Intuition to Inheritance

Let’s take an example!

Example:

Cars

Analytics Vidhya

Let’s take an example!

Example:

Cars

Electric Cars

Petrol/Diesel

Analytics Vidhya

Let’s take an example!

Storing the following information

- Vehicle Number
- Engine Capacity
- Ex showroom Cost

Let’s take an example!

Storing the following information

- Vehicle Number
- Engine Capacity
- Ex showroom Cost

Storing additional information

- Charger Type
- Charging Cost

Analytics Vidhya

Defining Classes

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

Analytics Vidhya

Defining Classes

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

```
class Electric_Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
```

Analytics Vidhya

Defining Classes

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

```
class Electric_Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
    self.charger_type = charger_type
    self.charging_cost = charging_cost
```

Analytics Vidhya

Defining Classes

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

```
class Electric_Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
    self.charger_type = charger_type
    self.charging_cost = charging_cost
```

Analytics Vidhya

Concept of Inheritance

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

```
class Electric_Cars(Cars):
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
    super().__init__(number, fuel_capacity, exshowroom_price)
    self.charger_type = charger_type
    self.charging_cost = charging_cost
```

Analytics Vidhya

Concept of Inheritance

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

Parent Class

```
class Electric_Cars(Cars):
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
    super().__init__(number, fuel_capacity, exshowroom_price)
    self.charger_type = charger_type
    self.charging_cost = charging_cost
```

Child Class

Analytics Vidhya

Notebook

Analytics Vidhya

Thank You

Types of Inheritance in Python

Types of Inheritance in Python

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

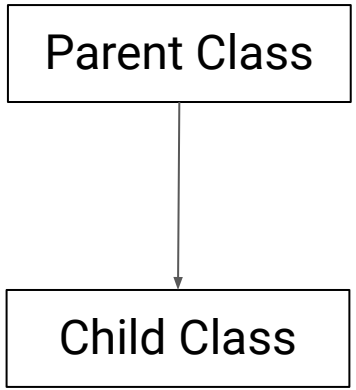
Parent Class

```
class Electric_Cars(Cars):
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
    super().__init__(number, fuel_capacity, exshowroom_price)
    self.charger_type = charger_type
    self.charging_cost = charging_cost
```

