Ch12: Files

305172 Computer Programming Laboratory

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Files in Python

- File object can mediate access to a real on-disk file or to another type of storage or communication device (for example standard input/output, in-memory buffers, sockets, pipes, etc.).
- There are 3 categories of files
  - Raw binary files
  - Binary files
  - Text files

Open file modes

- Read , r
- Write, w
- Append, a
- Read and write, r+

Writing files

File object

Mode write

```
filename = 'test.txt'
f = open(filename, 'w')

f.write("Hello world")
f.write("Test writing file")

f.close()
```

Reading files

File object

Mode read

```
filename = 'test.txt'
f = open(filename, 'r')

print(f.read())

print(f.readline())

f.close()
```

Exercise

- 1. Using try exception with files
- 2.
  - Write number 1- 100 into a text file
  - Read file and print only odd number
- 3. read any text file and count how many words in this file.

JSON File

- JSON (JavaScript Object Notation) is a lightweight data interchange format inspired by JavaScript object literal syntax.
- The standard module called json can take Python data hierarchies, and convert them to string representations; this process is called *serializing*. Reconstructing the data from the string representation is called *deserializing*.

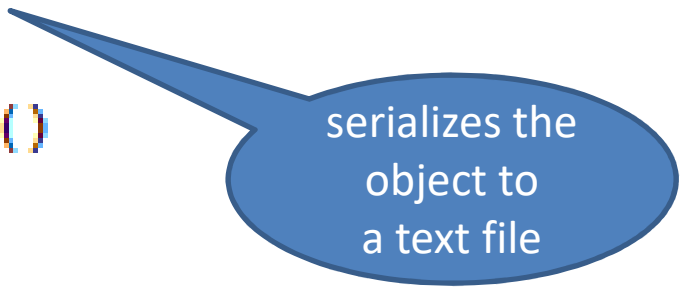
JSON with Python

```
import json

filename = 'test.txt'
f = open(filename,'w')

data = [1, 'Kate', 'Orange']
json.dump(data, f)

f.close()
```



JSON with Python

```
import json

filename = 'test.txt'
f = open(filename,'r')

data = json.load(f)
print(data)

f.close()
```

Exercise

```
import json

filename = 'test.txt'
f = open(filename,'w')

p1 = {
     "name": "Kate",
     "age": 20,
     "gender": 'F'
     }


p2 = {
     "name": "Bob",
     "age": 22,
     "gender": 'M'
     }

data = []
data.append(p1)
data.append(p2)

json.dump(data,f)

f.close()
```

Create JSON

```
f = open(filename,'r')
x = json.load(f)
for i in x:
     print('Name:' + i["name"])
     print('Age:' + str(i["age"]))
     print('Gender:' + i["gender"])
     print("-"*50)
f.close()
```

Read JSON