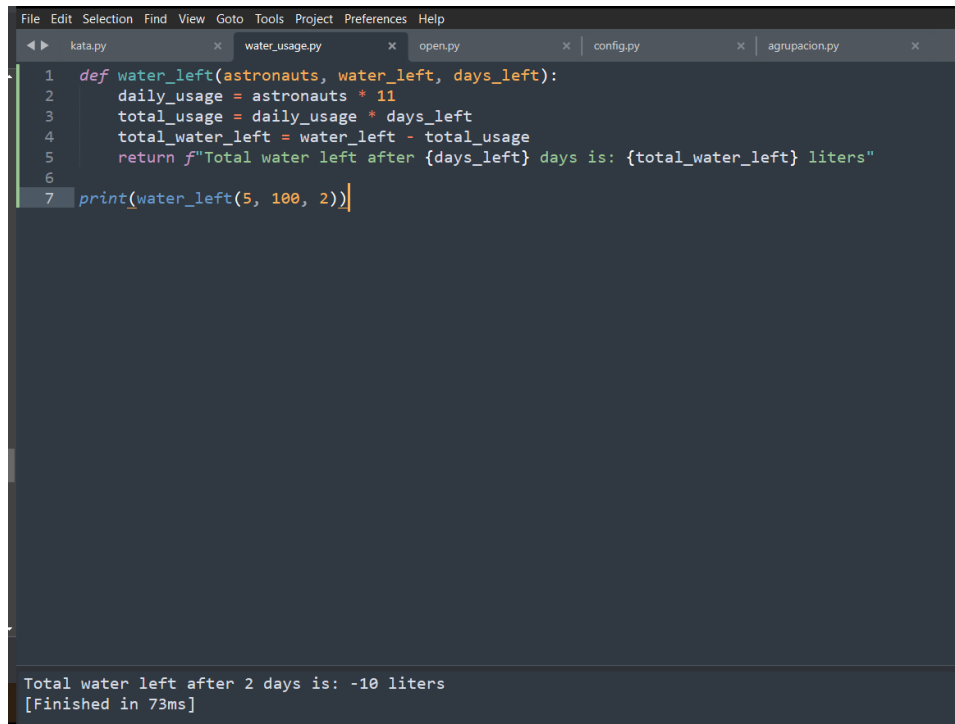


```
C:\Users\acur\Desktop\kata.py (codigo) - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py open.py config.py agrupacion.py
1 try:
2     open("config.txt")
3 except OSError as err:
4     if err.errno == 2:
5         print("Couldn't find the config.txt file!")
6     elif err.errno == 13:
7         print("Found config.txt but couldn't read it")

Couldn't find the config.txt file!
[Finished in 77ms]
```

Generación de excepciones.

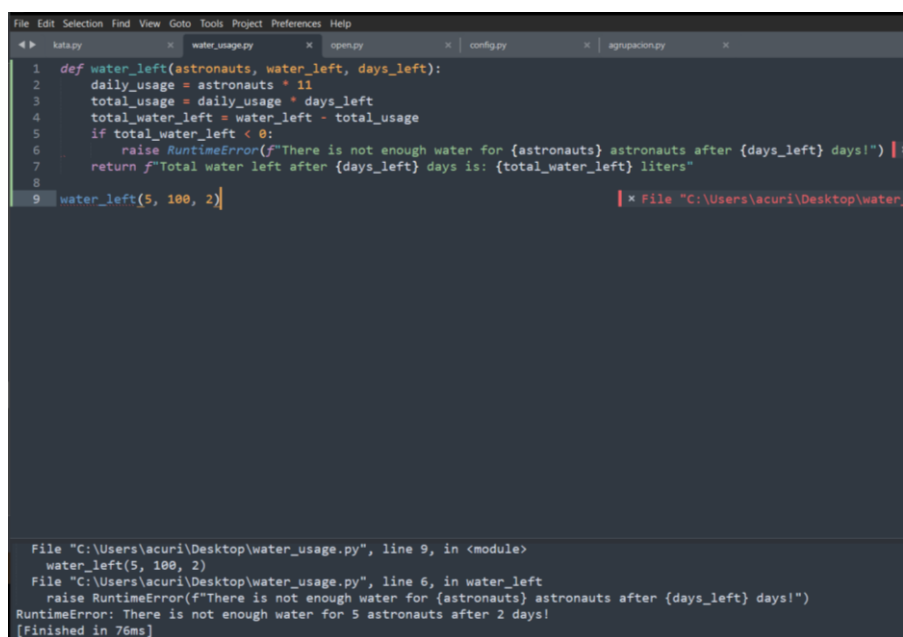
Los astronautas limitan su uso de agua a unos 11 litros al día. Vamos a crear una función que, con base al número de astronautas, pueda calcular la cantidad de agua quedará después de un día o más:



```
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py water_usage.py open.py config.py agrupacion.py
1 def water_left(astronauts, water_left, days_left):
2     daily_usage = astronauts * 11
3     total_usage = daily_usage * days_left
4     total_water_left = water_left - total_usage
5     return f"Total water left after {days_left} days is: {total_water_left} liters"
6
7 print(water_left(5, 100, 2))
```