Child Class

Analytics Vidhya

Single Inheritance



Single Inheritance

Analytics Vidhya

Single Inheritance

Parent Class

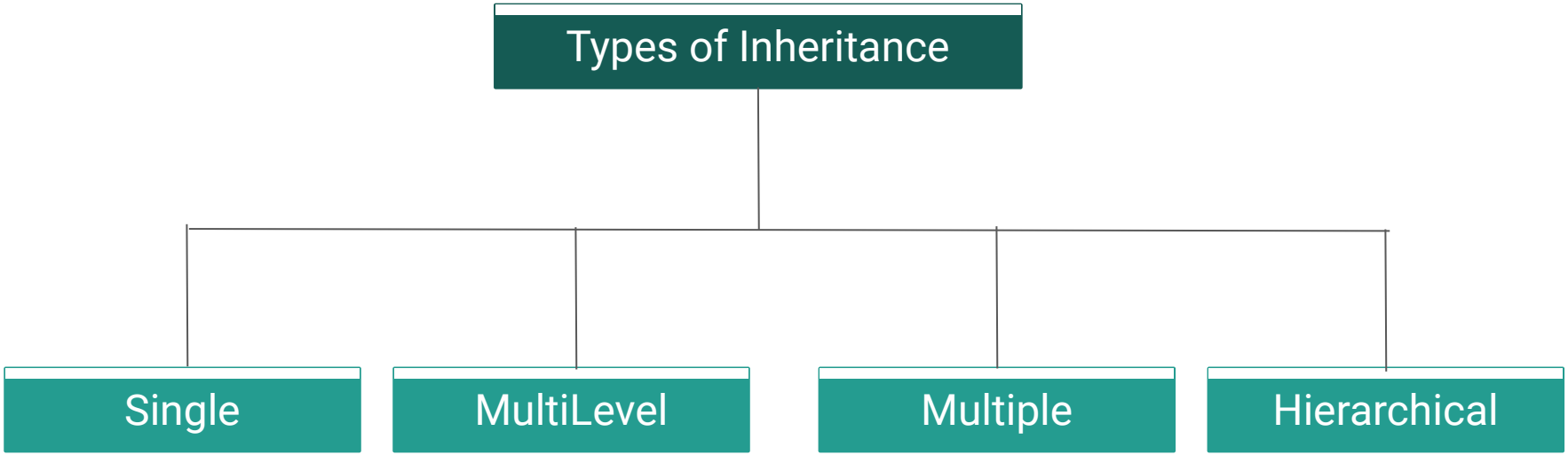
Cars

Child Class

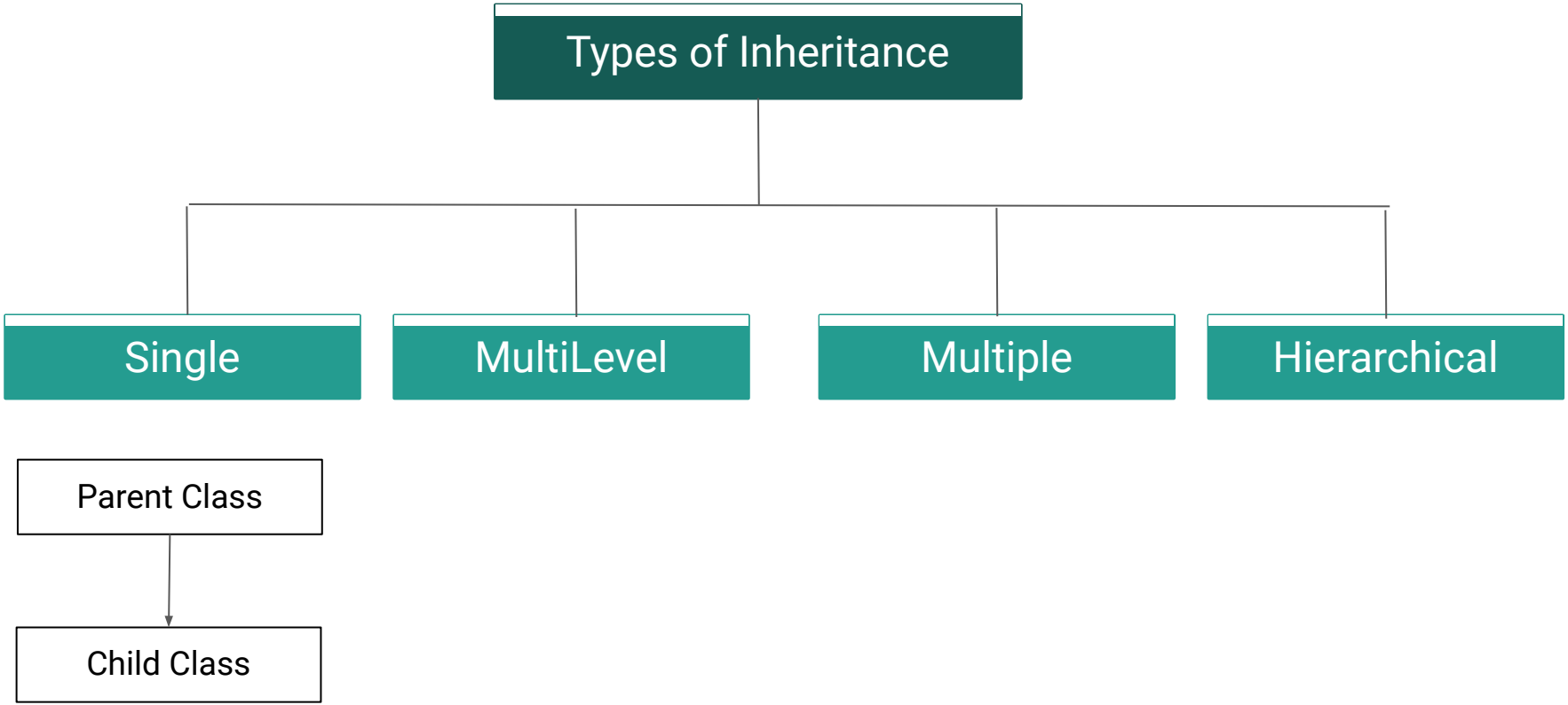
