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

Home Task:

Task 02:

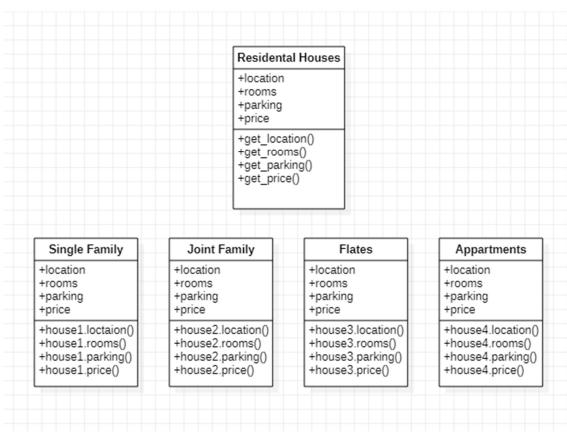
Code:

```
1 class Residental Houses:
     def __init__(self, location, rooms, parking, price):
           self.location = location
           self.rooms = rooms
           self.parking = parking
           self.price = price
8 class SingleFamily(Residental_Houses):
      house 1 = Residental Houses("Soldier Bazar", 4, "Yes", 15000000)
    print("\t Single Family")
10
     print("Location:", house_1.location)
11
    print("Rooms:", house_1.location
print("Rooms:", house_1.rooms)
print("Parking:", house_1.parking)
print("Price:", house_1.price)
13
14
      print("\n")
15
16
17 class JointFamily(Residental_Houses):
    print("\t Joint Family")
print("Location:", house_2.location)
print("Rooms:", house_2.rooms)
print("Parking:", house_2.rooms)
     house 2 = Residental Houses("Gulshan-e-Iqbal", 3, "No", 8000000)
19
20
21
     print("Parking:", house_2.parking)
22
       print("Price:", house_2.price)
23
      print("\n")
24
26 class Flates(Residental Houses):
     house 3 = Residental Houses("Nazimabad", 5, "Yes", 200000000)
27
     print("\t Flates")
print("Location:", house_3.location)
28
29
    print("Rooms:", house_3.rooms)
30
    print("Parking:", house_3.parking)
31
     print("Price:", house_3.price)
32
      print("\n")
33
34
35 class Appartments(Residental Houses):
     house 4 = Residental Houses("Gulberg Chowrangi", 4, "No", 22000000)
     print("\t Appartmnets")
print("Location:", house_4.location)
37
38
     print("Rooms:", house_4.rooms)
     print("Parking:", house_4.parking)
41
     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:



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Task 03:

Code:

```
1 class Toyota Motors:
       def __init__(self, model, color, price, type, Regyear, Manyear):
           self.model = model
 4
           self.color = color
           self.price = price
 5
 6
           self.type = type
 7
           self.Regyear = Regyear
 8
           self.Manyear = Manyear
10 class ToyotaCorolla(Toyota_Motors):
      car_1 = Toyota_Motors(2016, "Black", 2500000, "Saloon", 2016, 2015)
11
       print("\t\t Toyota Corolla")
12
       print("Manufactured Year:", car_1.Manyear)
13
       print("Registerd Year:", car_1.Regyear)
14
      print("Type:", car_1.type)
print("Price:", car_1.price)
print("Model:", car_1.model)
15
16
17
       print("Color:", car_1.color)
18
       print("\n")
19
20
21 class ToyotaFortuner(Toyota Motors):
       car_2 = Toyota_Motors(2019, "White", 3500000, "Luxury", 2019, 2020)
       print("\t\t Toyota Fortuner")
23
       print("Manufactured Year:", car_2.Manyear)
24
       print("Registerd Year:", car_2.Regyear)
25
       print("Type:", car_2.type)
print("Price:", car_2.price)
print("Model:", car_2.model)
print("Color:", car_2.color)
26
27
28
29
       print("\n")
30
31
32 class ToyotaYaris(Toyota Motors):
      car_3 = Toyota_Motors(2018, "Red", 2800000, "Saloon", 2018, 2019)
33
       print("\t\t\t Toyota Glanza")
34
       print("Manufactured Year:", car_3.Manyear)
35
       print("Registerd Year:", car_3.Regyear)
print("Type:", car_3.type)
print("Price:", car_3.price)
36
37
38
39
     print("Model:", car_3.model)
     print("Color:", car_3.color)
40
41
       print("\n")
42
43 class ToyotaCamry(Toyota_Motors):
       car_4 = Toyota_Motors(2013, "Grey", 3700000, "Saloon", 2015, 2014)
       print("\t\t\t Toyota Camry")
45
       print("Manufactured Year:", car_4.Manyear)
46
      print("Registerd Year:", car_4.Regyear)
47
48
     print("Type:", car_4.type)
     print("Price:", car_4.price)
49
       print("Model:", car_4.model)
```