Total water left after 2 days is: -10 liters  
[Finished in 73ms]

Crear excepción cuando total\_water\_left es menor a 0



```
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py water_usage.py open.py config.py agrupacion.py
1 def water_left(astronauts, water_left, days_left):
2     daily_usage = astronauts * 11
3     total_usage = daily_usage * days_left
4     total_water_left = water_left - total_usage
5     if total_water_left < 0:
6         raise RuntimeError(f"There is not enough water for {astronauts} astronauts after {days_left} days!")
7     return f"Total water left after {days_left} days is: {total_water_left} liters"
8
9 water_left(5, 100, 2)
```

File "C:\Users\acuri\Desktop\water\_usage.py", line 9, in <module>  
 water\_left(5, 100, 2)  
File "C:\Users\acuri\Desktop\water\_usage.py", line 6, in water\_left  
 raise RuntimeError(f"There is not enough water for {astronauts} astronauts after {days\_left} days!")  
RuntimeError: There is not enough water for 5 astronauts after 2 days!  
[Finished in 76ms]

Generar la alerta con RuntimeError.

```
C:\Users\acuri\Desktop\water_usage.py (codigo) - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py water_usage.py open.py config.py agrupacion.py
1 def water_left(astronauts, water_left, days_left):
2     daily_usage = astronauts * 11
3     total_usage = daily_usage * days_left
4     total_water_left = water_left - total_usage
5     if total_water_left < 0:
6         raise RuntimeError(f"There is not enough water for {astronauts} astronauts after {days_left} days!")
7     return f"Total water left after {days_left} days is: {total_water_left} liters"
8
9
10 try:
11     water_left(5, 100, 2)
12 except RuntimeError as err:
13     alert_navigation_system(err)
14
15
16

Traceback (most recent call last):
  File "C:\Users\acuri\Desktop\water_usage.py", line 13, in <module>
    alert_navigation_system(err)
NameError: name 'alert_navigation_system' is not defined
[Finished in 77ms]
```

Error de datos no admitidos.

```
C:\Users\acuri\Desktop\water_usage.py (codigo) - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
kata.py water_usage.py open.py config.py agrupacion.py
1 def water_left(astronauts, water_left, days_left):
2     daily_usage = astronauts * 11
3     total_usage = daily_usage * days_left
4     total_water_left = water_left - total_usage
5     if total_water_left < 0:
6         raise RuntimeError(f"There is not enough water for {astronauts} astronauts after {days_left} days!")
7     return f"Total water left after {days_left} days is: {total_water_left} liters"
8
9
10 try:
11     water_left(5.6, "100", 2)
12 except RuntimeError as err:
13     alert_navigation_system(err)
14
15
16

File "C:\Users\acuri\Desktop\water_usage.py", line 11, in <module>
    water_left(5.6, "100", 2)
File "C:\Users\acuri\Desktop\water_usage.py", line 4, in water_left
    total_water_left = water_left - total_usage
TypeError: unsupported operand type(s) for -: 'str' and 'float'
[Finished in 84ms]
```



Crear excepción `TypeError` en la función para indicar que se ingresaron datos no tipo enteros.

```
C:\Users\acuri\Desktop\water_usage.py (C:\Users\acuri\Desktop\water_usage.py)
File Edit Selection Find View Goto Tools Project Preferences Help
1 def water_left(astronauts, water_left, days_left):
2     for argument in [astronauts, water_left, days_left]:
3         try:
4             # If argument is an int, the following operation will work
5             argument / 10
6         except TypeError:
7             # TypeError will be raised only if it isn't the right type
8             # Raise the same exception but with a better error message
9             raise TypeError(f"All arguments must be of type int, but received: '{argument}'")
10    daily_usage = astronauts * 11
11    total_usage = daily_usage * days_left
12    total_water_left = water_left - total_usage
13    if total_water_left < 0:
14        raise RuntimeError(f"There is not enough water for {astronauts} astronauts after {days_left} days!")
15    return f"Total water left after {days_left} days is: {total_water_left} liters"
16
17
18 try:
19     water_left(5.6, "100", 2)
20 except RuntimeError as err:
21     alert_navigation_system(err)
22
23
24

File "C:\Users\acuri\Desktop\water_usage.py", line 19, in <module>
    water_left(5.6, "100", 2)
File "C:\Users\acuri\Desktop\water_usage.py", line 9, in water_left
    raise TypeError(f"All arguments must be of type int, but received: '{argument}'")
TypeError: All arguments must be of type int, but received: '100'
[Finished in 79ms]
```