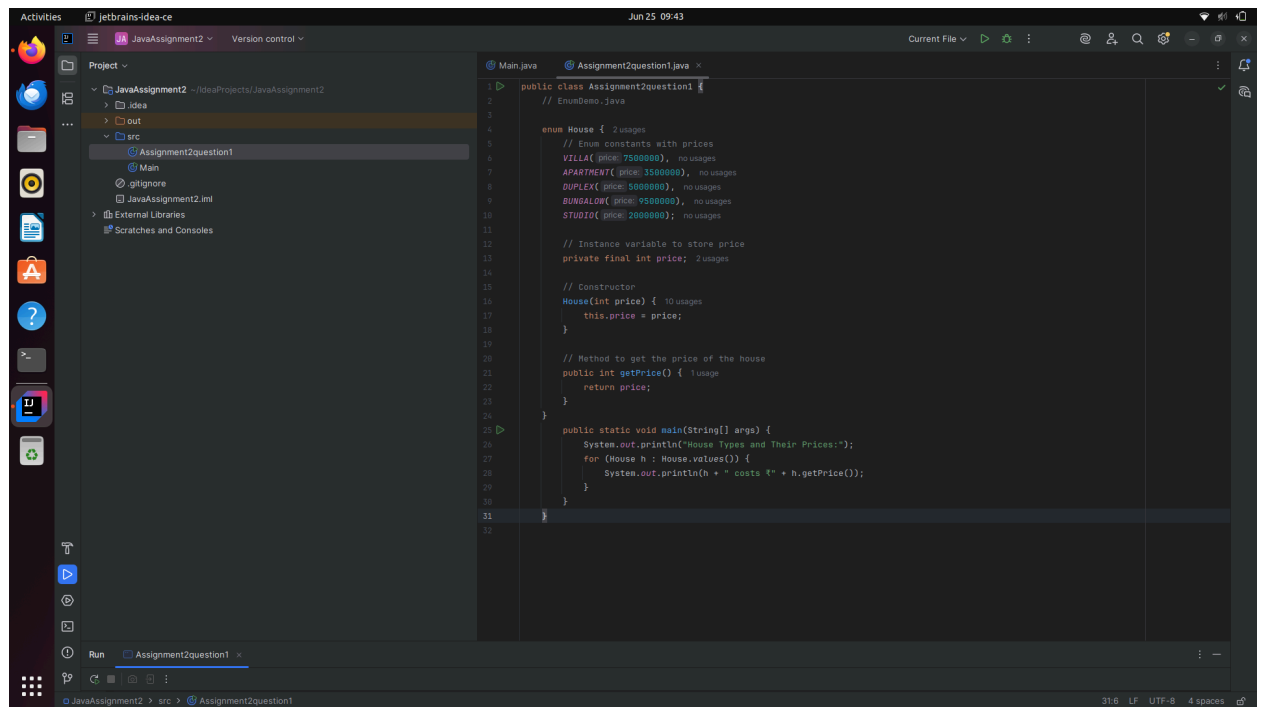
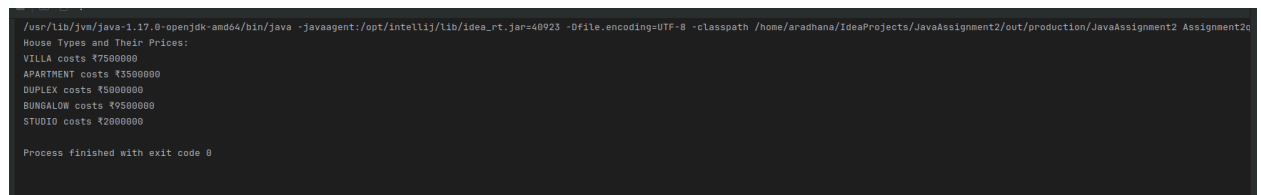


1. Write a program to display values of enums using a constructor & getPrice() method (Example display house & their prices)



```
1 public class Assignment2Question1 {
2     // EnumDemo.java
3
4     enum House {
5         // Enum constants with prices
6         VILLA( price: 7500000), no usages
7         APARTMENT( price: 3500000), no usages
8         DUPLEX( price: 5000000), no usages
9         BUNGALOW( price: 9500000), no usages
10        STUDIO( price: 2000000), no usages
11
12        // Instance variable to store price
13        private final int price;
14
15        // Constructor
16        House(int price) {
17            this.price = price;
18        }
19
20        // Method to get the price of the house
21        public int getPrice() {
22            return price;
23        }
24    }
25
26    public static void main(String[] args) {
27        System.out.println("House Types and Their Prices:");
28        for (House h : House.values()) {
29            System.out.println(h + " costs ₹" + h.getPrice());
30        }
31    }
32 }
```

## Output



```
/usr/lib/jvm/java-1.17.0-openjdk-amd64/bin/java -javaagent:/opt/intellij/lib/idea_rt.jar-40923 -Dfile.encoding=UTF-8 -classpath /home/aradhana/IdeaProjects/JavaAssignment2/out/production/JavaAssignment2 Assignment2Q
House Types and Their Prices:
VILLA costs ₹7500000
APARTMENT costs ₹3500000
DUPLEX costs ₹5000000
BUNGALOW costs ₹9500000
STUDIO costs ₹2000000

Process finished with exit code 0
```

