**f-Strings (See page 70-78)**

To print numbers you specify numbers or numeric variables inside a **string**. The latest and best way to do this is with **f-strings.** The number or variable is **enclosed within** **curly braces { }**.

>>> answer = 123.45678  
>>> f’The answer is {answer}’ # print() can be omitted in shell mode  
‘The answer is 123.45678’

>>> num1 = 12  
>>> num2 = 15  
>>> total = num1 + num2  
>>> print(f‘{num1} + {num2} = {total}’)  
12 + 15 = 27

**Special specification symbols** can be added inside the curly braces to format the output. To format the answer variable above **as a float** to **three** decimal places, specify {answer:.3f}. NOTE the **f for float**.

>>> answer = 1234.56789  
>>> f’The answer is {answer:.3f}’ # print() can be omitted in shell mode  
‘The answer is 1234.568’

Anything after the colon (:) is a formatting specification. A **comma** will format large numbers as **thousands**, and **d** means format as an **int**.

>>> num = 987654321  
>>> print(f’num is {num:,d}’) # Note the comma and d  
num is 987,654,321

To format thousands **and** decimal places, put the **comma before the period**.

>>> answer = 1234.56789  
>>> print(f’The answer is {answer:,.3f}’) # Note the comma and period  
The answer is 1,234.568

The specifier **,.2f** is used for printing **currency** amounts.  
The **%** specifier **multiplies by 100** and appends a % sign.

>>> SALES\_TAX\_RATE = 0.07  
>>> f'{SALES\_TAX\_RATE:.0%}' # .0f means zero decimal places (an integer)  
‘7%’  
  
>>> car = 28349.79  
>>> tax = SALES\_TAX\_RATE \* car  
>>> print(f’{SALES\_TAX\_RATE:.1%} tax on a ${car:,.2f} car is ${tax:,.2f}’)  
7.0% tax on a $28,349.79 car is $1,984.49

You can specify a **field width and alignment** when printing. The field width specifies the **number of spaces** to be used to display a value. Alignment can be **left < or right > or centered ^**. **Field widths and alignment** will be important when you study how loops print nicely formatted **tabular** output. See the **alignment designators on page 77**.

Learn more at <https://docs.python.org/3/library/string.html#formatspec>