

Question 1: Create a class FRUIT which has data members colour, taste and price. Also create a method display() which will print values of FRUIT object. Create three objects of FRUIT class and call their display() methods.

Solution:

Fruit.java

```
1  package com.fruit;
2  public class Fruit {
3      private String color;
4      private String taste;
5      private double price;
6
7      public String getColor() { return color; }
8      public void setColor(String color) { this.color = color; }
9      public String getTaste() { return taste; }
10     public void setTaste(String taste) { this.taste = taste; }
11     public double getPrice() { return price; }
12     public void setPrice(double price) { this.price = price; }
13
14     public void display(){
15         System.out.println("Color: " + color);
16         System.out.println("Taste: " + taste);
17         System.out.println("Price: " + price + "\n");
18     }
19 }
```

Main.java

```
1  package com.fruit;
2  public class Main {
3      Run main | Debug main | Run | Debug
4      public static void main(String[] args) {
5          Fruit mango = new Fruit();
6          mango.setColor(color:"Yellow");
7          mango.setTaste(taste:"Sweet");
8          mango.setPrice(price:50.0);
9          Fruit apple = new Fruit();
10         apple.setColor(color:"Red");
11         apple.setTaste(taste:"Sweet");
12         apple.setPrice(price:100.0);
13         Fruit grapes = new Fruit();
14         grapes.setColor(color:"Green");
15         grapes.setTaste(taste:"Sour");
16         grapes.setPrice(price:60.0);
17         System.out.println(x:"Mango Details:");
18         mango.display();
19         System.out.println(x:"Apple Details:");
20         apple.display();
21         System.out.println(x:"Grapes Details:");
22         grapes.display();
23     }
```

Output:

```

PS D:\Uni Material\LAB\sem 3\Week 8\Que1\src\main\java\com\fruit> javac Main.java Fruit.java
PS D:\Uni Material\LAB\sem 3\Week 8\Que1\src\main\java\com\fruit> java Main.java
Mango Details:
Color: Yellow
Taste: Sweet
Price: 50.0

Apple Details:
Color: Red
Taste: Sweet
Price: 100.0

Grapes Details:
Color: Green
Taste: Sour
Price: 60.0

```

Question 2: Create a class FRUIT which has data members color, taste and price. It has a method setDetails() which will set the values of color, taste and price. Also create a method display() which will print values of FRUIT object.

Solution:

Fruit.java

```

1  package com.fruitseller;
2  public class Fruit {
3      private String color;
4      private String taste;
5      private double price;
6
7      public void setDetails(String color, String taste, double price) {
8          this.color = color;
9          this.taste = taste;
10         this.price = price;
11     }
12     public void display(){
13         System.out.println("Color: " + color);
14         System.out.println("Taste: " + taste);
15         System.out.println("Price: " + price + "\n");
16     }
17 }

```

Main.java

```
1  package com.fruitseller;
2  public class Main {
3      public static void main(String[] args) {
4          Fruit mango = new Fruit();
5          mango.setDetails(color:"Yellow", taste:"Sweet", price:50.0);
6          Fruit apple = new Fruit();
7          apple.setDetails(color:"Red", taste:"Sweet", price:100.0);
8          Fruit grapes = new Fruit();
9          grapes.setDetails(color:"Green", taste:"Sour", price:60.0);
10         System.out.println(x:"Mango Details:");
11         mango.display();
12         System.out.println(x:"Apple Details:");
13         apple.display();
14         System.out.println(x:"Grapes Details:");
15         grapes.display();
16     }
17 }
```

Output:

PS D:\Uni Material\LAB\sem 3\Week 8\Que2\src\main\java\com\fruitseller> javac Fruit.java Main.java

PS D:\Uni Material\LAB\sem 3\Week 8\Que2\src\main\java\com\fruitseller> java Main.java

Mango Details:

Color: Yellow

Taste: Sweet

Price: 50.0

Apple Details:

Color: Red

Taste: Sweet

Price: 100.0

Grapes Details:

Color: Green

Taste: Sour

Price: 60.0

Question 3: In previous question, set the values of using color, taste and price using Constructor.