Electric Cars

Single Inheritance

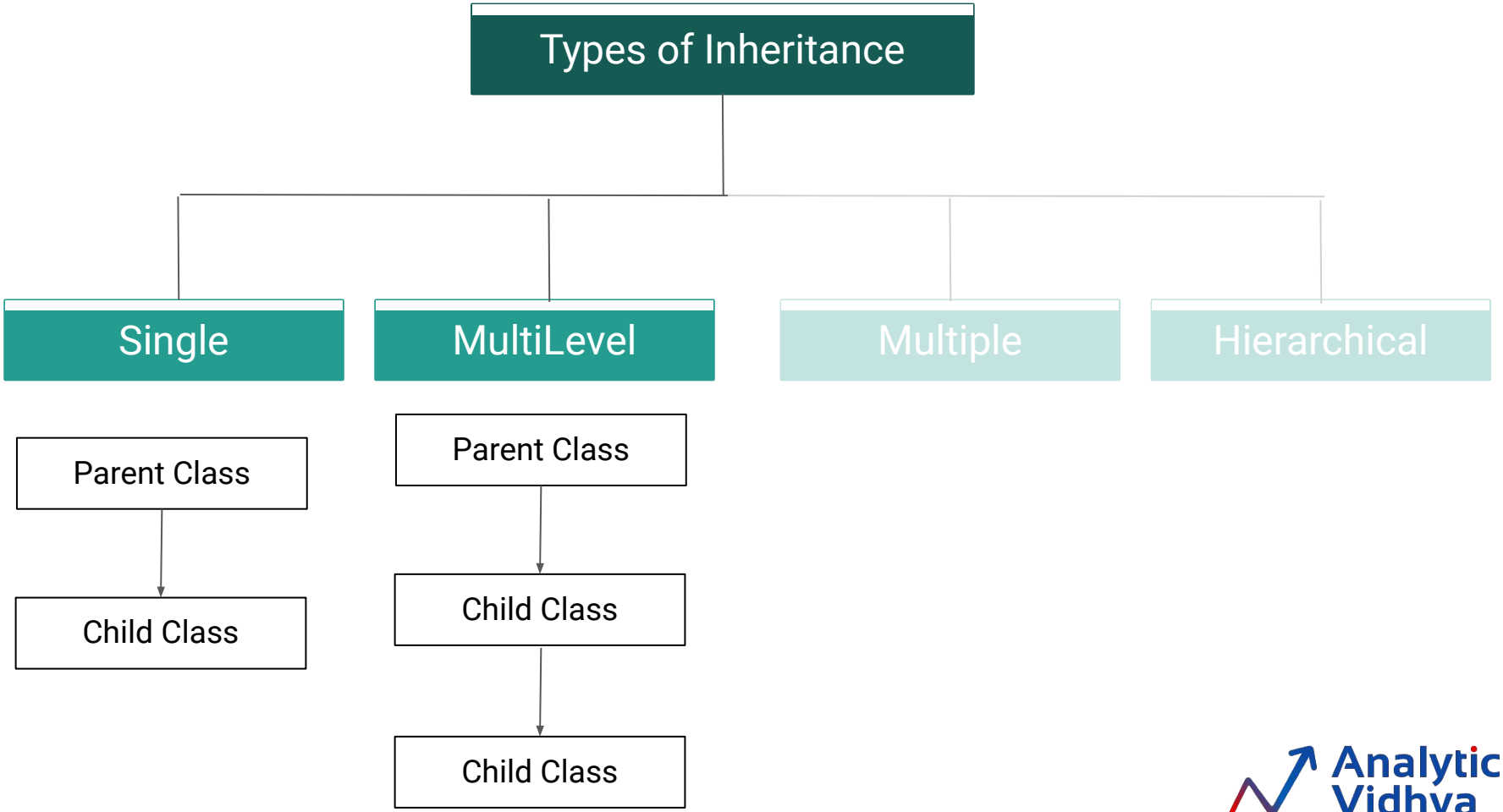
Analytics Vidhya



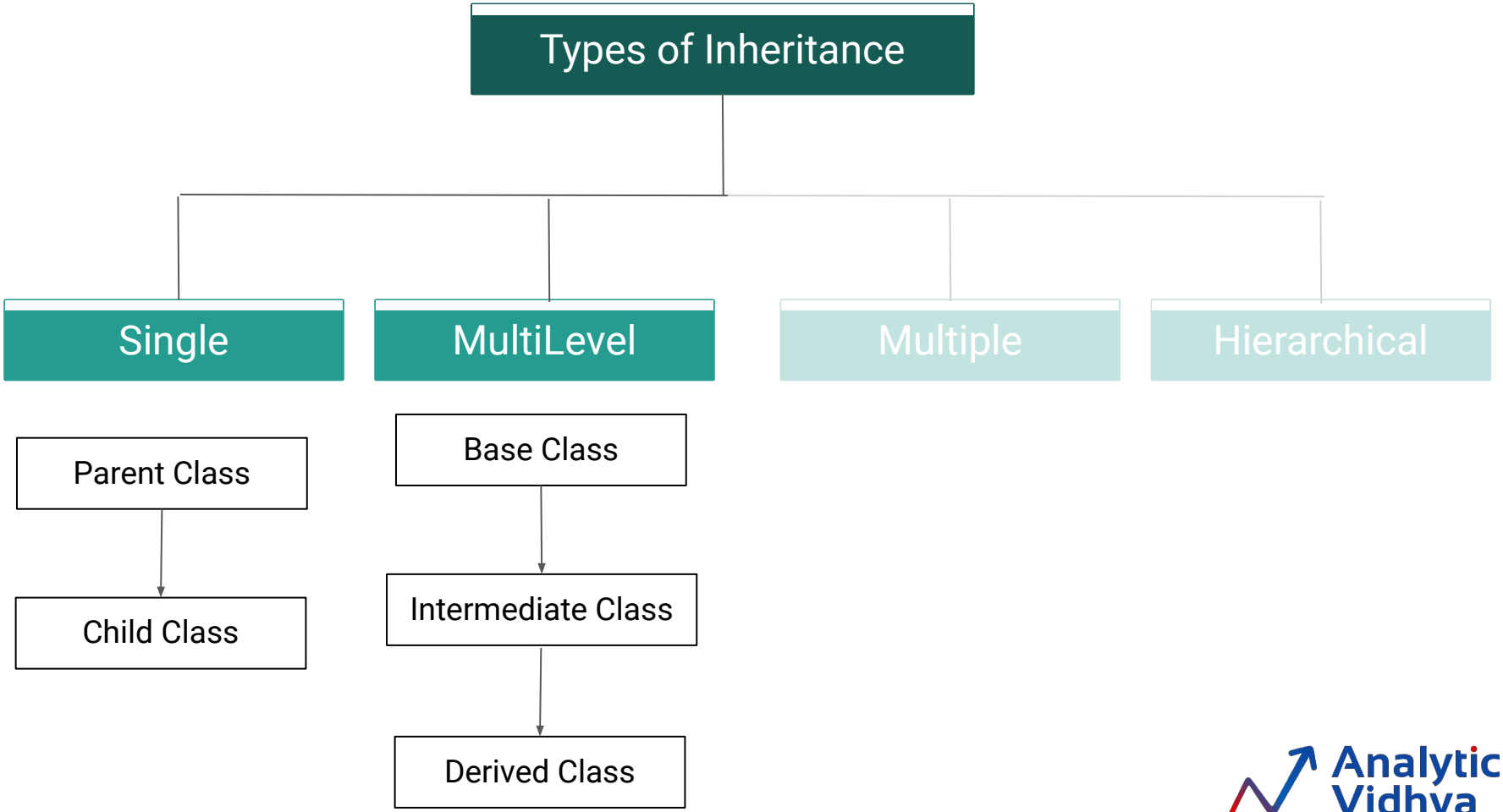
Analytics Vidhya



Analytics Vidhya

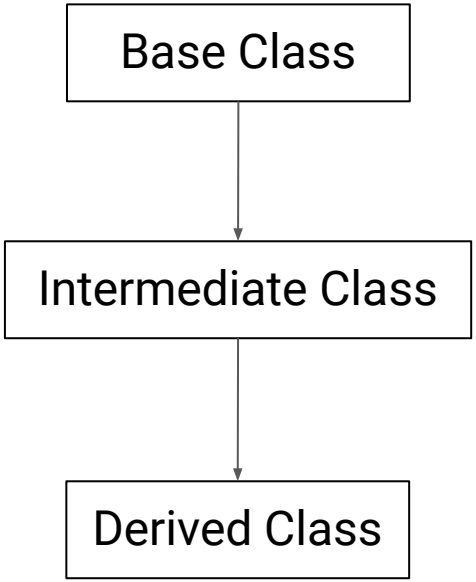


Analytics Vidhya



