

Working With Files

◆ 1. Reading from a file

python

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```
# Open a file in read mode
with open('example.txt', 'r') as file:
    content = file.read()
    print(content)
```

◆ 2. Writing to a file (overwrites existing content)

python

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```
# Open a file in write mode
with open('example.txt', 'w') as file:
    file.write("Hello, this is a new file.\n")
    file.write("This will overwrite the file if it exists.")
```

◆ 3. Appending to a file (adds at the end)

python

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```
# Open a file in append mode
with open('example.txt', 'a') as file:
    file.write("\nThis is an added line at the end.")
```

◆ 4. Reading line by line

python

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```
with open('example.txt', 'r') as file:
    for line in file:
        print(line.strip()) # strip() removes newline characters
```

📁 Example with File Check (Optional)

python

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```
import os

filename = 'example.txt'

# Check if file exists before reading
if os.path.exists(filename):
    with open(filename, 'r') as file:
        print(file.read())
else:
    print(f"{filename} does not exist.")
```

📁 Bonus: Reading CSV Files

python

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```
import csv

with open('data.csv', 'r') as file:
    reader = csv.reader(file)
    for row in reader:
        print(row)
```

📊 Bonus: Reading Excel Files (using pandas)

python

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```
import pandas as pd

df = pd.read_excel('data.xlsx')
print(df.head())
```

◆ 'x' Mode – Create & Write Only If File Doesn't Exist

- 'x' stands for exclusive creation.
 - It will create a new file and open it for writing.
 - If the file already exists, it throws a `FileExistsError`.
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✓ Example:

python

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```
# Try to create a new file (will raise error if it exists)
with open('new_file.txt', 'x') as file:
    file.write("This file is created using 'x' mode.")
```

! If the file already exists:

perl

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```
FileExistsError: [Errno 17] File exists: 'new_file.txt'
```

When to use 'x' ?

- Use 'x' mode when you want to prevent accidentally overwriting existing files.
- It's useful for saving logs, reports, or backups safely.