

GEBZE TECHNICAL UNIVERSITY
CSE443 OBJECT ORIENTED PROGRAMMING
HOMEWORK – 3 REPORT
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Answer 1 :

Factory uses Market and Models for creating a Phone. For example

Market : TurkeyMarket	Model: Iflas Delux
PhoneFactory: TurkeyFactory PHONE	

Asembly steps :

1. Attaching CPU&RAM to the board
2. Attaching Display
3. Attaching Battery
4. Attaching Storage
5. Attaching Camera
6. Enclosing PhoneCase

Each factory makes each steps by one by. And each factory make differant types pf phones.

```
# IFLAS TECHNOLOGIES LTD #
1 . Turkey Factory
2 . EU Factory
3 . Global Factory
4 . Exit
Please enter your factory >> |
```

Şekil 1: Iflas Technology Screen

```

# IFLAS TECHNOLOGIES LTD #
1 . Turkey Factory
2 . EU Factory
3 . Global Factory
4 . Exit
Please enter your factory >> 1
-----
Market : Turkey
Model : MaximumEffort
1 - Attaching CPU and RAM
    Frekans : 2.8 GHz
    Capacity : 8 GB
    Core : 8 cores

2 - Attaching Display
    Size : 5.5 inches
    Bit : 32 bit

3 - Attaching Battery
    Type : Lityum-Borom
    Frekans : 27 h
    Amper : 3600 mAh

4 - Attaching Storage
    Type : MicroSD
    SupportCap : 64 GB
    Max Cap : 128 GB

5 - Attaching Camera
    Front : 12.0 MP
    Rear : 8.0 MP
    Zoom : 4 xZoom

6 - Attaching Case
    Size : 151.0 x 73.0 x 7.3 mm
    Material : Aluminum
    Guard : WaterProof DustProof
    Max Guard : 200.0cm
-----

```

Şekil 2: Factory Turkey Model MaximumEffort

```

Market : Turkey
Model : Iflas Deluxe
1 - Attaching CPU and RAM
    Frekans : 2.2 GHz
    Capacity : 6 GB
    Core : 8 cores

2 - Attaching Display
    Size : 5.3 inches
    Bit : 32 bit

3 - Attaching Battery
    Type : Lityum-Borom
    Frekans : 20 h
    Amper : 2800 mAh

4 - Attaching Storage
    Type : MicroSD
    SupportCap : 23 GB
    Max Cap : 128 GB

5 - Attaching Camera
    Front : 12.0 MP
    Rear : 5.0 MP
    Zoom : 4 xZoom

6 - Attaching Case
    Size : 149.0 x 73.0 x 7.7 mm
    Material : Aluminum
    Guard : WaterProof
    Max Guard : 200.0cm
-----

```

Şekil 3:Factory Turkey Model IflasDelux

```

Market : Turkey
Model  : IAman Iflas
1 - Attaching CPU and RAM
    Frekans : 2.2 GHz
    Capacity : 4 GB
    Core    : 8 cores

2 - Attaching Display
    Size : 4.5 inches
    Bit  : 32 bit

3 - Attaching Battery
    Type   : Lityum-Borom
    Frekans : 16 h
    Amper  : 2000 mAh

4 - Attaching Storage
    Type      : MicroSD
    SupportCap : 16 GB
    Max Cap   : 128 GB

5 - Attaching Camera
    Front : 8.0 MP
    Rear  : 5.0 MP
    Zoom  : 4 xZoom

6 - Attaching Case
    Size      : 143.0 x 69.0 x 7.3 mm
    Material  : Plastic
    Guard     : WaterProof
    Max Guard : 200.0cm

```

Şekil 4: Factory Turkey Model IAman Iflas

```

# IFLAS TECHNOLOGIES LTD #
1 . Turkey Factory
2 . EU Factory
3 . Global Factory
4 . Exit
Please enter your factory >> 2
-----
Market : EUMarket
Model  : MaximumEffort
1 - Attaching CPU and RAM
    Frekans : 2.8 GHz
    Capacity : 8 GB
    Core    : 4 cores

2 - Attaching Display
    Size : 5.5 inches
    Bit  : 24 bit

3 - Attaching Battery
    Type   : Lityum- Iyon
    Frekans : 27 h
    Amper  : 3600 mAh

4 - Attaching Storage
    Type      : MicroSD
    SupportCap : 64 GB
    Max Cap   : 64 GB

5 - Attaching Camera
    Front : 12.0 MP
    Rear  : 8.0 MP
    Zoom  : 3 xZoom

6 - Attaching Case
    Size      : 151.0 x 73.0 x 7.3 mm
    Material  : Aluminum
    Guard     : WaterProof DustProof
    Max Guard : 100.0cm
-----

