NAME	:	FARICHA AULIA
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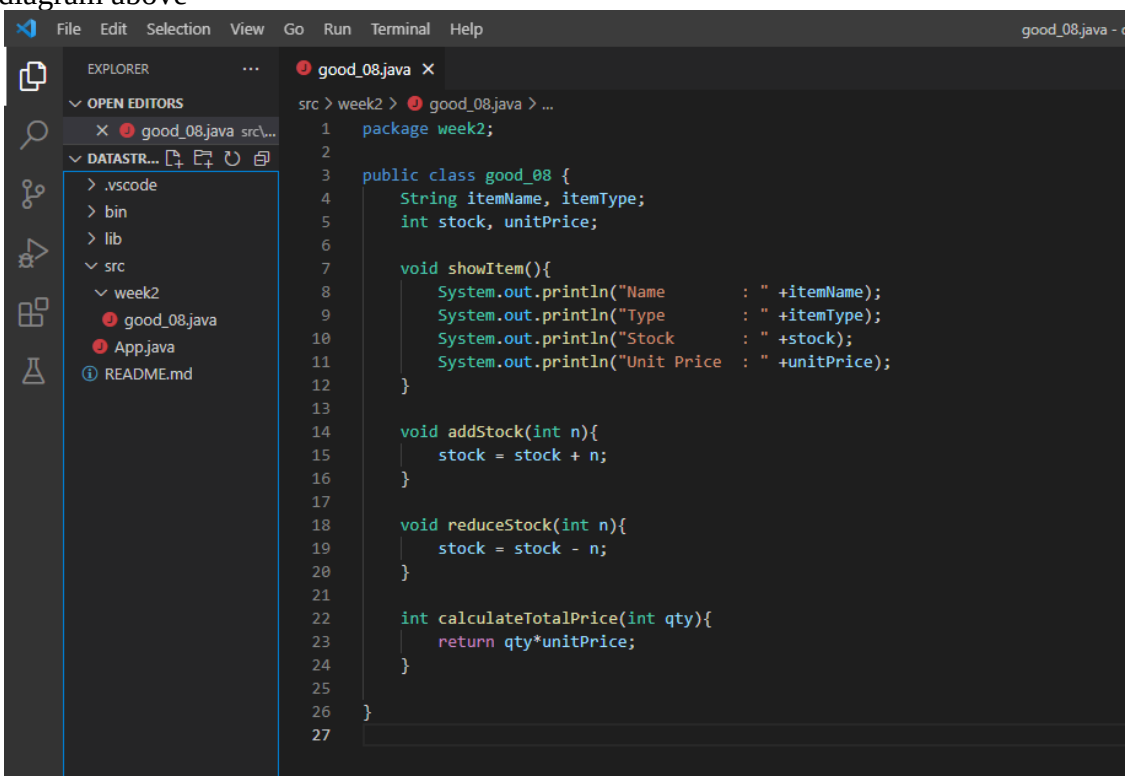
ABSENT NUM	:	08
CLAS	:	1I - IT
TOPIC	:	JOBSHEETS 2

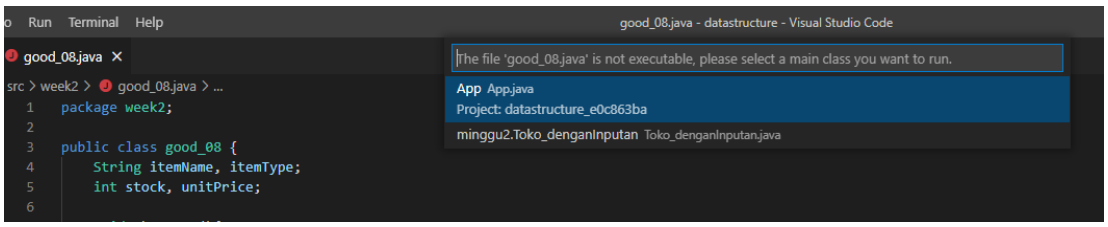
2.2.1 Lab Unit 1

1. Create a new Project, with the name DataStructure. Create a package with the name week2, create a new class with the name Goods_absenNumber
2. Complete the Goods_absenNumber class with the attributes and methods described in the class diagram above



