Python Programming
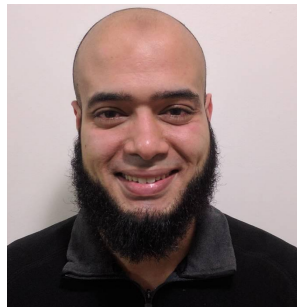# Inheritance with properties

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With properties

- We simply inherit them
- But where problems may occur?
- Forgetting that: self is the **calling instance**

```python
class Employee:
    def __init__(self, salary):
        self.salary = salary

    @property
    def salary(self):
        return self.__salary

    @salary.setter
    def salary(self, value):
        if value < 0:
            value = 0
        self.__salary = value

class HourlyEmployee(Employee):
    pass

if __name__ == '__main__':
    # inherits: init and properties
    emp = HourlyEmployee(20)
    print(emp.salary)
    emp.salary = -30
    print(emp.salary)
```

What is wrong?

● Trace the code and find the error

```python
class Employee:
    def __init__(self, salary):
        self.salary = salary

    @property
    def salary(self):
        return self.__salary

    @salary.setter
    def salary(self, value):
        if value < 0:
            value = 0
        self.__salary = value

class HourlyEmployee(Employee):
    extra = 100

    @property
    def salary(self):
        return self.__salary + HourlyEmployee.extra

if __name__ == '__main__':
    emp = HourlyEmployee(20)
    print(emp.salary)
    emp.salary = -30
    print(emp.salary)
```

Self?

- The key is to remember what is self
- Employee: has set/get property
- Override: get only
- Self wanna set

```python
class Employee:
    def __init__(self, salary):
        # self here will refer to the child class! whch doesn't has set!
        self.salary = salary  # AttributeError: can't set attribute

    @property
    def salary(self):...

    @salary.setter
    def salary(self, value):...


class HourlyEmployee(Employee):
    extra = 100

    # Override property: get only
    @property
    def salary(self):...


if __name__ == '__main__':
    # inherits: init and properties
    emp = HourlyEmployee(20)
    print(emp.salary)
    emp.salary = -30
    print(emp.salary)
```

So

- We can simply provide setter for the child class
- Or whatever solution
- Overall: Be careful and remember what is self: the calling instance
- Also remember: when u override a property, you cancel its get/set

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."