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Tips, Tricks, and Pitfalls

Level 4

I: Format Function

1. The format function supports decimal precision formatting, similar to decimal precision when using format flags. The following examples demonstrate this:

```
principal = 100000
rate = .0894364
term = 160

# This will display rate with 4 decimal places precision.
# Note the .4f, which is the same syntax used for format flags.
string = 'The loan has principal of {0}, a rate of {1:.4f}, ' \
        'and a term of {2}'.format(principal, rate, term)
print(string)

# Same thing, using keyword format specifiers.
string2 = 'The loan has principal of {prin}, a rate of {rate:.4f}, ' \
        'and a term of {t}'.format(t=term, prin=principal, rate=rate)
print(string2)

# Same thing, using f-Strings.
string3 = f'The loan has principal of {principal}, a rate of {rate:.4f}, ' \
        f'and a term of {term}'
print(string3)

# Can also make the precision formattable!...

decimalPrecision = 3
string4 = 'The loan has principal of {0}, a rate of {1:.{2}f}, ' \
        'and a term of {3}'.format(principal, rate, decimalPrecision, term)
print(string4)

decimalPrecision = 3
string5 = 'The loan has principal of {prin}, a rate of {rate:.{prec}f}, ' \
        'and a term of {t}'.format(t=term, prin=principal, rate=rate, prec=decimalPrecision)
print(string5)

decimalPrecision = 3
string6 = f'The loan has principal of {principal}, a rate of {rate:.{decimalPrecision}f}, ' \
        f'and a term of {term}'
print(string6)

# Slightly different...
precision = '.2f'
string6 = f'The loan has principal of {principal}, a rate of {rate:{precision}}, ' \
        f'and a term of {term}'
print(string6)
```

II: File System

1. In the lecture, we saw how to create and rename files. However, we did not mention how to move files. Moving files is actually a variation of renaming. For example:

```
>>> import os
>>> # This will move MyFile.txt to MyDir (assuming MyDir exists)
>>> os.rename('C:\\MyFile.txt', 'C:\\MyDir\\MyFile.txt')
```

Can also rename the file while moving:

```
>>> import os
>>> # This will move MyFile.txt to MyDir and change the filename (assuming MyDir exists):
>>> os.rename('C:\\MyFile.txt', 'C:\\MyDir\\RenamedMyFile.txt')
```

2. The **os** module does not contain any method to copy files. However, the **shutil** module does. For example:

```
>>> import shutil
>>> # This will copy MyFile to MyDir (assuming MyDir exists):
>>> shutil.copyfile('C:\\MyFile.txt', 'C:\\MyDir\\CopiedMyFile.txt') # Can be the same or different filename
```

Another approach (always keeps the same filename):

```
>>> import shutil
>>> # This will copy MyFile to MyDir (assuming MyDir exists):
>>> shutil.copy2('C:\\MyFile.txt', 'C:\\MyDir')
```