Lab 03: "Introduction to Simple Classes, Attributes and Methods"

Home Task:

Task 02:

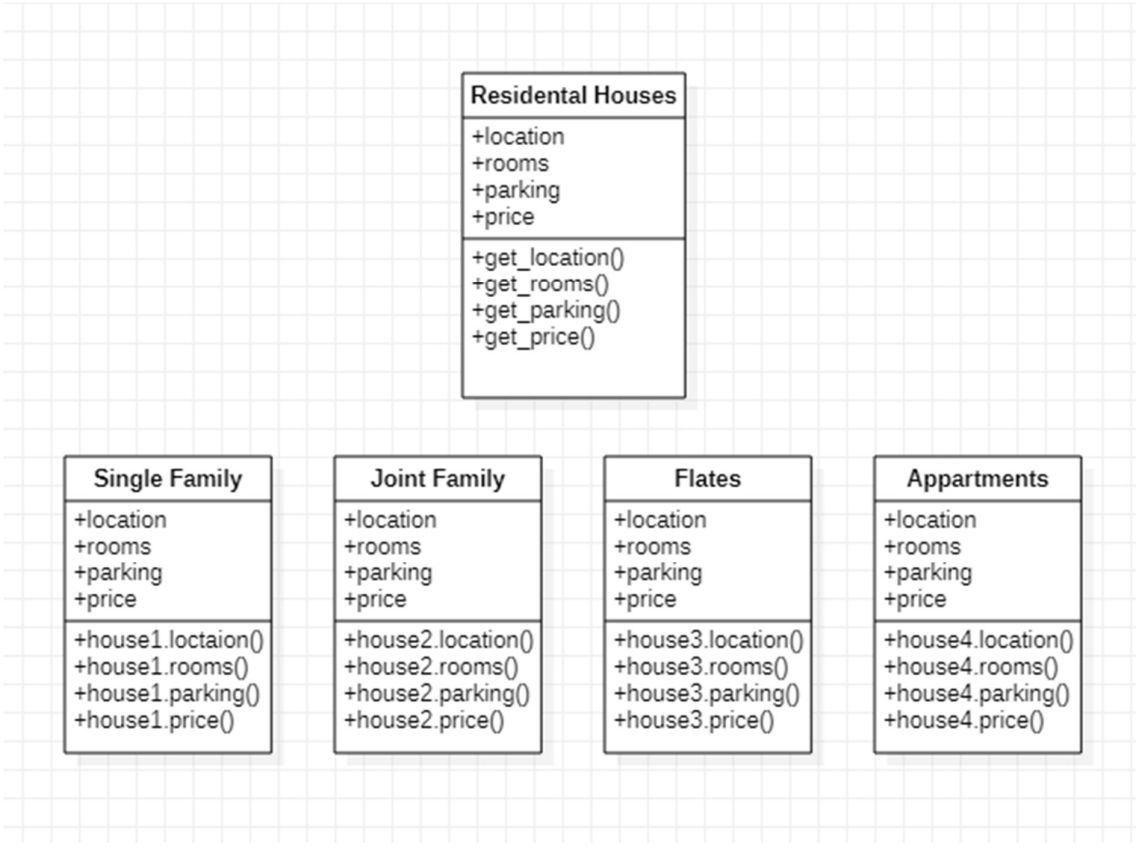
Code:

```
class Residental_Houses:
    def __init__(self, location, rooms, parking, price):
        self.location = location
        self.rooms = rooms
        self.parking = parking
        self.price = price

class SingleFamily(Residental_Houses):
    house_1 = Residental_Houses("Soldier Bazar", 4, "Yes", 15000000)
    print("\t Single Family")
    print("Location:", house_1.location)
    print("Rooms:", house_1.rooms)
    print("Parking:", house_1.parking)
    print("Price:", house_1.price)
    print("\n")

class JointFamily(Residental_Houses):
    house_2 = Residental_Houses("Gulshan-e-Iqbal", 3, "No", 8000000)
    print("\t Joint Family")
    print("Location:", house_2.location)
    print("Rooms:", house_2.rooms)
    print("Parking:", house_2.parking)
    print("Price:", house_2.price)
    print("\n")

class Flates(Residental_Houses):
    house_3 = Residental_Houses("Nazimabad", 5, "Yes", 200000000)
    print("\t Flates")
    print("Location:", house_3.location)
    print("Rooms:", house_3.rooms)
    print("Parking:", house_3.parking)
    print("Price:", house_3.price)
    print("\n")

class Appartments(Residental_Houses):
    house_4 = Residental_Houses("Gulberg Chowrangi", 4, "No", 22000000)
    print("\t Appartmnets")
    print("Location:", house_4.location)
    print("Rooms:", house_4.rooms)
    print("Parking:", house_4.parking)
    print("Price:", house_4.price)
    print("\n")
```

