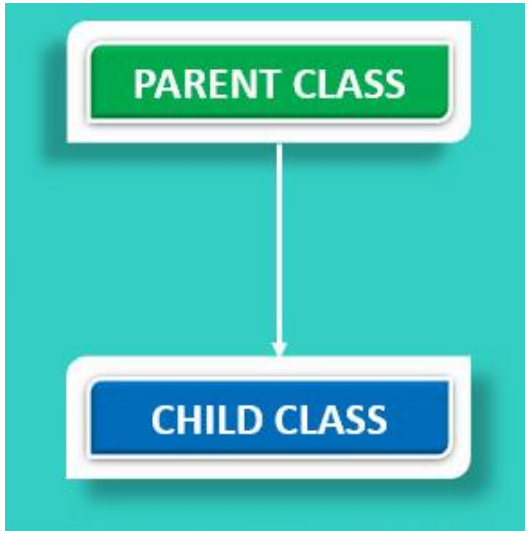
Inheritance in Class

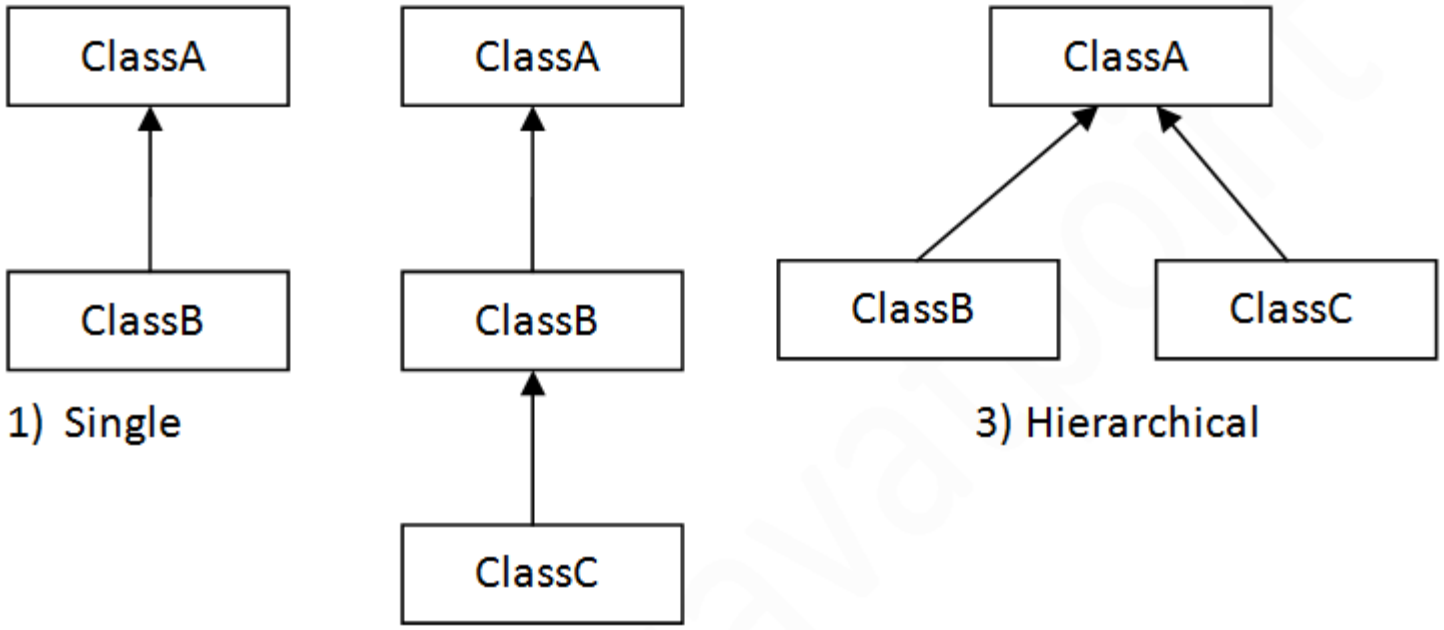
UTKARSH GAIKWAD

CLASS STARTING SHARP AT

Inheritance in python



Different inheritances of Class



Single inheritance

```python
class Person:
    def __init__(self, name, age):
        self.name = name
        self.age = age

    def introduce(self):
        print(f"My name is {self.name} and I am {self.age} years old.")
```

Parent Class

Super Class

```python
class Employee(Person):
    def __init__(self, name, age, company):
        super().__init__(name, age)
        self.company = company

    def work(self):
        super().introduce()
        print(f"I work for {self.company}.")
```

Child Class

Multiple Inheritance

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

    def get_employee_info(self):
        return f"Name: {self.name}, ID: {self.employee_id}"
```

Parent Class

```python
class Manager(Employee):
    def __init__(self, name, employee_id, department):
        super().__init__(name, employee_id)
        self.department = department

    def get_manager_info(self):
        return f"{self.get_employee_info()}, Department: {self.department}"
```

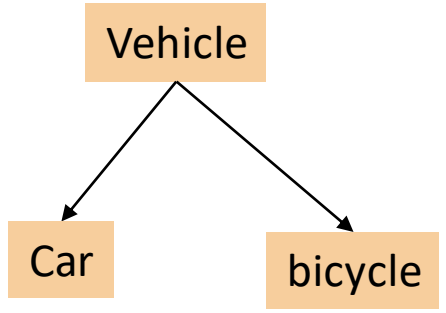
Child Class

```python
class ProjectManager(Manager):
    def __init__(self, name, employee_id, department, project):
        super().__init__(name, employee_id, department)
        self.project = project

    def get_project_info(self):
        return f"{self.get_manager_info()}, Project: {self.project}"
```

Grandchild Class

Hierarchical Inheritance

```python
class Vehicle:
    def __init__(self, speed, direction):
        self.speed = speed
        self.direction = direction

    def accelerate(self):
        self.speed += 10

    def turn(self, direction):
        self.direction = direction

class Car(Vehicle):
    def __init__(self, speed, direction, num_wheels, num_doors):
        super().__init__(speed, direction)
        self.num_wheels = num_wheels
        self.num_doors = num_doors

    def open_door(self):
        print('Car door opened')

    def close_door(self):
        print('Car door closed')

class Bicycle(Vehicle):
    def __init__(self, speed, direction, num_gears, frame_size):
        super().__init__(speed, direction)
        self.num_gears = num_gears
        self.frame_size = frame_size

    def shift_gear(self):
        print('Bicycle Gear Shifter')

    def adjust_seat(self):
        print('Bicycle seat adujsted')
```



Thank you

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