

```
names = ["Manny", "Bella", "Amadeus"]
signs = ["Libra", "Virgo", "Sagittarius"]
for i, name in enumerate(names):
    print(f"{name} is a {signs[i]}")
```

This prints the following to the console:

```
Manny is a Libra
Bella is a Virgo
Amadeus is a Sagittarius
```

Looping through a dictionary is similar, but we need the `items()` of the dictionary for the key-value pair, as follows:

```
sounds = {"dog": "woof", "cat": "meow", "fox": "ring-ding-ding"}
for k, v in sounds.items():
    print(f"The {k} says '{v}'")
```

This prints the following to the console:

```
The dog says 'woof'
The cat says 'meow'
The fox says 'ring-ding-ding'
```

1.12 Summary [Outlined]

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1.13 Problems



Problem 1.1 Write a program with the following requirements:

- It defines variables for the following quantities:

$$x = 5.2 + j3.4, \quad y = -17, \quad \text{and} \quad z = 0.02,$$

where j is the imaginary number $\sqrt{-1}$.

- It computes and prints the following quantities:

$$x + y, \quad xyz, \quad \text{and} \quad 4x^3 - 8xy + 6y^2.$$

- It further computes and prints the following quantities:

$$|x|, \quad \overline{xy}, \quad \text{and} \quad \Re(x),$$

where $|\cdot|$ is the absolute value, $\overline{\cdot}$ is the complex conjugate, and $\Re(\cdot)$ is the real part.

Problem 1.2 Write a program with the following requirements:

- It defines a variable for a list with the following elements:

| 4, -12, 6, -14, 8, -16

- It prints the first and last elements of the list
- Using list slicing, it prints the first three elements of the list
- Using list slicing, it prints the last three elements of the list
- Using list slicing, it prints every other element, starting with the first element
- It computes and prints the length of the list (consider using the built-in function `len()`)
- It computes and prints the sum of the list elements (consider using the built-in function `sum()`)

Problem 1.3 Write a program with the following requirements:

- It defines a variable for a list with the following elements:

| 32, 41, 58, 34, 24, 53, 46, 41

- It computes and prints the mean of the list items (consider using the built-in `sum()` and `len()` functions)
- It finds and prints the maximum and minimum values in the list (consider using the built-in `max()` and `min()` functions)