Analytics Vidhya

Multi-level Inheritance



Vehicles

Cars

Electric Cars

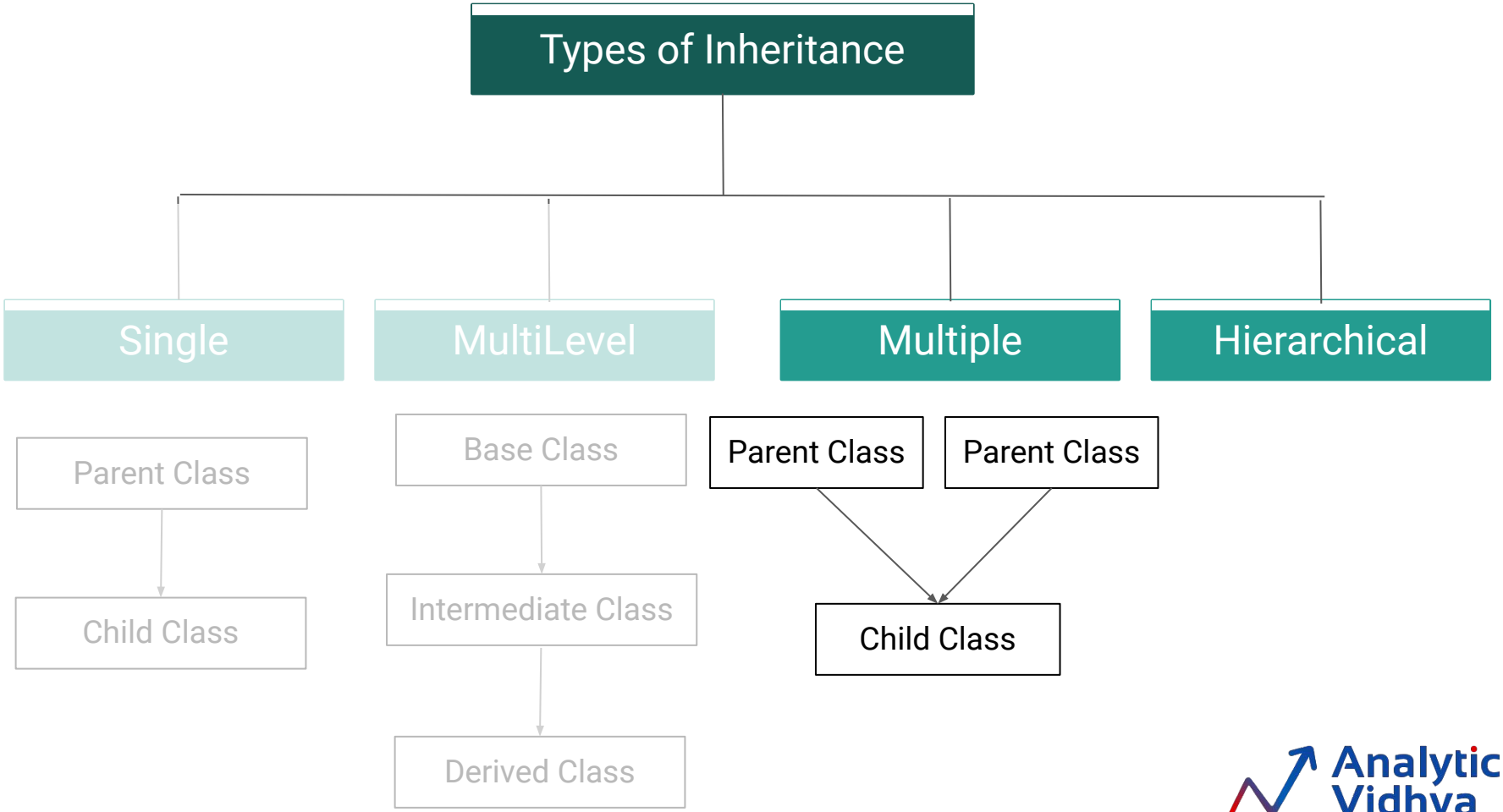
Multi-level Inheritance

Analytics Vidhya

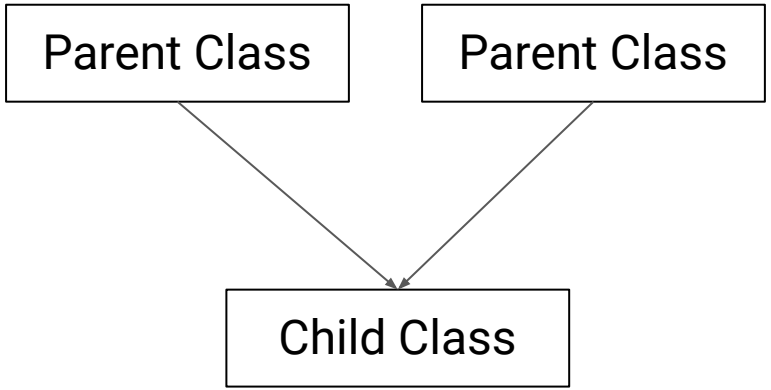
Notebook

Analytics Vidhya

Multiple and Hierarchical Inheritance


Types of Inheritance
Single
MultiLevel
Multiple
Hierarchical
Parent Class
Child Class
Base Class
Intermediate Class
Derived Class
Parent Class
Parent Class
Child Class
Analytics Vidhya