Solution:

Fruit.java

```

1  package com.fruit;
2  public class Fruit {
3      private String color;
4      private String taste;
5      private double price;
6      Fruit (String color, String taste, double price) {
7          this.color = color;
8          this.taste = taste;
9          this.price = price;
10     }
11     public void display(){
12         System.out.println("Color: " + color);
13         System.out.println("Taste: " + taste);
14         System.out.println("Price: " + price + "\n");
15     }
16 }

```

Main.java

```

1  package com.fruit;
2  public class Main {
3      Run main | Debug main | Run | Debug
4      public static void main(String[] args) {
5          Fruit mango = new Fruit(color:"Yellow", taste:"Sweet", price:50.0);
6          Fruit apple = new Fruit(color:"Red", taste:"Sweet", price:100.0);
7          Fruit grapes = new Fruit(color:"Green", taste:"Sour", price:60.0);
8          System.out.println(x:"Mango Details:");
9          mango.display();
10         System.out.println(x:"Apple Details:");
11         apple.display();
12         System.out.println(x:"Grapes Details:");
13         grapes.display();
14     }
15 }

```

Output:

```

PS D:\Uni Material\LAB\sem 3\Week 8\Que3\src\main\java\com\fruit> javac Main.java Fruit.java
PS D:\Uni Material\LAB\sem 3\Week 8\Que3\src\main\java\com\fruit> java Main.java
Mango Details:
Color: Yellow
Taste: Sweet
Price: 50.0

Apple Details:
Color: Red
Taste: Sweet
Price: 100.0

Grapes Details:
Color: Green
Taste: Sour
Price: 60.0

```

Question 4: Add one-argument constructor and two-argument constructor in addition to default constructor in FRUIT class.

Solution:

Fruit.java

```

1  package com.fruit;
2  public class Fruit {
3      private String color;
4      private String taste;
5      private double price;
6      Fruit (String color) { this.color = color; }
7      Fruit (String color, String taste) {
8          this.color = color;
9          this.taste = taste;
10     }
11     Fruit (String color, String taste, double price) {
12         this.color = color;
13         this.taste = taste;
14         this.price = price;
15     }
16     public String getColor() { return color; }
17     public void setColor(String color) { this.color = color; }
18     public String getTaste() { return taste; }
19     public void setTaste(String taste) { this.taste = taste; }
20     public double getPrice() { return price; }
21     public void setPrice(double price) { this.price = price; }
22     public void display(){
23         System.out.println("Color: " + color);
24         System.out.println("Taste: " + taste);
25         System.out.println("Price: " + price + "\n");
26     }
27 }

```

Main.java

```

1  package com.fruit;
2  public class Main {
3      public static void main(String[] args) {
4          Fruit mango = new Fruit(color:"Yellow", taste:"Sweet", price:50.0);
5          Fruit apple = new Fruit(color:"Red", taste:"Sweet");
6          apple.setPrice(price:102);
7          Fruit grapes = new Fruit(color:"Green");
8          grapes.setTaste(taste:"Sour");
9          grapes.setPrice(price:65);
10         System.out.println(x:"Mango Details:");
11         mango.display();
12         System.out.println(x:"Apple Details:");
13         apple.display();
14         System.out.println(x:"Grapes Details:");
15         grapes.display();
16     }
17 }

```

Output:

```

PS D:\Uni Material\LAB\sem 3\Week 8\Que4\src\main\java\com\fruit> javac Fruit.java Main.java
PS D:\Uni Material\LAB\sem 3\Week 8\Que4\src\main\java\com\fruit> java Main.java
Mango Details:
Color: Yellow
Taste: Sweet
Price: 50.0

Apple Details:
Color: Red
Taste: Sweet
Price: 102.0

Grapes Details:
Color: Green
Taste: Sour
Price: 65.0

```

Question 5: Use the concept of constructor-chaining in the previous question using this().

