

Lecture-39

Class method vs static method in Python:

The class method in Python is a method, which is bound to the class but not the object of that class. The static methods are also same but there are some basic differences. For class methods, we need to specify @classmethod decorator, and for static method @staticmethod decorator is used.

Syntax for Class Method.

```
class my_class:
```

```
    @classmethod
```

```
    def function_name(cls, arguments):
```

```
        #Function Body
```

```
        return value
```

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- **Syntax for Static Method.**
- class my_class:
- @staticmethod
- def function_name(arguments):
- #Function Body
- return value



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What are the differences between Classmethod and StaticMehtod?

The Static methods are used to do some utility tasks, and class methods are used for factory methods. The factory methods can return class objects for different use cases.

Class Method	Static Method
The class method takes cls (class) as first argument.	The static method does not take any specific parameter.
Class method can access and modify the class state.	Static Method cannot access or modify the class state.
The class method takes the class as parameter to know about the state of that class.	Static methods do not know about class state. These methods are used to do some utility tasks by taking some parameters.
@classmethod decorator is used here.	@staticmethod decorator is used here.

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Class method

```
from datetime import date
```

```
class Employee:
```

```
    def __init__(self, name, age):
```

```
        self.name = name
```

```
        self.age = age
```

```
@classmethod
```

```
def empyear(cls, name, year):
```

```
    return cls(name, date.today().year - year)
```

```
def __str__(self):
```

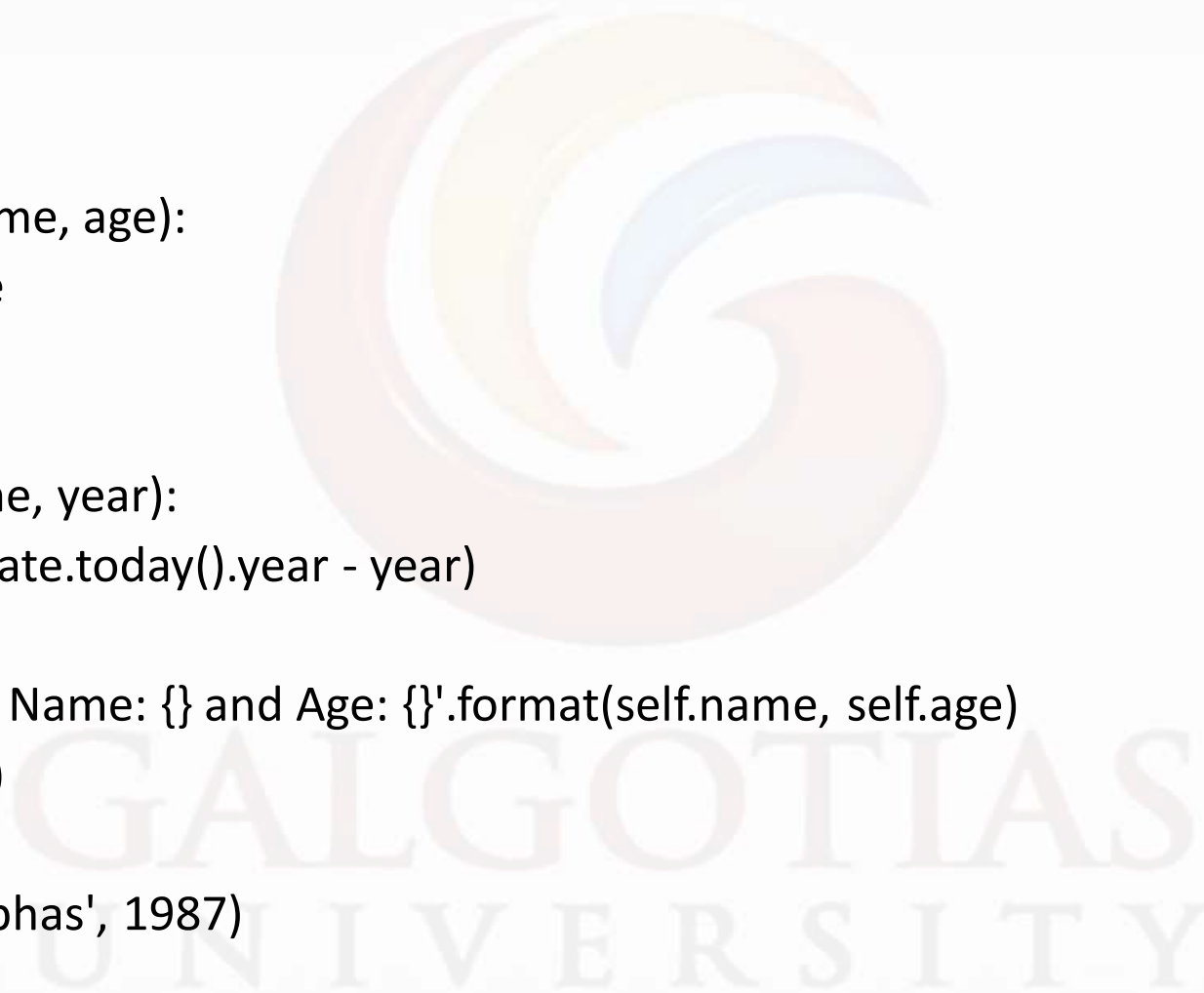
```
    return 'Employee Name: {} and Age: {}'.format(self.name, self.age)
```

```
e1 = Employee('Dhiman', 25)
```

```
print(e1)
```

```
e2 = Employee.empyear('Subhas', 1987)
```

```
print(e2)
```



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OUTPUT:

Employee Name: Dhiman and Age: 25

Employee Name: Subhas and Age: 33



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#static Method

```
from datetime import date
```

```
class Employee:
```

```
    @staticmethod
```

```
    def isAdult(age):
```

```
        if age > 18:
```

```
            return True
```

```
        else:
```

```
            return False
```

```
print(Employee.isAdult(25))
```

```
print(Employee.isAdult(16))
```

OUTPUT:

True

False



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static method and class method in same class:

```
from datetime import date

class Employee:
    def __init__(self, name, age):
        self.name = name
        self.age = age

    @staticmethod
    def isAdult(age):
        if age > 18:
            return True
        else:
            return False
```

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```
@classmethod
def empyear(cls, name, year):
    return cls(name, date.today().year - year)
def __str__(self):
    return 'Employee Name: {} and Age: {}'.format(self.name, self.age)
e1 = Employee('Dhiman', 25)
print(e1)e2 = Employee.empyear('Subhas', 1987)
print(e2)
print(Employee.isAdult(25))
print(Employee.isAdult(16))
```

Output

Employee Name: Dhiman and Age: 25

Employee Name: Subhas and Age: 31

True

False

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References:

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2. Python Programming using problem solving Approach by Reema Thareja, Oxford University, Higher Education Oxford University Press; First edition (10 June 2017), ISBN-10: 0199480173
3. Fundamentals of Python first Programmes by Kenneth A Lambert, Copyrighted material Course Technology Inc. 1 st edition (6th February 2009)
4. <https://www.tutorialspoint.com/python/index.htm>
5. <https://www.geeksforgeeks.org/python-programming-language>

*****END OF THE LECTURE*****

*****THANK YOU*****

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