

1. Chapter 10 is Creating and Modifying Text. Here you'll learn how to make *strings*, manipulate parts of strings, manipulate text files, and many useful Python standard libraries. A *string* is basically a sequence of characters which gets stored in contiguous (adjacent) memory locations of the computer. Remember that memory really contains only 0s and 1s that form a binary number with each number representing a different character, e.g., 'A' is 65₁₀. Recall that we already did some string manipulations:

- Programming Assignment 4: converting between ASCII (8-bit)/Unicode(16-bit) values and their corresponding characters using Python functions: `ord('A')` to get 65 and `char(65)` to 'A'
- Lecture 29: created strings for the file names of the movie frames: `"ball 00" + str(frameNumber) + ".jpg"`

The Python summary handout (bottom of page 2) contains a list of string operations and *methods*.

a) Which string operation is used in `fileName = "ball 00" + str(frameNumber) + ".jpg"`?

b) For the following strings, predict the results:

```
cheer = "GO Panthers!!!"
rhyme = "The cow jumped over the moon."
      012345678911111111112222222222
      0123456789012345678
```

| Expression | Predicted Result | Actual Result |
|--------------------------------------|------------------|---------------|
| <code>cheer[4]</code> | | |
| <code>cheer[2:6]</code> | | |
| <code>cheer[:4]</code> | | |
| <code>cheer[1:4] + rhyme[-3:]</code> | | |
| <code>cheer[:2] * 3</code> | | |
| <code>'jump' in rhyme</code> | | |
| <code>len(cheer)</code> | | |
| <code>cheer[2:4]*4</code> | | |

2. Assume the following strings:

```
path = "/home/usr/fienup/"
str = "mouse"
data = "Media Computation rules!"
```

What would be the result of each of the following?

- `path.find("om")`
- `path.count("/")`
- `path.split("/")`
- `str.upper().center(15)`
- `data.endswith("ules")`

3. Using the variable from the above question, what string methods would perform the following tasks:

- Obtain a list of words in the string in the variable `data`.
- Obtain the string converted to all upper-case letters in the variable `str`.
- Locate the position of the substring "rules" in the variable `data`.
- Replace the exclamation point with a question mark in the variable `data`.