

Department of Information Systems and Technologies  
**CTIS221 – Object Oriented Programming**  
 Spring 2024 - 2025  
**Lab Guide 7 - Week 6 - 1**

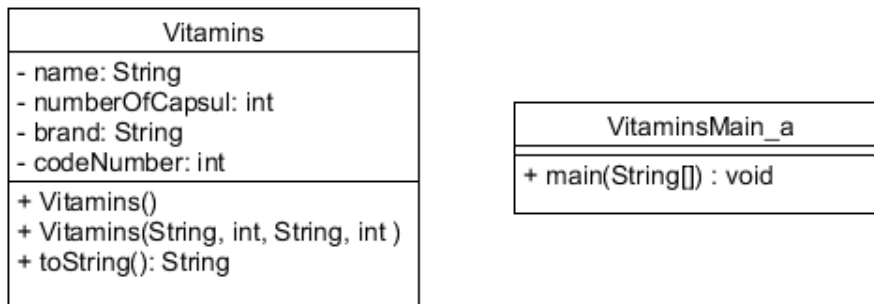
**OBJECTIVE:** Classes, Constructors, Visibility Modifiers, toString(), getInput()

**Instructor** : Leyla SEZER

**Assistant** : Efe Mert ŞAHİNKOÇ, Engin Zafer KIRAÇBEDEL

1.

a) Create the following **Vitamins** class structure with the given data members and write the **no-arg constructor**, **non-default constructor** and a **toString()** method;



Create another class as **VitaminsMain\_a**; in main method, create **three** vitamin objects and display the contents of the objects by using the **toString()** method.

```
Vitamins vitamins1 = new Vitamins();
Vitamins vitamins2 = new Vitamins("B12", 65, "Eczacibasi", 1236545);
Vitamins vitamins3 = new Vitamins("Folic Acid", 52, "Quali-Blends", 3566455);

System.out.println(vitamins1.toString());
System.out.println(vitamins2);
System.out.println(vitamins3);
```

**Output:**

Vitamin Info:

Name= No Name  
 NumOfCapsul= 0  
 Brand= No Brand  
 CodeNumber= 0

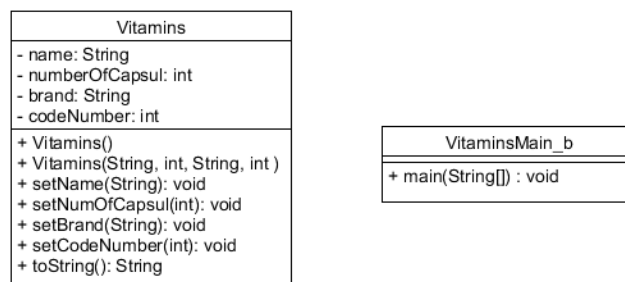
Vitamin Info:

Name= B12  
 NumOfCapsul= 65  
 Brand= Eczacibasi  
 CodeNumber= 1236545

Vitamin Info:

Name= Folic Acid  
 NumOfCapsul= 52  
 Brand= Quali-Blends  
 CodeNumber= 3566455

b) Create a new project, then modify the **Vitamins** and **VitaminsMain\_a** classes as in the below UML class diagram. Then, create a **Vitamins** object by invoking its **no-arg** constructor, get and set the values of the object from the user. Finally, display the object content on the screen by invoking its **toString()** method.

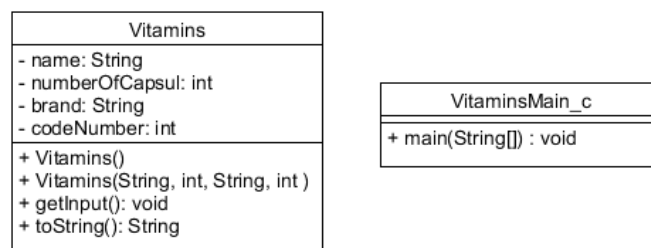


**Output:**

```
Enter Name: B12
Enter Brand Name: Eczacibasi
Enter the Number of Capsule: 65
Enter the Code number: 1236545
```

```
Vitamin Info:
Name= B12
NumOfCapsul= 65
Brand= Eczacibasi
CodeNumber= 1236545
```

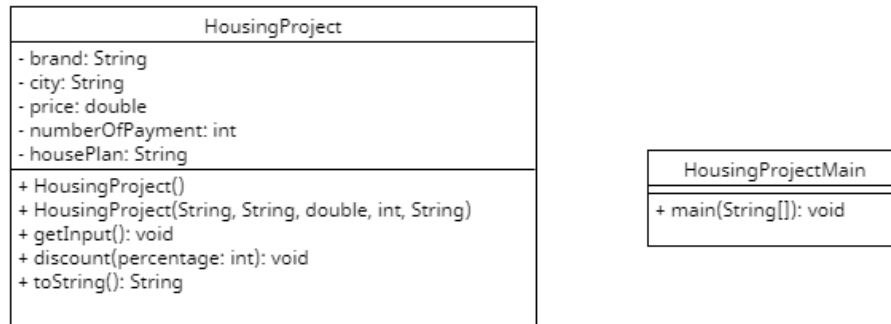
c) Create a new Project then modify the **Vitamins** class by writing a member method **getInput()**, that gets the values of data members of the object from the user. Invoke this method in the main method of **VitaminsMain\_c** class.

**Output:**

```
Enter Name: B12
Enter Brand Name: Eczacibasi
Enter the Number of Capsules: 65
Enter the Code Number: 1236545
```

```
Vitamin Info:
Name= B12
NumOfCapsul= 65
Brand= Eczacibasi
CodeNumber= 1236545
```

2. Create the following **HousingProject** class with the given data members, constructors and member methods according to the UML class diagram below:



- Write a member method **getInput()** that gets the data member values from the user.
- Write a member method **discount()** that takes the percentage amount for discount as a parameter, then makes a discount on the price.

Create another class as **HousingProjectMain**, in main method;

- The program gets several number of Housing Project objects from the user until '**YES**' is not entered.
- Take the discount percentage from the user for each object. Then, by invoking the **discount()** method, apply the discount for each object's price.
- Finally, display the content of each object.

**Output:**

```
Do you want to add Housing Project (Yes/No):
Yes
```

```
Enter the brand: Atabilge
Enter the city: Ankara
Enter the price: 20000000
Enter number of payments: 60
Enter the house plan: 4+1
Enter the discount percentage: 10
```

```
Price after discount:
```

```
Housing Project
Name : Atabilge
City: Ankara
Price: 1.8E7
Number of Payments: 60
House Plan: 4+1
```

```
Do you want to add Housing Project (Yes/No):
yes
```

```
Enter the brand: Toki Ankara
Enter the city: Ankara
Enter the price: 5500000
Enter number of payments: 48
Enter the house plan: 3+1
Enter the discount percentage: 5
```

```
Price after discount:
```

```
Housing Project
Name : Toki Ankara
City: Ankara
Price: 5225000.0
Number of Payments: 48
House Plan: 3+1
```

```
Do you want to add Housing Project (Yes/No):
no
```

```
Program terminated
```