

Your Name and ID:

**QUESTION-1(30pt) : Write outputs in the given table. All the classes are declared in the same package.**

Çıktıları verilen tabloya yazın. Tüm sınıflar aynı pakette yazılmıştır.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <pre>enum Catagory{     Antibacterials(100,"treat infections"),     Antibiotics(200,"effective against bacteria"),     Analgesics(300,"relieve pain");     private final int id;     private final String desc;     private Catagory(int Id,String drugDesc) {         this.id = Id;         this.desc= drugDesc;     }     int getId(){ return id;}     String getDesc(){ return desc;} } // End Of enum Catagory public class Drug {     private String drugName;     private int id;     private int dose;     static int c;     Catagory catagory;     public Drug(String drugName, int dose, Catagory catagory) {         this.drugName = drugName;         this.dose = dose;         this.catagory = catagory;         this.id = ++c;     }     int getId(){ return id;}     @Override     public String toString(){         return drugName +" is an " + catagory +" drug";     } } // End of Drug class</pre> | <pre>public class Pharmacy {     static int i;     Drug[] drugs;     public Pharmacy(int i){         this.drugs= new Drug[i];     }     public void addDrug(Drug drug) {         this.drugs[i++] = drug;     }     void printDrugs(){         for(Drug d:drugs)             System.out.println(d);     } } // End of Pharmacy class  public class MidtermExam2023 {     public static void main(String[] args) {         Drug d1=new Drug("paracetamol",5, Catagory.Analgesics);         Drug d2=new Drug("augmentin",6, Catagory.Antibiotics);         Drug d3=new Drug("amoxicil",7, Catagory.Antibacterials);         Pharmacy ph=new Pharmacy(2);         d3.catagory=d2.catagory;         ph.addDrug(d1);         ph.addDrug(d2);         System.out.println(d2); //01         System.out.println(ph.i); //02         System.out.println(d3.catagory.getDesc()); //03         System.out.println(d1.getId()); //04         ph.printDrugs(); //05     } }</pre> |
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|      |                                  |      |                                                                       |
|------|----------------------------------|------|-----------------------------------------------------------------------|
| (01) | augmentin is an Antibiotics drug | (04) | 1                                                                     |
| (02) | 2                                | (05) | paracetamol is an Analgesics drug<br>augmentin is an Antibiotics drug |
| (03) | effective against bacteria       |      |                                                                       |

**QUESTION-2 (40pt) : Write necessary lines of code to perform followings.**

a) In Person class there is a repeated code, you should fix it.

```
class Person {
    String name;
    int age;
    public Person(int age) {
        this.name = "not reported";
        this.age = age;
    }

    public Person(String name, int age) {
        this.name = name;
        this.age = age;
    }
}
```

- Person sınıfında tekrarlanan kodlar var, bunu düzeltmelisiniz.
- Verilen Person sınıfına kapsülleme (veri gizleme) uygulayın ve gerekli tüm yöntemleri ekleyin. Bu yeni sınıfın adı EncapsulatedPerson olmalıdır.
- EncapsulatedPerson sınıfı, herhangi bir geçersiz yaş ayarlanırsa (yaş 20 ile 60 arasında olmalıdır) bir istisna (hata mesajı ile) fırlatmalıdır.
- MainClass içinde, EncapsulatedPerson'dan bir örnek/nesne oluşturun, bunun için özellikleri (attributes) ayarlayın, herhangi bir istisnayı ele alın ve istisna mesajını ekrana yazdırın.

- b) Apply encapsulation (data hiding) to the given Person class and add all the needed methods. The name of this new class should be EncapsulatedPerson.
- c) Encapsulated Person class should throw an exception (with an error message) if any illegal age is set (age should be between 20 and 60).
- d) Inside the MainClass, create an instance/object from Encapsulated Person, set attributes for it, handle any exception, and print the exception message on the screen.

### **QUESTION 3[30pt]:**

**Show how to call the methods of the Restaurant class and assign them to the variables given above in the Main method.**

**Remark:** Do not write the Restaurant and Person classes and their methods. Assume that they have been written.

```
Restaurant restaurant;  
String restName;  
String restAddress;  
String menu;  
Person restaurantOwner;  
String ownerName;  
String[] salads;
```

Altta Restaurant sınıfına ait verilen metotları Main metodda nasıl çağırdığınızı ve bunları üstte verilen değişkenlere nasıl atadığınızı gösterin.

**Not:** Restaurant ve Person sınıflarını ve içindeki metodları da yazmayın. Yazıldığını varsayınız.

**Do not provide an implementation for these methods of Restaurant Class!!!**

- a. public Restaurant(String name)
- b. public void setAddress(String address)
- c. public void setOwner (Person owner)
- d. public String[] getSaladList()
- e. public String getMenu()

Write your answer for q3 here | 3. Sorunun cevabını buraya yazınız.

```
String restName = "my restaurant"; Restaurant restaurant = new Restaurant(restName);  
String restAddress = "some location"; restaurant.setAddress(restAddress);  
String menu = restaurant.getMenu();  
String ownerName= "John Wick"; Person restaurantOwner = new Person(ownerName);  
restaurant.setOwner(restaurantOwner);  
String[] salads = restaurant.getSaladList();
```

ANSWER FOR Q2

```
class Person {

    String name;
    int age;

    public Person(int age) {
        this("", age);
    }

    public Person(String name, int age) {
        this.name = name;
        this.age = age;
    }
}

class EncapsulatedPerson {
    private String name;
    private int age;

    public EncapsulatedPerson(int age) {
        this("", age);
    }

    public EncapsulatedPerson(String name, int age) {
        this.setName(name);
        this.setAge(age);
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public int getAge() {
        return age;
    }

    public void setAge(int age) {
        if (age < 20 || age > 60) throw new IllegalArgumentException("invalid age!");
        this.age = age;
    }
}

public class Main {
    public static void main(String[] args) {

        try {
            Person person = new Person("jack", 30);
        }
        catch (Exception e){
            System.out.println(e.getMessage());
        }

    }
}
```