Topic 61 - Classes: Changing an Attribute's Value

**What**

* This topic focuses on modifying an attribute's value directly in a class instance using methods.
* By using a method, you can update an attribute easily and ensure the change is tracked consistently across the instance.

**Why**

* **Encapsulate Changes**: Using methods to modify attributes promotes encapsulation, which is a best practice in object-oriented programming.
* **Efficient Updates**: Methods allow streamlined updates, reducing the risk of directly changing attribute values in code, which can be harder to maintain or track.

**How**

1. **Direct Attribute Update**  
   To update an attribute directly, you can use the following syntax:

python

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pid4343.last\_name = "Ortega"

* + **Direct Access**: Here, the last\_name attribute is updated directly by assigning a new value, "Ortega".

1. **Using a Method to Change an Attribute**  
   It’s more robust to define a method in the class for updating attributes:

python

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class Patient:

def \_\_init\_\_(self, last\_name, first\_name, age):

self.last\_name = last\_name

self.first\_name = first\_name

self.age = age

# Method to update the last name

def change\_last\_name(self, new\_last\_name):

self.last\_name = new\_last\_name

* + **Method change\_last\_name**: The method change\_last\_name takes new\_last\_name as an argument and assigns it to the instance's last\_name attribute.
  + **Parameter new\_last\_name**: This parameter allows flexible updating of the last\_name without accessing the attribute directly each time.

1. **Call the Method to Change the Last Name**  
   Using the change\_last\_name method to update an instance’s last\_name:

python

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pid4343 = Patient("Taleb", "Sue", 61)

pid4343.change\_last\_name("Ortega")

* + **Method Call**: When pid4343.change\_last\_name("Ortega") is called, the last\_name attribute of pid4343 is updated to "Ortega".

**Things to Remember**

* **Method Parameters**: Methods can take parameters beyond self, allowing them to receive new values to modify instance attributes.
* **Updating Attributes via Methods**: It’s often safer and more organized to update attributes using methods rather than direct assignment.
* **Instance-Specific Changes**: Each instance can be updated independently, which is useful in cases with many instances that might need unique updates.