Python Programming

Inheritance 4: Multilevel Inheritance

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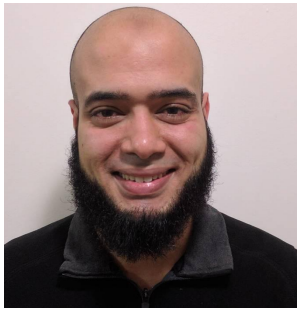
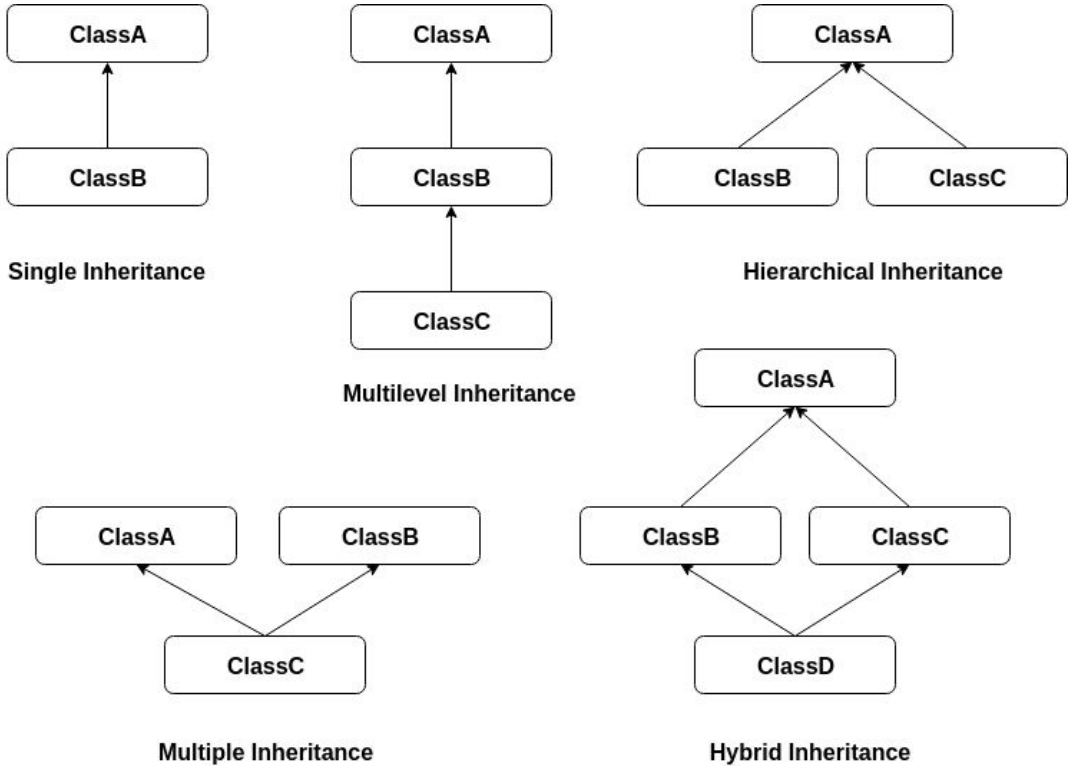


5 Inheritance relations types



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Multilevel Inheritance

```
class A:
    def __init__(self):
        print('init A', self)
    def f1(self):
        print('f1A ')
    def f2(self):
        print('f2A ')
    def f3(self):
        print('f3A ')
```

```
class B(A):
    def __init__(self):
        super().__init__()
        print('init B', self)
    def f1(self):
        print('f1B ')
    def f2(self):
        print('f2B ')
```

```
class C(B):
    def __init__(self):
        super().__init__()
        print('init C', self)
    def f1(self):
        print('f1C ')
```

```
cobj = C()
cobj.f1()
cobj.f2()
cobj.f3()
# Guess output!
```

```
init A <__main__.C object at 0x7fa42f069850>
init B <__main__.C object at 0x7fa42f069850>
init C <__main__.C object at 0x7fa42f069850>
f1C
f2B
f3A

Observe: self is bound to cobj all the time!
    The created object
So any method call is bound to cobj all time

Many errors will be resolved by remembering that!
"""
```

Multilevel Inheritance and Super()

```
class A:
    def f1(self):
        return 'f1A'
    def f2(self):
        return 'f2A'
    def f3(self):
        return 'f3A'
```

```
class B(A):
    def __init__(self):
        super().__init__()
    def f1(self):
        return 'f1B ' + super().f1()
    def f2(self):
        return 'f2B ' + super().f2()
```

```
class C(B):
    def __init__(self):
        super().__init__()
    def f1(self):
        return 'f1C ' + super().f1()
    def f3(self):
        return 'f3C ' + super().f3()
```

```
cobj = C()
print(cobj.f1())
print(cobj.f2())
print(cobj.f3())
# guess output?
```

```
f1C f1B f1A
f2B f2A
f3C f3A
```

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."