3. Try running the program code (Run) for the Goods_absenNumber class. Can it?
Answer : It can't

2.2.2 Verification of lab unit-1



2.2.3 Question

1. Explain 2 characteristics of class/object!
Answer :
   - Objects in OOP consist of data(attributes) and functions(methods)
   - Objects have a Constructor Creation > Object Build > Object Usage cycle.
2. What keywords are used to declare a class?
Answer : In Java, to declare a class use the keyword "class" followed by the class name
3. Pay attention to the Goods_absenNumber class in the Lab unit 1 above, how many attributes does this class have? Mention! And on what line is the attribute declaration done?
Answer : String itemName, itemType and int stock, unitPrice on line 4 and 5
4. How many methods does Goods_absenNumber class have? Mention! And on what line is the method declaration done?

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Answer : 3 method. Start from line 14 until line 24

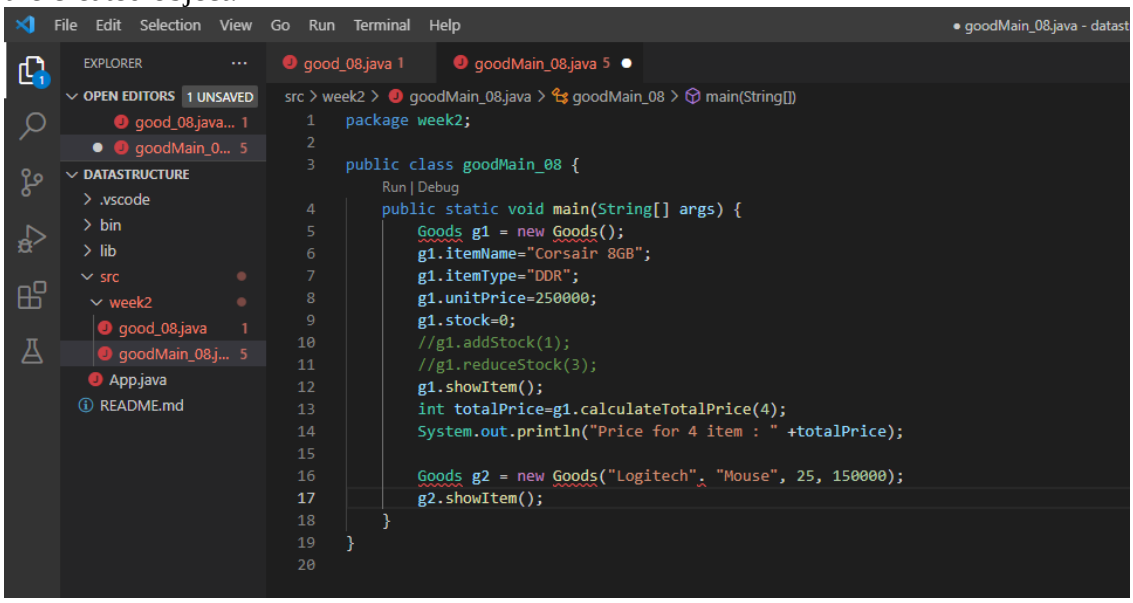
5. Pay attention to the reduceStock() method in the Item class, modify the contents of the method so that the reduction process is only carried out if the stock is still there (still greater than 0). Modify your code!
   Answer :

```
17
18      void reduceStock(int n){
19          stock = n;
20          n >= 0;
21      }
```

6. In your opinion, why is the addStok() method created by having 1 parameter in the form of an int number?
   Answer : Because in general stock items are integers and not fractions, an integer is used which has a storage address and capacity that is suitable for the condition
7. In your opinion, why does the calculatedTotalPrice() method have a data type of int?
   Answer : In addition to integers with integer numbers, we can perform mathematical operations
8. In your opinion, why does the addStock() method have a data type of void?
   Answer : Because it is needed in a function that does not return a value or fills the function argument with an empty value

2.3.1 Lab-Unit 2

1. In the week2 package, create a new class with the name GoodMain_absenNumber. And in the GoodMain_absenNumber class, create a main() method.
2. In the main()method, do the instantiation, and then continue to access the attributes and methods of the created object.