Output:

```
In [1]: runfile('C:/Users/LENOVO/Desktop/Lab 03/Q2.py', wdir='C:/Users/LENOVO/Desktop/Lab 03')
        Single Family
Location: Soldier Bazar
Rooms: 4
Parking: Yes
Price: 15000000


        Joint Family
Location: Gulshan-e-Iqbal
Rooms: 3
Parking: No
Price: 8000000


        Flates
Location: Nazimabad
Rooms: 5
Parking: Yes
Price: 200000000


        Appartmnets
Location: Gulberg Chowrangi
Rooms: 4
Parking: No
Price: 22000000
```

Class Diagram:



Task 03:

Code:

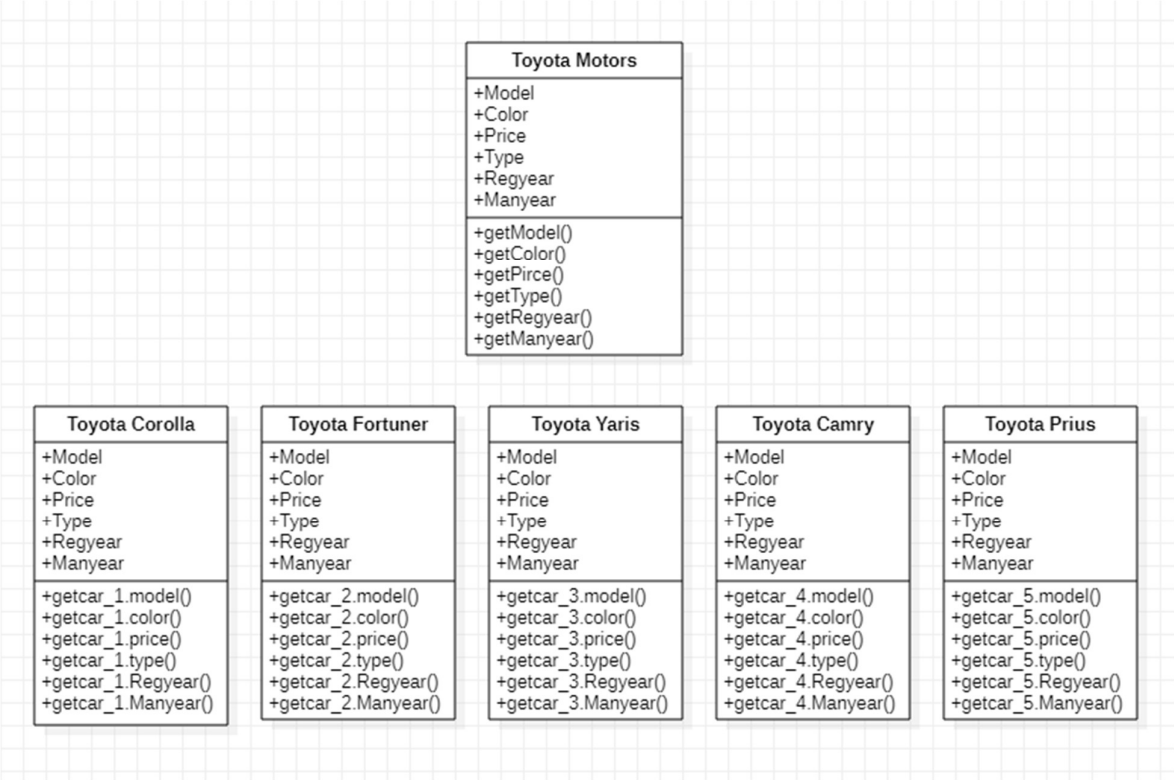
```
class Toyota_Motors:
    def __init__(self, model, color, price, type, Regyear, Manyear):
        self.model = model
        self.color = color
        self.price = price
        self.type = type
        self.Regyear = Regyear
        self.Manyear = Manyear

class ToyotaCorolla(Toyota_Motors):
    car_1 = Toyota_Motors(2016, "Black", 2500000, "Saloon", 2016, 2015)
    print("\t\t\t Toyota Corolla")
    print("Manufactured Year:", car_1.Manyear)
    print("Registerd Year:", car_1.Regyear)
    print("Type:", car_1.type)
    print("Price:", car_1.price)
    print("Model:", car_1.model)
    print("Color:", car_1.color)
    print("\n")

class ToyotaFortuner(Toyota_Motors):
    car_2 = Toyota_Motors(2019, "White", 3500000, "Luxury", 2019, 2020)
    print("\t\t\t Toyota Fortuner")
    print("Manufactured Year:", car_2.Manyear)
    print("Registerd Year:", car_2.Regyear)
    print("Type:", car_2.type)
    print("Price:", car_2.price)
    print("Model:", car_2.model)
    print("Color:", car_2.color)
    print("\n")

class ToyotaYaris(Toyota_Motors):
    car_3 = Toyota_Motors(2018, "Red", 2800000, "Saloon", 2018, 2019)
    print("\t\t\t Toyota Glanza")
    print("Manufactured Year:", car_3.Manyear)
    print("Registerd Year:", car_3.Regyear)
    print("Type:", car_3.type)
    print("Price:", car_3.price)
    print("Model:", car_3.model)
    print("Color:", car_3.color)
    print("\n")

class ToyotaCamry(Toyota_Motors):
    car_4 = Toyota_Motors(2013, "Grey", 3700000, "Saloon", 2015, 2014)
    print("\t\t\t Toyota Camry")
    print("Manufactured Year:", car_4.Manyear)
    print("Registerd Year:", car_4.Regyear)
    print("Type:", car_4.type)
    print("Price:", car_4.price)
    print("Model:", car_4.model)
```

```
    print("Color:", car_4.color)
    print("\n")

class ToyotaPrius(Toyota_Motors):
    car_5 = Toyota_Motors(2010, "Blue", 4500000, "Saloon", 2013, 2012)
    print("\t\t\t Toyota Prius")
    print("Manufactured Year:", car_5.Manyear)
    print("Registerd Year:", car_5.Regyear)
    print("Type:", car_5.type)
    print("Price:", car_5.price)
    print("Model:", car_5.model)
    print("Color:", car_5.color)
    print("\n")
```