```
51
           print("Color:", car_4.color)
           print("\n")
 52
 53
 54 class ToyotaPrius(Toyota_Motors):
           car_5 = Toyota_Motors(2010, "Blue", 4500000, "Saloon", 2013, 2012)
           print("\t\t Toyota Prius")
 56
           print("Manufactured Year:", car_5.Manyear)
 57
           print("Registerd Year:", car_5.Regyear)
 58
          print( Registerd Year: , car
print("Type:", car_5.type)
print("Price:", car_5.price)
print("Model:", car_5.model)
print("Color:", car_5.color)
print("\n")
 59
 60
 61
 62
 63
```

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:

Toyota Motors
+Model +Color +Price +Type +Regyear +Manyear
+getModel() +getColor() +getPirce() +getPype() +getRegyear() +getRegyear() +getManyear()

-	Toyota Corolla
	+Model +Color +Price +Type +Regyear +Manyear
	+getcar_1.model() +getcar_1.color() +getcar_1.price() +getcar_1.type() +getcar_1.Regyear() +getcar_1.Manyear()

+Model +Color +Price +Type +Regyear +Manyear
+getcar_2 model() +getcar_2 color() +getcar_2 price() +getcar_2 type() +getcar_2 Regyear() +getcar_2 Manyear()

Toyota Fortuner

Toyota Yaris	
+Model +Color +Price +Type +Regyear +Manyear	
+getcar_3.model() +getcar_3.color() +getcar_3.price() +getcar_3.type() +getcar_3.Regyear() +getcar_3.Manyear()	

Toyota Camry		
+Model +Color +Price +Type +Regyear +Manyear		
+getcar_4.model() +getcar_4.color() +getcar_4.price() +getcar_4.type() +getcar_4.Regyear() +getcar_4.Manyear()		

Task 04:

Code:

```
1 class Lenovo:
     def __init__(self, Display, RAM ,Front_Camera, Back_Camera,
                   Internal Memory, Screen Resolution, Price):
         self.Display = Display
 4
 5
         self.RAM = RAM
         self.Front_Camera = Front_Camera
7
         self.Back_Camera = Back_Camera
        self.Internal_Memory = Internal_Memory
9
        self.Screen Resolution = Screen Resolution
10
        self.Price = Price
11
12 class Lenovo A2010(Lenovo):
     mobile1 features = Lenovo("4.5 inches", "1GB", "2MP", "5MP", "8GB",
14
                                "720*1280 pixels", "9000")
15
    print("\t Lenovo A2010")
   print("Display:", mobile1 features.Display)
17
    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)
23
    print("\n")
24
25 class Lenovo A6000(Lenovo):
      mobile2_features = Lenovo("5.0 inches", "1GB", "8MP", "2MP", "8GB",
                                "720*1280 pixels", "13900")
27
    print("\t Lenovo A6000")
28
29
    print("Display:", mobile2 features.Display)
30
   print("RAM:", mobile2_features.RAM)
    print("Front Camera:", mobile2_features.Front_Camera)
31
    print("Back Camera:", mobile2_features.Back_Camera)
    print("Internal Memory:", mobile2_features.Internal_Memory)
    print("Screen Resolution:", mobile2 features.Screen Resolution)
35
     print("Price:", mobile2 features.Price)
      print("\n")
36
37
38 class Lenovo k6(Lenovo):
      mobile3_features = Lenovo("5 inches", "2GB", "8MP", "13MP", "16/32GB",
39
                                "1080*1920 pixels", "17,990")
40
      print("\t Lenovo k6")
41
      print("Display:", mobile3_features.Display)
42
      print("RAM:", mobile3_features.RAM)
43
      print("Front Camera:", mobile3_features.Front_Camera)
44
      print("Back Camera:", mobile3_features.Back_Camera)
45
      print("Internal Memory:", mobile3_features.Internal_Memory)
46
      print("Screen Resolution:", mobile3_features.Screen_Resolution)
47
      print("Price:", mobile3_features.Price)
48
      print("\n")
49
50
```