3. Run GoodMain_absenNumber class and observe the results!
   Answer : It can’t, must create a constructor by writing the constructor method name the same as the class name.

2.3.2 Verification

Match the results of your compiled program code with the following image

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```
Name  : Corsair 8GB
Type  : DDR
Stock : 0
Unit Price       : 250000
Price for 4 item : 1000000
Name  : Logitech
Type  : Mouse
Stock : 25
Unit Price       : 150000
```

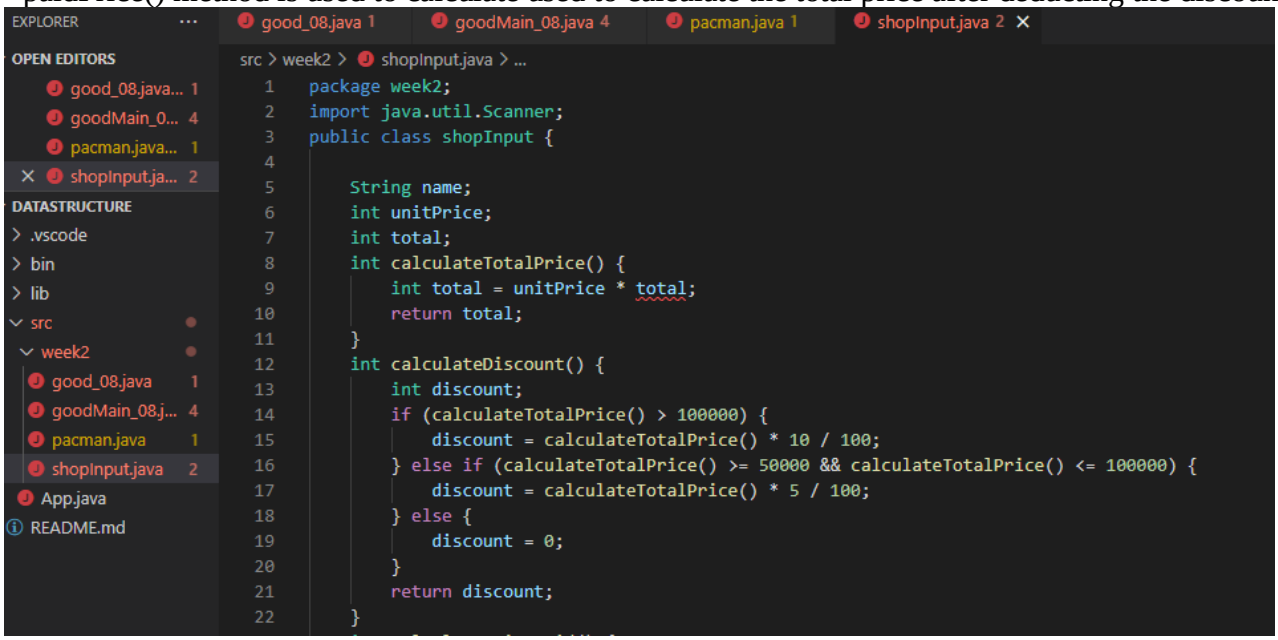
2.4.3 Question

1. Look at Goods_absenNumber class in the lab unit 3 section 2.4.1, on which line the parameterized constructor declaration is done?
   Answer : Line 6-9
2. Look at GoodMain_absenNumber class in the lab unit 3 section 2.4.1, what exactly does the following line of program do?
   Answer : The method to be executed when the object is created.
3. Create an object with the name g3 by using parameterized constructor from Goods_absenNumber.

