

1. Introduction to OOP with Fleet management :

Software management system:

- a. Object Oriented Programming.
- b. Functional Programming.
- c. Procedural Programming.

Four pillars of OOP :

- a. Inheritance
- b. Encapsulation
- c. Polymorphism
- d. Abstraction

2. Common and uncommon things and Inheritance : `super().__init__()`

3. Multi-Level Inheritance :

1. Simple inheritance: parent class --> child class (Gadget ---> Phone)
(Gadget --> Laptop)
2. Multi-level inheritance: Granda --> Parent --> child (Vehicle --> Bus ---> ACBus) (Vehicle --> Truck --> PickupTruck)
3. Multiple inheritance: Student (Family, School, Sports)
4. Hybrid: Granda --> Father, Uncle, Aunty --> Child (Father, Uncle)

4. Multiple Inheritance and Inheritance concepts :

```
class Family:
```

```
    pass
```

```
class School:
```

```
    pass
```

```
class Student(Family, School, Sports):
```

```
    def __init__(self, address, id, level, game):
```

```
        Pass
```

5. **Encapsulation and Access Modifiers** : (Public, Private, Protected)
6. **Abstract Classes and abstractmethod** : enforcement to use parent's all method.
All derived class must have the parent's all method.
7. **Abstract Classes vs Interfaces** : Know difference between Abstract Class and Interface.
8. **Polymorphism** : an object's ability to take on multiple forms.
9. **Summary** : `issubclass()`, `issubclass()` .