```

Şekil 5: EU Factory MaximumEffort

```

-----
Market : EUMarket
Model  : Iflas Deluxe
1 - Attaching CPU and RAM
    Frekans   : 2.2 GHz
    Capacity  : 6 GB
    Core      : 4 cores

2 - Attaching Display
    Size      : 5.3 inches
    Bit       : 24 bit

3 - Attaching Battery
    Type      : Lityum- Iyon
    Frekans   : 20 h
    Amper     : 2800 mAh

4 - Attaching Storage
    Type      : MicroSD
    SupportCap : 23 GB
    Max Cap   : 64 GB

5 - Attaching Camera
    Front     : 12.0 MP
    Rear      : 5.0 MP
    Zoom      : 3 xZoom

6 - Attaching Case
    Size      : 149.0 x 73.0 x 7.7 mm
    Material   : Aluminum
    Guard     : Waterproof
    Max Guard  : 100.0cm
-----

```

Şekil 6: EUFactory IflasDelux

```

-----
Market : EUMarket
Model  : IAman Iflas
1 - Attaching CPU and RAM
    Frekans   : 2.2 GHz
    Capacity  : 4 GB
    Core      : 4 cores

2 - Attaching Display
    Size      : 4.5 inches
    Bit       : 24 bit

3 - Attaching Battery
    Type      : Lityum- Iyon
    Frekans   : 16 h
    Amper     : 2000 mAh

4 - Attaching Storage
    Type      : MicroSD
    SupportCap : 16 GB
    Max Cap   : 64 GB

5 - Attaching Camera
    Front     : 8.0 MP
    Rear      : 5.0 MP
    Zoom      : 3 xZoom

6 - Attaching Case
    Size      : 143.0 x 69.0 x 7.3 mm
    Material   : Plastic
    Guard     : Waterproof
    Max Guard  : 100.0cm
-----

```

Şekil 7: EUFactory IAmanIflas

```

# IFLAS TECHNOLOGIES LTD #
1 . Turkey Factory
2 . EU Factory
3 . Global Factory
4 . Exit
Please enter your factory >> 3
-----
Market : Global
Model : MaximumEffort
1 - Attaching CPU and RAM
  Frekans : 2.8 GHz
  Capacity : 8 GB
  Core : 2 cores

2 - Attaching Display
  Size : 5.5 inches
  Bit : 24 bit

3 - Attaching Battery
  Type : Lityum-Cobalt
  Frekans : 27 h
  Amper : 3600 mAh

4 - Attaching Storage
  Type : MicroSD
  SupportCap : 64 GB
  Max Cap : 32 GB

5 - Attaching Camera
  Front : 12.0 MP
  Rear : 8.0 MP
  Zoom : 2 xZoom

6 - Attaching Case
  Size : 151.0 x 73.0 x 7.3 mm
  Material : Aluminum
  Guard : WaterProof DustProof
  Max Guard : 50.0cm
-----

```

Şekil 8: GlobalFactory MaximumEffort

```

-----
Market : Global
Model : Iflas Deluxe
1 - Attaching CPU and RAM
  Frekans : 2.2 GHz
  Capacity : 6 GB
  Core : 2 cores

2 - Attaching Display
  Size : 5.3 inches
  Bit : 24 bit

3 - Attaching Battery
  Type : Lityum-Cobalt
  Frekans : 20 h
  Amper : 2800 mAh

4 - Attaching Storage
  Type : MicroSD
  SupportCap : 23 GB
  Max Cap : 32 GB

5 - Attaching Camera
  Front : 12.0 MP
  Rear : 5.0 MP
  Zoom : 2 xZoom

6 - Attaching Case
  Size : 149.0 x 73.0 x 7.7 mm
  Material : Aluminum
  Guard : WaterProof
  Max Guard : 50.0cm
-----