```
good_08 g3 = new good_08("Asus", "Keyboard", 13, 350000);
g3.showItem();
```

2.5 Exercise

1. Create a program based on the following class diagram!
   - calculateTotalPrice() Method is used to calculate the total price which is the multiplication of Unit prices with the quantity of items purchased
   - calculateDiscount() method is used to calculate discount using the following rule : • If the total price> 100000, get a 10% discount • if the total price starts from 50000 to 100000, get a discount of 5% • If less than 50000, then no discount
   - paidPrice() method is used to calculate used to calculate the total price after deducting the discount



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```
    int calculatePricePaid() {
        return calculateTotalPrice() - calculateDiscount();
    }
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter item name  : ");
        String name = sc.nextLine();
        System.out.print("Enter unit price : ");
        int price = sc.nextInt();
        System.out.print("Enter total      : ");
        int total = sc.nextInt();
        shopInput y1 = new shopInput();
        y1.name = name ;
        y1.unitPrice = price;
        y1.total = total;

        System.out.println("----------------------------------------");
        System.out.println("Item Name        : " + y1.name);
        System.out.println("Total            : " + y1.total);
        System.out.println("Unit Price       : Rp." + y1.unitPrice);
        System.out.println("Discount         : Rp." + y1.calculateDiscount());
        System.out.println("Total pay        : Rp." + y1.calculatePricePaid());
    }
}
```

OUTLINE
JAVA PROJECTS
pacman 1
shopinp... 2
App
JRE System Libr...
java.base C:/Pr...
{} com.sun.cryp...

2. Create a program based on the following class diagram!
   - The x attribute is used to store the x coordinate position (horizontally) from pacman, while the y attribute is for the y coordinate position (vertical)
   - The width attribute is used to store the width of the game area, while the height is to store the length of the area
   - The moveLeft () method is used to change pacman position to the left (x coordinates will decrease by 1), while moveRight () to move to the right (x coordinates will increase by 1). Note that the x coordinate must not be smaller than 0 or greater than the width value
   - The moveUp () method is used to change the pacman position upward (y coordinates will decrease by 1), while moveDown () to move down (y coordinates will increase by 1). (Note: the y coordinate cannot be smaller than 0 or greater than the height value)

good_08.java 1 | goodMain_08.java 4 | pacman.java 1 | shopInput.java 2

src > week2 > pacman.java > pacman > main(String[])

```
package week2;
import java.util.Scanner;
public class pacman {

    int x, y, width, height;

    void moveLeft() {
        --x;
    }

    void moveRight() {
        ++x;
    }

    void moveUp() {
        --y;
    }

    void moveDown() {
        ++y;
    }
```

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```
22      void printPosition() {
23          System.out.println("current possition: x " + x + " y " + y);
24          for (int i = 0; i < height; i++) {
25              for (int j = 0; j < width; j++) {
26                  if (i == 0 || i == height - 1) {
27                      System.out.print(": ");
28                  } else if (j == 0 || j == width - 1) {
29                      System.out.print(": ");
30                  } else {
31                      if (!(i == y && j == x)) {
32                          System.out.print("  ");
33                      } else {
34                          System.out.print("v ");
35                      }
36
37                  }
38              }         System.out.println();
39          }
40      }
41
        Run | Debug
42      public static void main(String[] args) {
43
44          Scanner userInput = new Scanner(System.in);
45          boolean loop;
46          pacman pc = new pacman();
47          System.out.println("=============");
48          do {
49              System.out.print("Set width : ");
50              int width = userInput.nextInt();
51              System.out.print("Set height: ");
52              int height = userInput.nextInt();
53              if (width < 5 || height < 5) {
54                  System.out.println("width dan height can't be less than 5");
55                  loop = true;
56              } else {
57                  loop = false;
58                  pc.width = width;
59                  pc.height = height;
60                  pc.x = 1;
61                  pc.y = 1;
62              }
63          } while (loop);
```

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```
64
65          do {
66              System.out.println("==============");
67              System.out.print("w to move up\n"
68                      + "a to move left\n"
69                      + "s to move down\n"
70                      + "d to move right\n"
71                      + "p to print current possition\n"
72                      + "=> ");
73              char play = userInput.next().charAt(0);
74              switch (play) {
75                  case 'w':
76                      pc.moveUp();
77                      break;
78                  case 'a':
79                      pc.moveLeft();
80                      break;
81                  case 's':
82                      pc.moveDown();
83                      break;
84                  case 'd':
85                      pc.moveRight();
86                      break;
87                  case 'p':
88                      pc.printPosition();
89                      break;
90                  default:
91                      System.out.println("wrong input");
92                      break;
93              }
94          } while (true);
95      }
96  }
```