Output:

```
In [3]: runfile('C:/Users/LENOVO/Desktop/Lab 03/Q3.py', wdir='C:/Users/LENOVO/Desktop/Lab 03')
                        Toyota Corolla
Manufactured Year: 2015
Registerd Year: 2016
Type: Saloon
Price: 2500000
Model: 2016
Color: Black


                        Toyota Fortuner
Manufactured Year: 2020
Registerd Year: 2019
Type: Luxury
Price: 3500000
Model: 2019
Color: White


                        Toyota Glanza
Manufactured Year: 2019
Registerd Year: 2018
Type: Saloon
Price: 2800000
Model: 2018
Color: Red


                        Toyota Camry
Manufactured Year: 2014
Registerd Year: 2015
Type: Saloon
Price: 3700000
Model: 2013
Color: Grey


                        Toyota Prius
Manufactured Year: 2012
Registerd Year: 2013
Type: Saloon
Price: 4500000
Model: 2010
Color: Blue
```

Class Diagram:



Task 04:

Code:

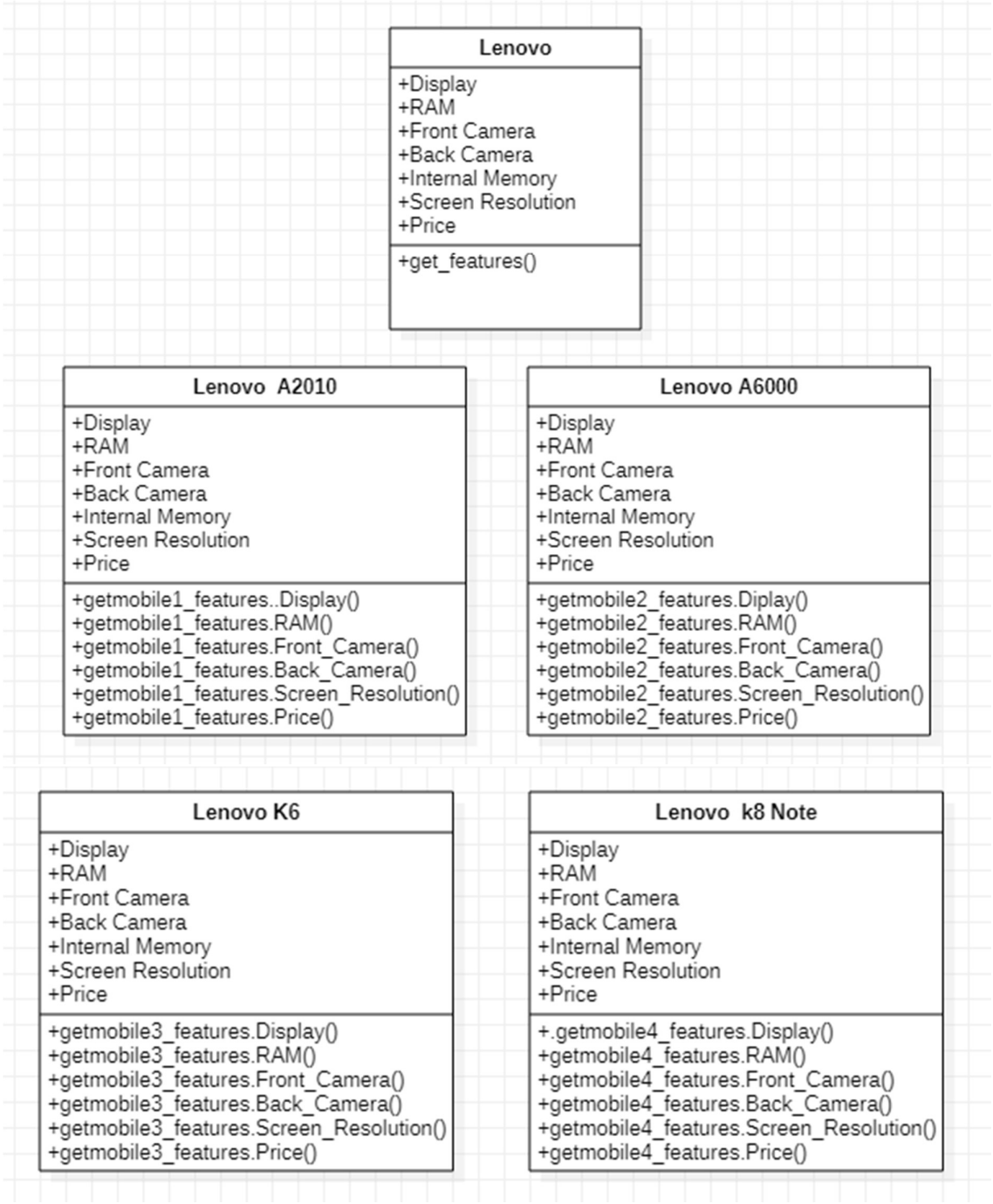
```
class Lenovo:
    def __init__(self, Display, RAM ,Front_Camera, Back_Camera,
                 Internal_Memory, Screen_Resolution, Price):
        self.Display = Display
        self.RAM = RAM
        self.Front_Camera = Front_Camera
        self.Back_Camera = Back_Camera
        self.Internal_Memory = Internal_Memory
        self.Screen_Resolution = Screen_Resolution
        self.Price = Price

class Lenovo_A2010(Lenovo):
    mobile1_features = Lenovo("4.5 inches", "1GB", "2MP", "5MP", "8GB",
                              "720*1280 pixels", "9000")
    print("\t Lenovo A2010")
    print("Display:", mobile1_features.Display)