```

Şekil 9: GlobalFactory Iflas Deluxe

```

-----
Market : Global
Model  : IAmam Iflas
1 - Attaching CPU and RAM
    Frekans : 2.2 GHz
    Capacity : 4 GB
    Core    : 2 cores

2 - Attaching Display
    Size : 4.5 inches
    Bit  : 24 bit

3 - Attaching Battery
    Type   : Lityum-Cobalt
    Frekans : 16 h
    Amper  : 2000 mAh

4 - Attaching Storage
    Type   : MicroSD
    SupportCap : 16 GB
    Max Cap : 32 GB

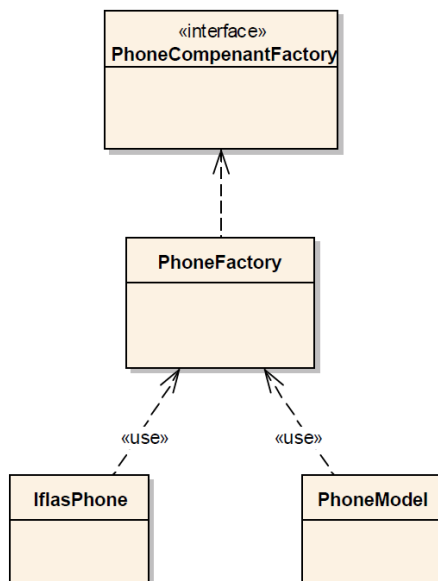
5 - Attaching Camera
    Front : 8.0 MP
    Rear  : 5.0 MP
    Zoom  : 2 xZoom

6 - Attaching Case
    Size   : 143.0 x 69.0 x 7.3 mm
    Material : Plastic
    Guard  : WaterProof
    Max Guard : 50.0cm

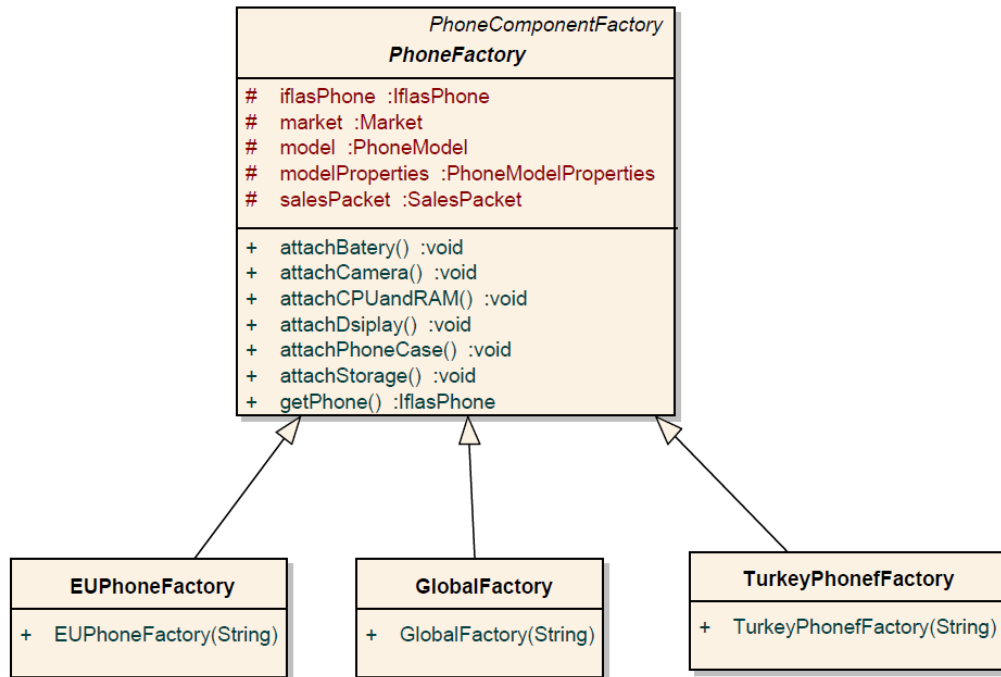
```