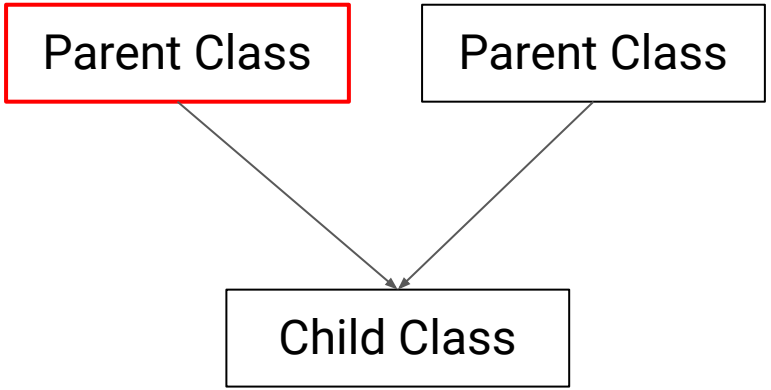
Multiple Inheritance - Example



Multiple Inheritance

Analytics Vidhya

Multiple Inheritance - Example



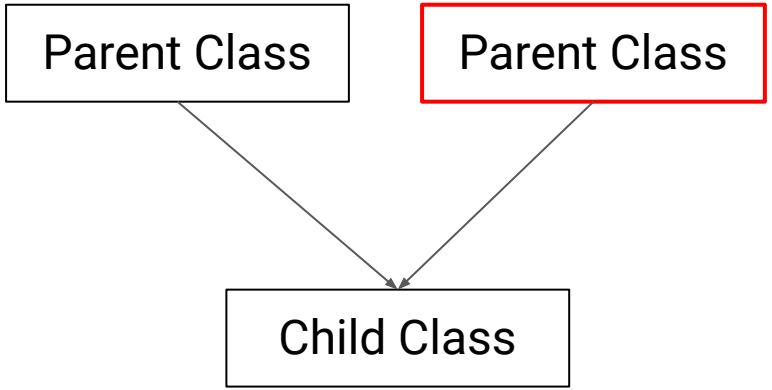
Vehicle specifications

- Vehicle number
- Fuel Type
- Fuel Capacity
- Power

Multiple Inheritance

Analytics Vidhya

Multiple Inheritance - Example



Vehicle specifications

- Vehicle number
- Fuel Type
- Fuel Capacity
- Power

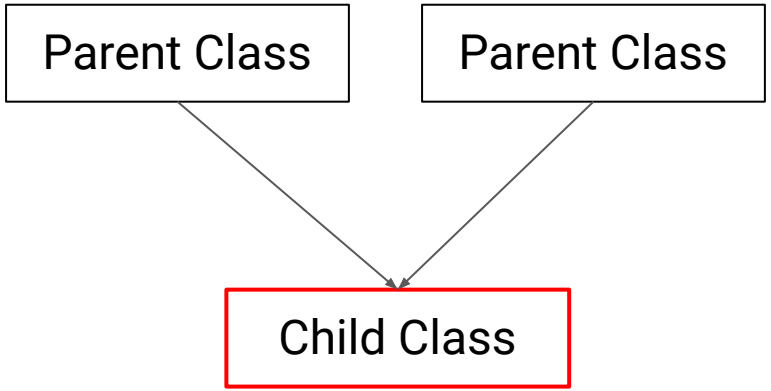
Cost Calculation

- Ex-showroom
- Road tax
- Insurance

Multiple Inheritance

Analytics Vidhya

Multiple Inheritance - Example