```
51 class Lenovo k8 note(Lenovo):
        mobile4_features = Lenovo("5.5 inches", "4GB", "13MP", "13MP", "64GB", "1080*1920 pixels", "18,000")
  53
       print("\t Lenovo K8 Note")
  54
  55
        print("Display:", mobile4_features.Display)
        print("RAM:", mobile4_features.RAM)
  56
        print("Front Camera:", mobile4_features.Front_Camera)
  57
  58
      print("Back Camera:", mobile4_features.Back_Camera)
      print("Internal Memory:", mobile4_features.Internal_Memory)
  59
  60 print("Screen Resolution:", mobile4_features.Screen_Resolution)
        print("Price:", mobile4_features.Price)
  61
       print("\n")
 62
 63
  64 class Lenovo_Z6_Pro(Lenovo):
        mobile5_features = Lenovo("6.39 inches", "12GB", "32MP", "16MP", "512GB",
  65
                                   "1080*2340 pixels", "50,784")
  66
  67
        print("\t Lenovo Z6 Pro")
        print("Display:", mobile5_features.Display)
  68
        print("RAM:", mobile5_features.RAM)
  69
        print("Front Camera:", mobile5_features.Front_Camera)
  70
        print("Back Camera:", mobile5_features.Back_Camera)
  71
        print("Internal Memory:", mobile5_features.Internal_Memory)
  72
        print("Screen Resolution:", mobile5_features.Screen_Resolution)
  73
 74
        print("Price:", mobile5_features.Price)
 75 print("\n")
```

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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 +Display +RAM +Front Camera +Back Camera +Internal Memory +Screen Resolution +Price +get features()

Lenovo A2010

- +Display
- +RAM
- +Front Camera
- +Back Camera
- +Internal Memory
- +Screen Resolution
- +Price
- +getmobile1_features..Display()
- +getmobile1 features.RAM()
- +getmobile1_features.Front Camera()
- +getmobile1 features.Back Camera()
- +getmobile1 features.Screen Resolution()
- +getmobile1 features.Price()

Lenovo A6000

- +Display
- +RAM ´
- +Front Camera
- +Back Camera
- +Internal Memory
- +Screen Resolution
- +Price
- +getmobile2_features.Diplay()
- +getmobile2 features.RAM()
- +getmobile2 features.Front Camera()
- +getmobile2 features.Back Camera()
- +getmobile2_features.Screen_Resolution()
- +getmobile2 features.Price()

Lenovo K6

- +Display
- +RAM
- +Front Camera
- +Back Camera
- +Internal Memory
- +Screen Resolution
- +Price
- +getmobile3_features.Display()
- +getmobile3_features.RAM()
- +getmobile3_features.Front_Camera()
- +getmobile3_features.Back_Camera()
- +getmobile3 features.Screen Resolution()
- +getmobile3 features.Price()

Lenovo k8 Note

- +Display
- +RAM
- +Front Camera
- +Back Camera
- +Internal Memory
- +Screen Resolution
- +Price
- +.getmobile4_features.Display()
- +getmobile4_features.RAM()
- +getmobile4_features.Front_Camera()
- +getmobile4_features.Back_Camera()
- +getmobile4_features.Screen Resolution()
- +getmobile4 features.Price()

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Lenovo Z6 Pro	
	Camera
+getmok +getmok +getmok +getmok	oile5_features.Display() oile5_features.RAM() oile5_features.Front_Camera() oile5_features.Back_Camera() oile5_features.Screen_Resolution() oile5_features.Price()