Şekil 10: GlobalFactory IAmamIflas

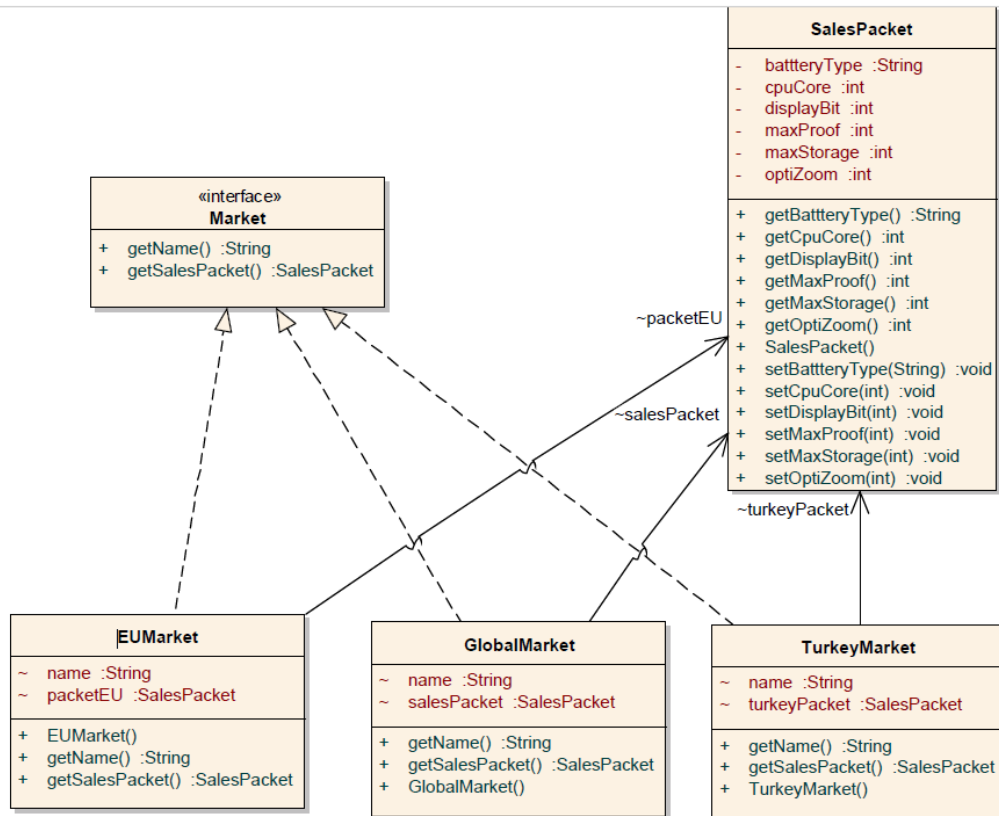
Uml Diagrams:



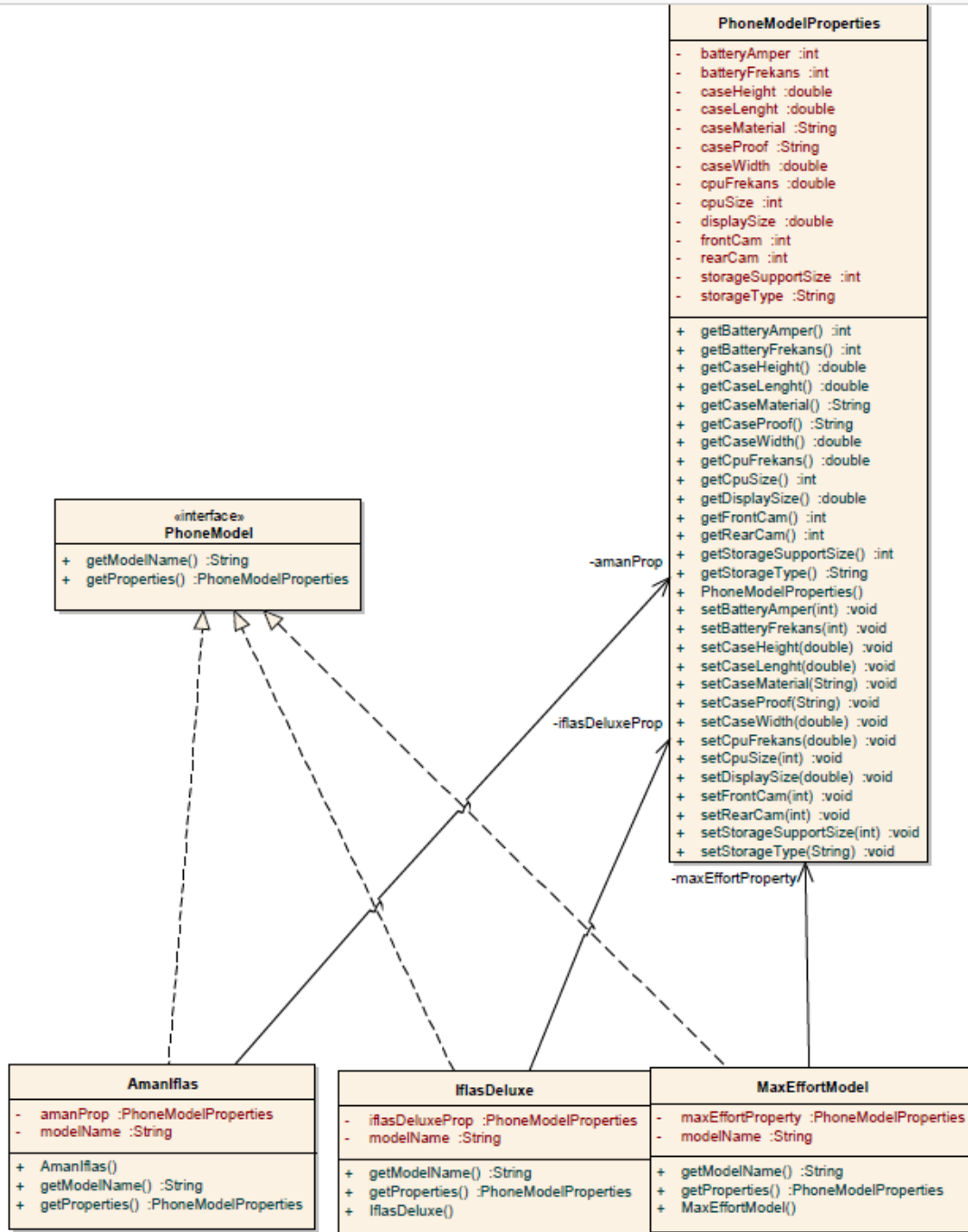
Şekil 11: General Structure



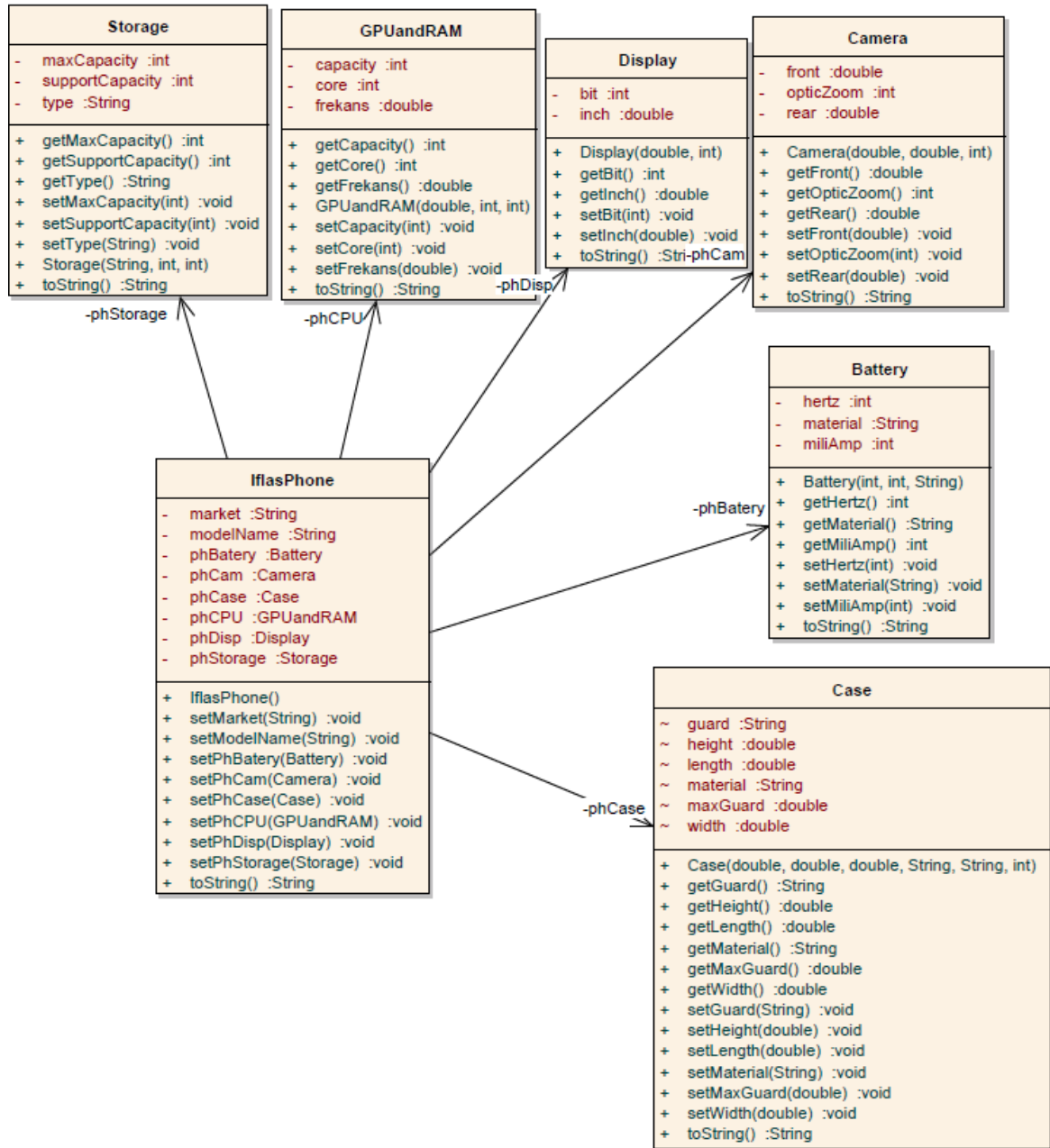
Şekil 12:Abstract Factory UML



Şekil 13: Market UML

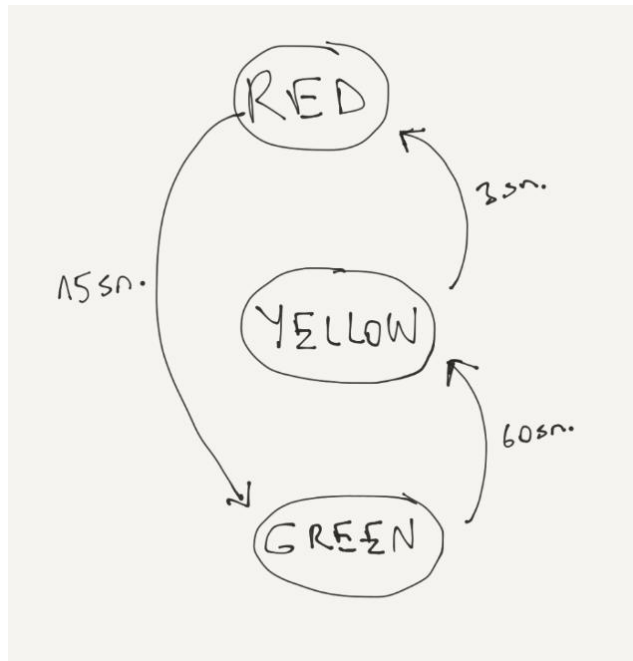


Şekil 14:Model UML



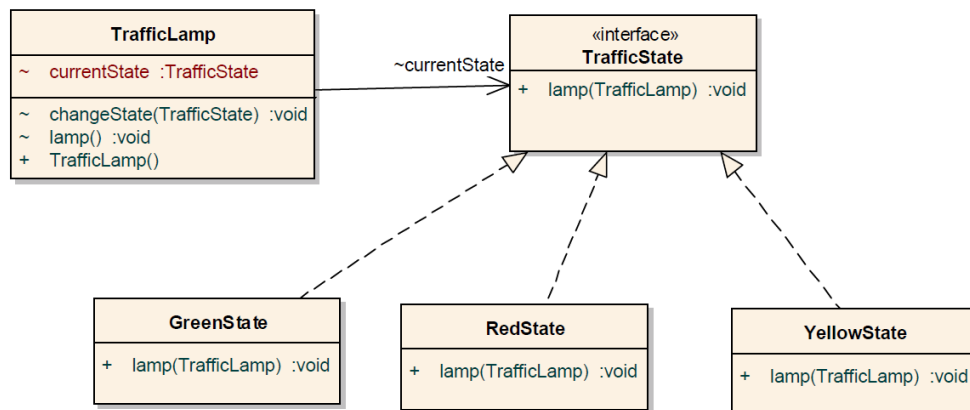
Şekil 15:Phone UML

Answer 2 :



Şekil 16.: State Diagram of TrafficLamp

The UML diagram on the below is for traffic state.



Şekil 17: Class Diagram Traffic State

```

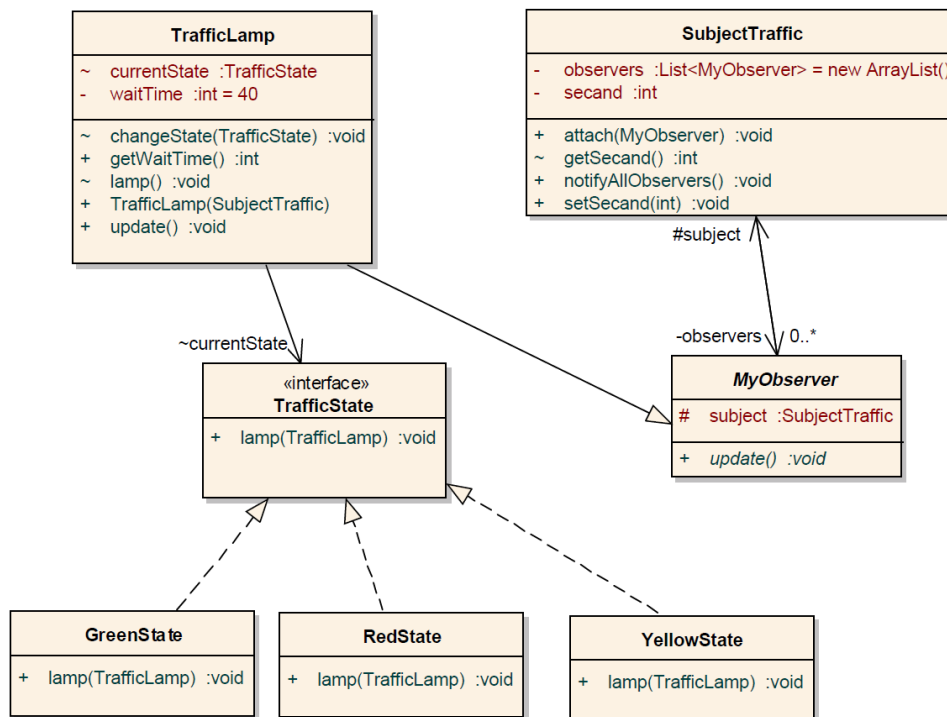
"C:\Program Files\Java\jdk1.8.0_111\bin\java" ...
Red Lamp Light
Waiting 15 seconds
Green Lamp Light
Waiting 60 seconds
Yellow Lamp Light
Waiting 3 seconds
Red Lamp Light
Waiting 15 seconds
Green Lamp Light
Waiting 60 seconds

Process finished with exit code 0

```

Şekil 18: Ekran Görünütüsü Traffic Lamp

The UML diagram on the below for Traffic state of Obeserver pattern



Şekil 19 Traffic State with Observer Pattern

```
"C:\Program Files\Java\jdk1.8.0_111\bin\java" ...  
Red Lamp Light  
Waiting 15 secands  
Green Lamp Light  
Waiting 34 secands  
Yellow Lamp Light  
Waiting 3 secands  
Red Lamp Light  
Waiting 15 secands  
Green Lamp Light  
Waiting 34 secands  
Yellow Lamp Light  
Waiting 3 secands  
Red Lamp Light  
Waiting 15 secands  
Green Lamp Light  
Waiting 60 secands  
Yellow Lamp Light  
Waiting 3 secands  
  
Process finished with exit code 0
```

Şekil 20: Traffic Lamp State with Observer