    print("RAM:", mobile1_features.RAM)
    print("Front Camera:", mobile1_features.Front_Camera)
    print("Back Camera:", mobile1_features.Back_Camera)
    print("Internal Memory:", mobile1_features.Internal_Memory)
    print("Screen Resolution:", mobile1_features.Screen_Resolution)
    print("Price:", mobile1_features.Price)
    print("\n")

class Lenovo_A6000(Lenovo):
    mobile2_features = Lenovo("5.0 inches", "1GB", "8MP", "2MP", "8GB",
                              "720*1280  pixels", "13900")
    print("\t Lenovo A6000")
    print("Display:", mobile2_features.Display)
    print("RAM:", mobile2_features.RAM)
    print("Front Camera:", mobile2_features.Front_Camera)
    print("Back Camera:", mobile2_features.Back_Camera)
    print("Internal Memory:", mobile2_features.Internal_Memory)
    print("Screen Resolution:", mobile2_features.Screen_Resolution)
    print("Price:", mobile2_features.Price)
    print("\n")

class Lenovo_k6(Lenovo):
    mobile3_features = Lenovo("5 inches", "2GB", "8MP", "13MP", "16/32GB",
                              "1080*1920 pixels", "17,990")
    print("\t Lenovo k6")
    print("Display:", mobile3_features.Display)
    print("RAM:", mobile3_features.RAM)
    print("Front Camera:", mobile3_features.Front_Camera)
    print("Back Camera:", mobile3_features.Back_Camera)
    print("Internal Memory:", mobile3_features.Internal_Memory)
    print("Screen Resolution:", mobile3_features.Screen_Resolution)
    print("Price:", mobile3_features.Price)
    print("\n")