Solution:

Fruit.java

```

1  package com.fruit;
2  public class Fruit {
3
4      private String color;
5      private String taste;
6      private double price;
7
8      Fruit (String color) { this.color = color; }
9      Fruit (String color, String taste) {
10         this(color);
11         this.taste = taste;
12     }
13     Fruit (String color, String taste, double price) {
14         this(color, taste);
15         this.price = price;
16     }
17     public String getColor() { return color; }
18     public void setColor(String color) { this.color = color; }
19
20     public String getTaste() { return taste; }
21     public void setTaste(String taste) { this.taste = taste; }
22
23     public double getPrice() { return price; }
24     public void setPrice(double price) { this.price = price; }
25
26     public void display(){
27         System.out.println("Color: " + color);
28         System.out.println("Taste: " + taste);
29         System.out.println("Price: " + price + "\n");
30     }
31 }

```

```
1 package com.fruit;
2
3 public class Main {
4     Run main | Debug main | Run | Debug
5     public static void main(String[] args) {
6         Fruit mango = new Fruit(color:"Yellow", taste:"Sweet", price:50.0);
7         Fruit apple = new Fruit(color:"Red", taste:"Sweet");
8         apple.setPrice(price:102);
9         Fruit grapes = new Fruit(color:"Green");
10        grapes.setTaste(taste:"Sour");
11        grapes.setPrice(price:65);
12
13        System.out.println(x:"Mango Details:");
14        mango.display();
15
16        System.out.println(x:"Apple Details:");
17        apple.display();
18
19        System.out.println(x:"Grapes Details:");
20        grapes.display();
21    }
22 }
```

Output:

PS D:\Uni Material\LAB\sem 3\Week 8\Que5\src\main\java\com\fruit> javac Main.java Fruit.java

PS D:\Uni Material\LAB\sem 3\Week 8\Que5\src\main\java\com\fruit> java Main.java

Mango Details:

Color: Yellow

Taste: Sweet

Price: 50.0

Apple Details:

Color: Red

Taste: Sweet

Price: 102.0

Grapes Details:

Color: Green

Taste: Sour

Price: 65.0

Question 6: Create a class CAR with the following details:

Data members: model, color, price.

Member methods:

- setDetails() – to set values of all data members using setters.
- getDetails() – to get values of all data members using getters.
- display() – to print all details of the car.

Requirements:

- Implement default constructor to initialize default values.
- Implement a parameterized constructor (with one argument) to set only model.
- Implement another parameterized constructor (with two arguments) to set model and color.
- Use constructor chaining to reduce code redundancy.
- Create three objects of CAR class using:
 - Default constructor
 - One-argument constructor
 - Two-argument constructor
- Set price for each object using the setDetails() method.
- Call the display() method for each object.

Solution:

Main.java

```
1  package com.car;
2
3  public class Main {
4      public static void main(String[] args) {
5
6          CAR car1 = new CAR();
7          car1.setPrice(500000);
8          car1.display();
9
10         CAR car2 = new CAR("Tesla Model 3");
11         car2.setPrice(15000000);
12         car2.display();
13
14         CAR car3 = new CAR("BMW X5", "Black");
15         car3.setPrice(10000000);
16         car3.display();
17     }
18 }
```



```
1  package com.car;
2  public class CAR {
3      private String model;
4      private String color;
5      private double price;
6      public CAR() {
7          this(model:"Unknown", color:"White", price:0.0);
8      }
9      public CAR(String model) {
10         this(model, color:"White", price:0.0);
11     }
12     public CAR(String model, String color) {
13         this(model, color, price:0.0);
14     }
15     public CAR(String model, String color, double price) {
16         this.model = model;
17         this.color = color;
18         this.price = price;
19     }
20     public void setModel(String model) { this.model = model; }
21     public void setColor(String color) { this.color = color; }
22     public void setPrice(double price) { this.price = price; }
23     public String getModel() { return model; }
24     public String getColor() { return color; }
25     public double getPrice() { return price; }
26     public void setDetails(String model, String color, double price) {
27         this.model = model;
28         this.color = color;
29         this.price = price;
30     }
31     public String getDetails() {
32         return "Model: " + model + ", Color: " + color + ", Price: " + price;
33     }
34     public void display() {
35         System.out.println("Model: " + model);
36         System.out.println("Color: " + color);
37         System.out.println("Price: " + price);
38         System.out.println();
39     }
40 }
```

Output:

PS D:\Uni Material\LAB\sem 3\Week 8\Ques6\src\main\java\com\car> javac CAR.java Main.java

PS D:\Uni Material\LAB\sem 3\Week 8\Ques6\src\main\java\com\car> java Main.java

Model: Unknown

Color: White

Price: 500000.0

Model: Tesla Model 3

Color: White

Price: 1.5E7

Model: BMW X5

Color: Black

Price: 1.0E7

