

# Strings and Files

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# Reminders

# Reminders

- Homework 5 due Friday
- Homework 4 grace period due Friday
- Signup for Quiz 4 via the CBTF

# Strings

# Poll Question: Slicing

What is the result of running this code?

```
1 my_str = "CS 105"  
2 print(my_str[1:2])
```

- ☐ A 'C'
- ☐ B 'CS'
- ☐ C 'CS '
- ☐ D 'S'
- ☐ E 'S '

# Poll Question: Slicing

What is the result of running this code?

```
1 my_str = "CS 105"  
2 print(my_str[-4:-2])
```

- ☐ A 'S 1'
- ☐ B 'S 10'
- ☐ C ' 1'
- ☐ D ' 10'

# Poll Question: Slicing

What is the result of running this code?

```
1 my_str = "CS 105"  
2 print(my_str([::2]))
```

- ☐ A 'C'
- ☐ B 'CS'
- ☐ C 'S'
- ☐ D 'C 0'

# Poll Question: Splitting

What is the result of running this code?

```
1 my_str = "CS 105 rox"  
2 result = my_str.split()
```

- ☐ A ("CS", "105", "rox")
- ☐ B ["CS 105 rox"]
- ☐ C ["CS", "105 rox"]
- ☐ D ["CS", "105", "rox"]



# Poll Question: Splitting

What is the result of running this code?

```
1 csv = "1, 2, 3, 4"  
2 result = csv.split(",")
```

- ☐ A ['1']
- ☐ B ['1, 2, 3, 4']
- ☐ C ['1', '2', '3', '4']
- ☐ D ['1,', '2,', '3,', '4']

# Poll Question: Joining

What is the result of running this code?

```
1 numlist = [1, 2, 3, 4]
2 result = ",".join(numlist)
```

- ☐ A '1234'
- ☐ B '1,2,3,4'
- ☐ C '1, 2, 3, 4'
- ☐ D TypeError

# A Common Pattern

The generic pattern:

```
1 mylist = input_data.split(<separator>)  
2 ... data processing ...  
3 outputstring "<separator>".join(my_list)
```

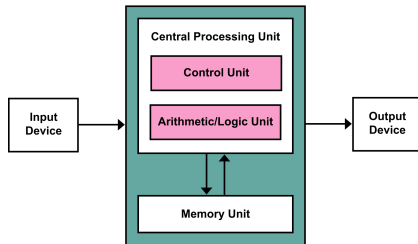
An example of this being done on one line:

```
1 output = ",".join(input.split(",")[:2])
```

## Files

# Why do we use files?

- Files are how data are stored on external storage
- Managed by O/S
- Disk is slow
- Opening files moves them to memory for the program
- Data is buffered (temporarily stored) in memory



# Poll Question: Opening a File

By default what does the `—open()` function have it's file access permissions set as?

- ☐ A Reading
- ☐ B Writing
- ☐ C Appending
- ☐ D Reading and Writing
- ☐ E Writing and Appending
- ☐ F reading, Writing, and Appending

# Poll Question: Files

Continue writing to existing files?

- Ⓐ `outf = open('filename', 'r')`
- Ⓑ `outf = open('filename', 'x')`
- Ⓒ `outf = open('filename', 'i')`
- Ⓓ `outf = open('filename', 'a')`
- Ⓔ `outf = open('filename', 'e')`

# Reading from Files

## Method 1:

```
1 file_object = open('filename')
2 lines = file_object.readlines()
3 for line in lines:
4     print(line)
5 file_object.close()
```

## Method 2:

```
1 with open('filename') as inf:
2     lines = inf.readlines()
3     for line in lines:
4         print(line)
5     #automatic file close
```



# Writing to Files

## Method 1:

```
1 file_object = open('filename', 'w')
2 file_object.write('thing to write')
3 file_object.close() #automatic at program end
4 file_object.flush() #optional
```

## Method 2:

```
1 with open('filename', 'w') as outf:
2     outf.write('thing to write')
3     #automatic file close
```