Vehicle specifications

- Vehicle number
- Fuel Type
- Fuel Capacity
- Power

Cost Calculation

- Ex-showroom
- Road tax
- Insurance

Registering Car

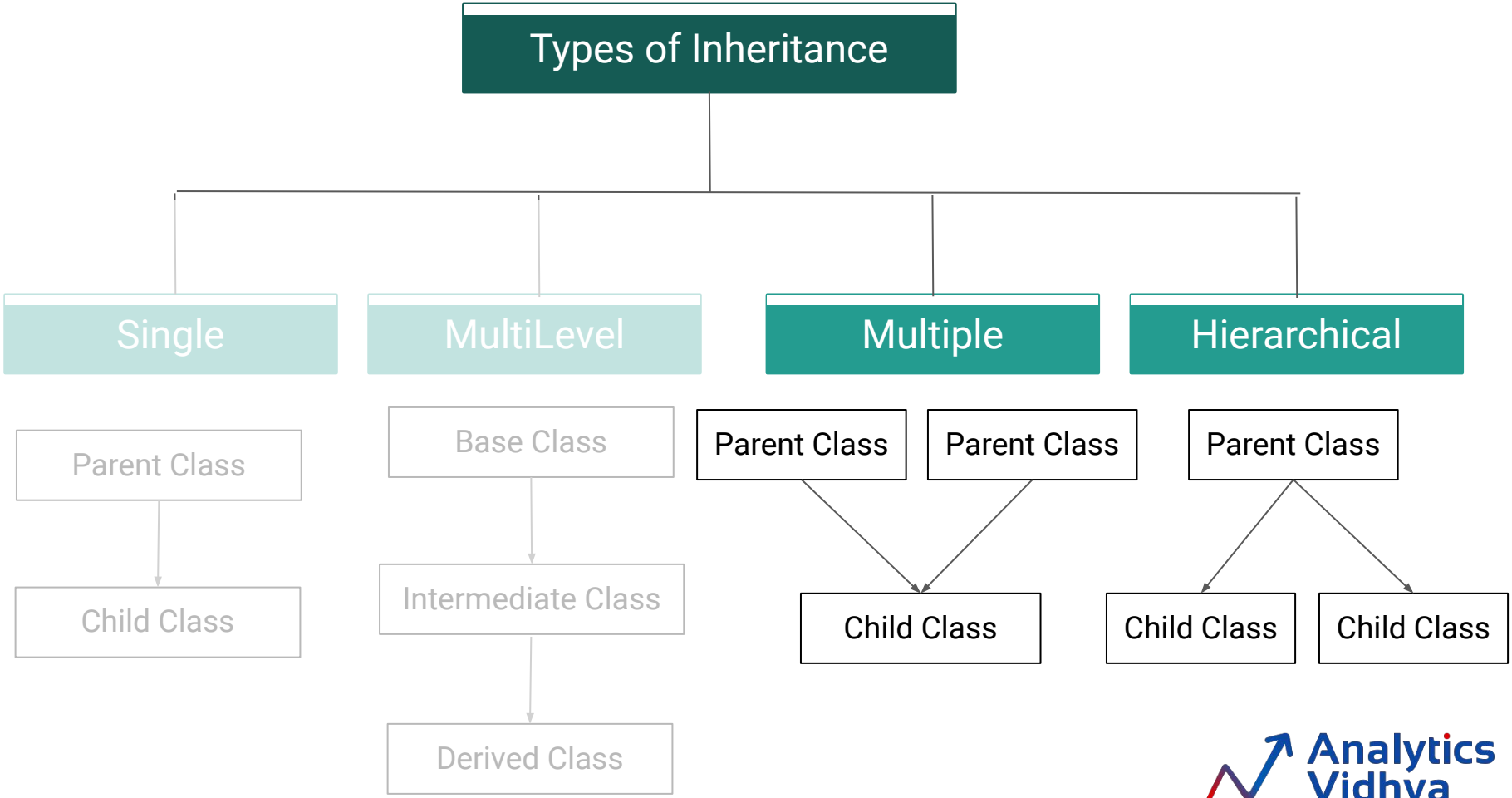
- Vehicle details
- On road price

Multiple Inheritance

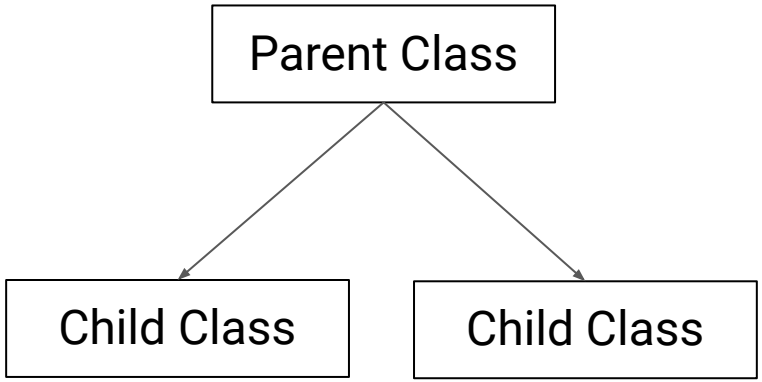
Analytics Vidhya

Notebook

Analytics Vidhya


Types of Inheritance
Single
MultiLevel
Multiple
Hierarchical
Parent Class
Child Class
Base Class
Intermediate Class
Derived Class
Parent Class
Parent Class
Child Class
Parent Class
Child Class
Child Class
Analytics Vidhya

