In [1]:
```python
#4 textfile and write mode
#1 Open a text file in write mode
with open('example.txt', 'w') as file:
    # Write some content to the file
    file.write('Hello, world!\n')
    file.write('This is a text file.\n')

print("Content written to the file.")
```

```
Content written to the file.
```

In [2]:
```python
#2 Open the text file in write mode
with open('example.txt', 'w') as file:
    # Write content to the file
    file.write('Hello, world!\n')
    file.write('This is a text file.\n')

# File is automatically closed when the 'with' block is exited

print("Content written to the file and file is closed.")
```

```
Content written to the file and file is closed.
```

In [3]:
```python
#3 Open the text file in read mode
with open('example.txt', 'r') as file:
    # Read the entire content of the file
    content = file.read()

# Display the content
print("Content read from the file:")
print(content)
```

```
Content read from the file:
Hello, world!
This is a text file.
```

In [4]:
```python
#4 Open the text file in read mode
with open('example.txt', 'r') as file:
    # Read and print each line one by one using readline()
    print("Reading file content line by line using readline():")
    line = file.readline()
    while line:
        print(line, end='')  # 'end' parameter prevents adding extra newline c
        line = file.readline()
```

```
Reading file content line by line using readline():
Hello, world!
This is a text file.
```

In [5]:
```python
#5 Open the text file in append mode
with open('example.txt', 'a') as file:
    # Append new content to the file
    file.write('Adding some more content.\n')
    file.write('Here is another line of text.\n')

print("Additional content added to the file.")
```

```
Additional content added to the file.
```

In [6]:
```python
#Open the text file in read mode
with open('example.txt', 'r') as file:
    # Read the entire content of the file
    content = file.read()

# Display the content
print("Updated file content:")
print(content)
```

```
Updated file content:
Hello, world!
This is a text file.
Adding some more content.
Here is another line of text.
```

In [7]:
```python
#6 Open the text file in read mode
with open('example.txt', 'r') as file:
    # Read the entire content of the file
    content = file.read()

# Display the content
print("File content:")
print(content)
```

```
File content:
Hello, world!
This is a text file.
Adding some more content.
Here is another line of text.
```

In [8]:

```
with open('example.txt', 'a') as file:
    file.write('Adding some more content.\n')
    file.write('Here is another line of text.\n')

print("Additional content added to the file.")

# Read and display the updated file content
with open('example.txt', 'r') as file:
    content = file.read()

print("File content:")
print(content)
```

```
Additional content added to the file.
File content:
Hello, world!
This is a text file.
Adding some more content.
Here is another line of text.
Adding some more content.
Here is another line of text.
```

In [9]:
```python
#7
import json

# Example Python dictionary
data = {
    'name': 'Archer',
    'age': 30,
    'city': 'New York',
    'skills': ['Python', 'Data Analysis', 'Machine Learning']
}

# Convert Python object to JSON string
json_data = json.dumps(data, indent=4)
print("Serialized JSON data:")
print(json_data)

# Convert JSON string back to Python object
parsed_data = json.loads(json_data)
print("\nDeserialized Python object:")
print(parsed_data)
```

```
Serialized JSON data:
{
    "name": "Archer",
    "age": 30,
    "city": "New York",
    "skills": [
        "Python",
        "Data Analysis",
        "Machine Learning"
    ]
}

Deserialized Python object:
{'name': 'Archer', 'age': 30, 'city': 'New York', 'skills': ['Python', 'Data
Analysis', 'Machine Learning']}
```

In [ ]:
```python
p
```