In [3]:
```python
#1. Creating and Writing to a File
#This program creates a file, writes some text into it, and then closes the fil

# Open a file for writing (creates the file if it doesn't exist)

with open("example.txt", "w") as file:
    file.write("Hello, this is a test file.\n")
    file.write("Python file handling is simple and powerful.")

print("File created and content written successfully.")
```

File created and content written successfully.

In [4]:
```python
#2. Reading from a File
#This program opens an existing file, reads its contents, and prints them.

# Open a file for reading
with open("example.txt", "r") as file:
    content = file.read()  # Read entire content of the file

print("File contents:\n")
print(content)
```

File contents:

Hello, this is a test file.
Python file handling is simple and powerful.

In [5]:
```python
#3. Reading File Line by Line
#This program reads the file line by line and prints each line.

# Open a file for reading
with open("example.txt", "r") as file:
    # Read file line by line
    for line in file:
        print(line, end="")  # 'end=""' prevents double newlines
```

Hello, this is a test file.
Python file handling is simple and powerful.

In [6]:
```python
#4. Appending to a File
#This program appends new content to an existing file without overwriting it.

# Open a file for appending (creates file if not exists)
with open("example.txt", "a") as file:
    file.write("\nThis line is appended to the file.")

print("Content appended successfully.")
```

Content appended successfully.

In [7]:
```python
#5. Reading Specific Number of Characters from a File
#This program reads a specific number of characters from a file.

# Open a file for reading
with open("example.txt", "r") as file:
    content = file.read(20)  # Read first 20 characters

print("First 20 characters from the file:\n")
print(content)
```

First 20 characters from the file:

Hello, this is a tes

In [8]:
```python
#6. File Existence Check
#This program checks if a file exists before attempting to read it.

import os

file_name = "example.txt"

# Check if file exists
if os.path.exists(file_name):
    with open(file_name, "r") as file:
        content = file.read()
    print("File content:\n")
    print(content)
else:
    print(f"The file {file_name} does not exist.")
```

File content:

Hello, this is a test file.
Python file handling is simple and powerful.
This line is appended to the file.

```
In [9]:  #7. File Handling with Exception Handling
         #This program demonstrates how to handle potential exceptions, such as a file r

         try:
             # Attempting to open and read a file
             with open("example.txt", "r") as file:
                 content = file.read()
             print("File content:\n")
             print(content)
         except FileNotFoundError:
             print("Error: The file does not exist.")
         except PermissionError:
             print("Error: Permission denied to read the file.")
```

```
File content:

Hello, this is a test file.
Python file handling is simple and powerful.
This line is appended to the file.
```

```
In [10]:  #8. Writing Multiple Lines to a File
          #This program writes multiple lines to a file in one go.

          # Open the file in write mode
          with open("example.txt", "w") as file:
              lines = ["This is line 1.\n", "This is line 2.\n", "This is line 3.\n"]
              file.writelines(lines)

          print("Multiple lines written to the file.")
```

```
Multiple lines written to the file.
```

```
In [11]:  #9. Reading the Entire File into a List
          #This program reads all lines of a file and stores them in a list.

          # Open the file for reading
          with open("example.txt", "r") as file:
              lines = file.readlines()  # Reads the file and stores each line as a list e

          print("List of lines in the file:")
          print(lines)
```

```
List of lines in the file:
['This is line 1.\n', 'This is line 2.\n', 'This is line 3.\n']
```

```python
In [13]: #10. Copying Content from One File to Another
         #This program copies content from one file to another.
         # Open the source file for reading and destination file for writing

         #with open("example.txt", "r") as source_file:

         with open("source.txt", "r") as source_file:
             with open("destination.txt", "w") as dest_file:
                 content = source_file.read()  # Read entire content
                 dest_file.write(content)  # Write to the destination file

         print("Content copied from source.txt to destination.txt.")
```

Content copied from source.txt to destination.txt.

```python
In [14]: #11. Renaming a File
         #This program demonstrates how to rename a file.
         import os

         # Renaming the file
         os.rename("example.txt", "renamed_example.txt")

         print("File renamed successfully.")
```

File renamed successfully.

```python
In [15]: #12. Deleting a File
         #This program deletes a file if it exists.

         import os

         # Check if file exists before deleting
         file_name = "renamed_example.txt"

         if os.path.exists(file_name):
             os.remove(file_name)
             print(f"{file_name} deleted successfully.")
         else:
             print(f"{file_name} does not exist.")
```

renamed_example.txt deleted successfully.

```python
In [ ]:
```