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**Topic 39 - Creating a Dictionary That Contains a Dictionary**

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**What**

You can nest dictionaries within a larger dictionary, which can make organizing complex information easier, especially when you want to access data based on unique keys.

**Why**

Using a dictionary of dictionaries allows you to manage complex data structures without being limited by list indexing. This approach also enables you to delete or modify entries without disrupting other data or their positions within the structure.

**How**

Let’s break down the approach to setting up a dictionary with nested dictionaries:

1. **Original Approach with List of Dictionaries**:

python

Copy code

customers = [

{

"customer id": 0,

"first name": "John",

"last name": "Ogden",

"address": "301 Arbor Rd."

},

{

"customer id": 1,

"first name": "Ann",

"last name": "Sattermyer",

"address": "PO Box 1145"

},

{

"customer id": 2,

"first name": "Jill",

"last name": "Somers",

"address": "3 Main St."

}

]

1. **Convert to a Dictionary of Dictionaries**:
   * Use a dictionary where each key is the **customer ID** and the value is a dictionary containing their information.
   * For example:

python

Copy code

customers = {

0: {

"first name": "John",

"last name": "Ogden",

"address": "301 Arbor Rd."

},

1: {

"first name": "Ann",

"last name": "Sattermyer",

"address": "PO Box 1145"

},

2: {

"first name": "Jill",

"last name": "Somers",

"address": "3 Main St."

}

}

1. **Flexible Key Options**:
   * Instead of sequential IDs, you could use unique customer usernames:

python

Copy code

customers = {

"johnog": {

"first name": "John",

"last name": "Ogden",

"address": "301 Arbor Rd."

},

"coder1200": {

"first name": "Ann",

"last name": "Sattermyer",

"address": "PO Box 1145"

},

"madmaxine": {

"first name": "Jill",

"last name": "Somers",

"address": "3 Main St."

}

}

**Summary**

Creating a dictionary that contains other dictionaries is ideal for organizing complex data and allows flexibility in adding, modifying, or deleting entries without being restricted by index order, as with lists.

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