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**Topic 25 - Dictionaries: What They Are**  
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**Understanding Python Dictionaries**

In Python, a **dictionary** is a collection of *key-value pairs*. Unlike lists, which store a simple series of items, dictionaries are used to store information that has two parts: a *key* (like “first name”) and a *value* (like “David”). This structure lets you quickly access information based on a descriptive key, making it ideal for more complex data.

**Comparing Lists and Dictionaries**

Consider a list:

python

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my\_cats = ["Draco", "Bellatrix", "Voldemort"]

In a list, you access items by index:

python

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print(my\_cats[0]) # Output: Draco

Lists work well for simple data, but when dealing with structured information, such as a customer's details, dictionaries provide a more organized way to store and access data.

**Example: Storing Customer Information**

Suppose you have the following details about a customer:

* **First name**: David
* **Last name**: Elliott
* **Address**: 4803 Wellesley St.
* **City**: Toronto
* **Province**: ON
* **Country**: Canada
* **Postal Code**: M7A1N3

In a dictionary, you can store this information in key-value pairs, making it easy to access any piece of information with a descriptive key:

python

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customer\_29876 = {

"first\_name": "David",

"last\_name": "Elliott",

"address": "4803 Wellesley St.",

"city": "Toronto",

"province": "ON",

"country": "Canada",

"postal\_code": "M7A1N3"

}

**Accessing Data in a Dictionary**

To retrieve information from a dictionary, you use the key associated with the desired value. For example:

python

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print(customer\_29876["city"]) # Output: Toronto

print(customer\_29876["country"]) # Output: Canada

Each key in a dictionary must be unique, and each key points to a specific value.

**Key Points About Dictionaries**

* **Keys**: Must be unique. They can be strings, numbers, or even tuples.
* **Values**: Can be of any data type (e.g., strings, numbers, lists).
* **Ordering**: Dictionaries keep the order of items as they are added (from Python 3.7 onward).

Dictionaries allow for intuitive data retrieval and make code more readable, especially when storing and accessing structured data.