Hierarchical Inheritance

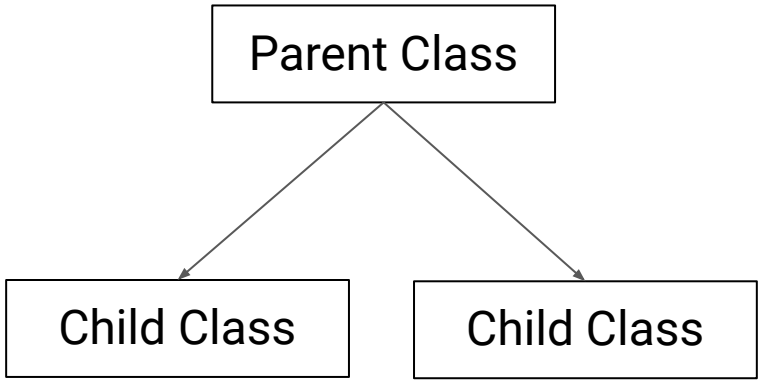


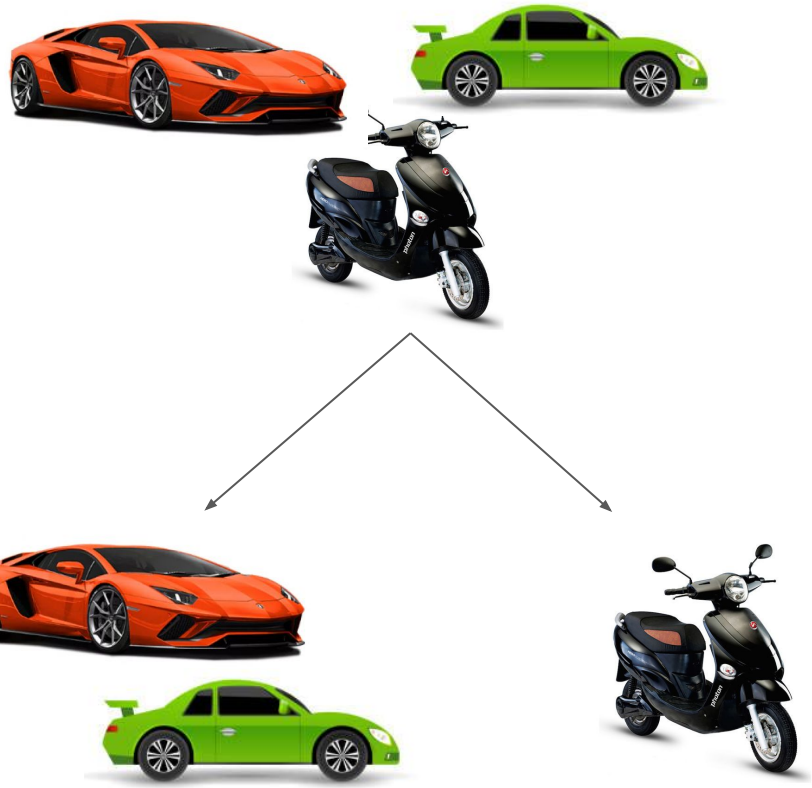
All Vehicles

Hierarchical Inheritance

Analytics Vidhya

Hierarchical Inheritance





Hierarchical Inheritance

Notebook

Analytics Vidhya

Thank You

Let's take an example!

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

```
class Electric_Cars(Cars):
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
    super().__init__(number, fuel_capacity, exshowroom_price)
    self.charger_type = charger_type
    self.charging_cost = charging_cost
```

Analytics Vidhya

Let's take an example!

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

```
class Electric_Cars(Cars):
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
    super().__init__(number, fuel_capacity, exshowroom_price)
    self.charger_type = charger_type
    self.charging_cost = charging_cost
```

Analytics Vidhya

Let's take an example!

```
class Cars:
  def __init__(self, number, fuel_capacity, exshowroom_price):
    self.number = number
    self.fuel_capacity = fuel_capacity
    self.exshowroom_price = exshowroom_price
```

```
class Electric_Cars(Cars):
  def __init__(self, number, fuel_capacity, exshowroom_price, charger_type, charging_cost):
    super().__init__(number, fuel_capacity, exshowroom_price)
    self.charger_type = charger_type
    self.charging_cost = charging_cost
```

Analytics Vidhya

Power Connector Types

ebikekit.com