```

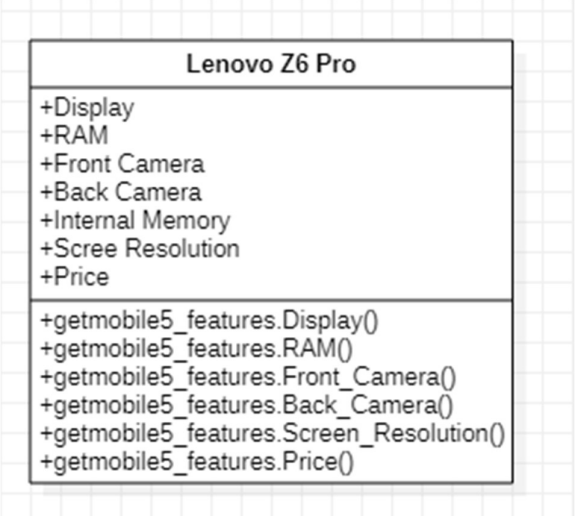
```
51 class Lenovo_k8_note(Lenovo):
52     mobile4_features = Lenovo("5.5 inches", "4GB", "13MP", "13MP", "64GB",
53                               "1080*1920 pixels", "18,000")
54     print("\t Lenovo K8 Note")
55     print("Display:", mobile4_features.Display)
56     print("RAM:", mobile4_features.RAM)
57     print("Front Camera:", mobile4_features.Front_Camera)
58     print("Back Camera:", mobile4_features.Back_Camera)
59     print("Internal Memory:", mobile4_features.Internal_Memory)
60     print("Screen Resolution:", mobile4_features.Screen_Resolution)
61     print("Price:", mobile4_features.Price)
62     print("\n")
63
64 class Lenovo_Z6_Pro(Lenovo):
65     mobile5_features = Lenovo("6.39 inches", "12GB", "32MP", "16MP", "512GB",
66                               "1080*2340 pixels", "50,784")
67     print("\t Lenovo Z6 Pro")
68     print("Display:", mobile5_features.Display)
69     print("RAM:", mobile5_features.RAM)
70     print("Front Camera:", mobile5_features.Front_Camera)
71     print("Back Camera:", mobile5_features.Back_Camera)
72     print("Internal Memory:", mobile5_features.Internal_Memory)
73     print("Screen Resolution:", mobile5_features.Screen_Resolution)
74     print("Price:", mobile5_features.Price)
75     print("\n")
```

Output:

```
In [4]: runfile('C:/Users/LENOVO/Desktop/Lab 03/Q4.py', wdir='C:/Users/LENOVO/Desktop/Lab 03')
        Lenovo A2010
Display: 4.5 inches
RAM: 1GB
Front Camera: 2MP
Back Camera: 5MP
Internal Memory: 8GB
Screen Resolution: 720*1280 pixels
Price: 9000


        Lenovo A6000
Display: 5.0 inches
RAM: 1GB
Front Camera: 8MP
Back Camera: 2MP
Internal Memory: 8GB
Screen Resolution: 720*1280  pixels
Price: 13900


        Lenovo k6
Display: 5 inches
RAM: 2GB
Front Camera: 8MP
Back Camera: 13MP
Internal Memory: 16/32GB
Screen Resolution: 1080*1920 pixels
Price: 17,990


        Lenovo K8 Note
Display: 5.5 inches
RAM: 4GB
Front Camera: 13MP
Back Camera: 13MP
Internal Memory: 64GB
Screen Resolution: 1080*1920 pixels
Price: 18,000


        Lenovo Z6 Pro
Display: 6.39 inches
RAM: 12GB
Front Camera: 32MP
Back Camera: 16MP
Internal Memory: 512GB
Screen Resolution: 1080*2340 pixels
Price: 50,784
```

Class Diagram:




Lenovo Z6 Pro
+Display
+RAM
+Front Camera
+Back Camera
+Internal Memory
+Scree Resolution
+Price
+getmobile5_features.Display()
+getmobile5_features.RAM()
+getmobile5_features.Front_Camera()
+getmobile5_features.Back_Camera()
+getmobile5_features.Screen_Resolution()
+getmobile5_features.Price()