

CHAPTER 14: FILE PROCESSING

14.1 FILE OPERATIONS IN PYTHON

14.1.1 Opening Files

```
<PYTHON>
```

```
# Read mode  
file = open("data.txt", "r")  
  
# Write mode (overwrites)  
file = open("data.txt", "w")
```

14.1.2 Reading Files

```
<PYTHON>
```

```
# Read entire file  
content = file.read()  
  
# Read line by line  
line = file.readline()
```

14.1.3 Writing Files

```
<PYTHON>
```

```
# Write string  
file.write("Hello\n")  
  
# Write list of strings
```

14.1.4 Closing Files

<PYTHON>

```
file.close()
```

```
# Or use context manager (auto-close)
```

```
with open("data.txt", "r") as file:
```

```
    content = file.read()
```

14.2 RANDOM FILE ACCESS

14.2.1 Direct Access

<PYTHON>

```
import struct
```

```
# Write record at specific position
```

```
def write_record(file, position, record):
```

```
    file.seek(position * record_size)
```

```
    file.write(struct.pack('i10s', record['id'], record['name'].encode()))
```

```
# Read record at specific position
```

```
def read_record(file, position):
```

```
    file.seek(position * record_size)
```

```
    data = file.read(record_size)
```

```
    Updated 2026-03-16 12:19:45 UTC by Samuel Lee
```