2. Create a User class with fields: firstname, lastname, age, phonenumber. Write a program which accepts values of user fields from commandline, create object and append that to a text file. After every user creation the program should prompt: "Do you want to continue creating users? (Type QUIT to exit)" and keep on accepting values and writing to file until user quits.

```
Project - JavaAssignment2 - ~/IdeaProjects/JavaAssignment2
> .idea
> .out
> src
  Assignment2question1
  Assignment2question2.java
  Main
  .gitignore
  JavaAssignment2.iml
> External Libraries
> Scratches and Consoles

1  import java.io.FileWriter;
2  import java.io.IOException;
3  import java.util.Scanner;
4
5  class User { 2 usages
6      private String firstName; 2 usages
7      private String lastName; 2 usages
8      private int age; 2 usages
9      private String phoneNumber; 2 usages
10
11      public User(String firstName, String lastName, int age, String phoneNumber) { 1 usage
12          this.firstName = firstName;
13          this.lastName = lastName;
14          this.age = age;
15          this.phoneNumber = phoneNumber;
16      }
17
18      public String toString() { 5 usages
19          return firstName + " " + lastName + ", Age: " + age + ", Phone: " + phoneNumber;
20      }
21  }
22
23  public class Assignment2Question2 {
24      public static void main(String[] args) {
25          Scanner scanner = new Scanner(System.in);
26          String filePath = "users.txt";
27
28          while (true) {
29              System.out.print("Enter First Name: ");
30              String firstName = scanner.nextLine();
31
32              System.out.print("Enter Last Name: ");
33              String lastName = scanner.nextLine();
34
35              System.out.print("Enter Age: ");
36              int age = Integer.parseInt(scanner.nextLine());
37
38              System.out.print("Enter Phone Number: ");
39              String phoneNumber = scanner.nextLine();
40
41              User user = new User(firstName, lastName, age, phoneNumber);
42
43              try (FileWriter fw = new FileWriter(filePath, append: true)) {
```

```
Project - JavaAssignment2 - ~/IdeaProjects/JavaAssignment2
> .idea
> .out
> src
  Assignment2question1
  Assignment2question2.java
  Main
  .gitignore
  JavaAssignment2.iml
> External Libraries
> Scratches and Consoles

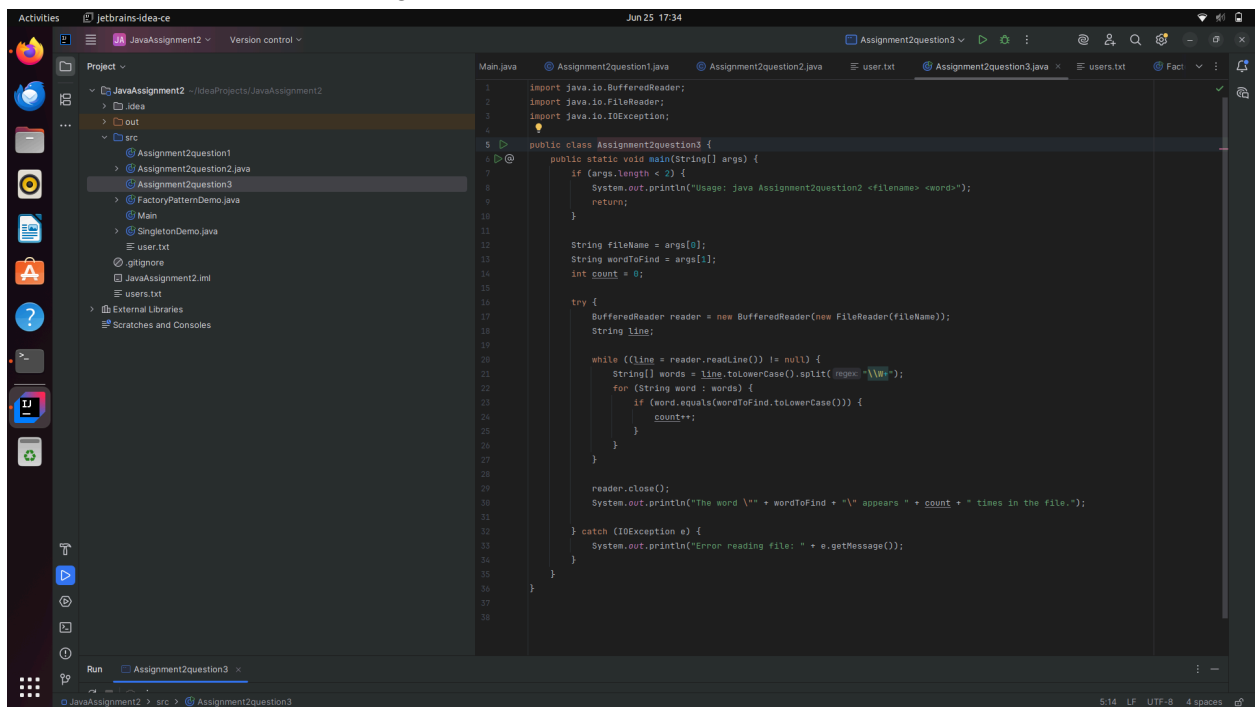
1  import java.io.FileWriter;
2  import java.io.IOException;
3  import java.util.Scanner;
4
5  class User { 2 usages
6      private String firstName; 2 usages
7      private String lastName; 2 usages
8      private int age; 2 usages
9      private String phoneNumber; 2 usages
10
11      public User(String firstName, String lastName, int age, String phoneNumber) { 1 usage
12          this.firstName = firstName;
13          this.lastName = lastName;
14          this.age = age;
15          this.phoneNumber = phoneNumber;
16      }
17
18      public String toString() { 5 usages
19          return firstName + " " + lastName + ", Age: " + age + ", Phone: " + phoneNumber;
20      }
21  }
22
23  public class Assignment2Question2 {
24      public static void main(String[] args) {
25          Scanner scanner = new Scanner(System.in);
26          String filePath = "users.txt";
27
28          while (true) {
29              System.out.print("Enter First Name: ");
30              String firstName = scanner.nextLine();
31
32              System.out.print("Enter Last Name: ");
33              String lastName = scanner.nextLine();
34
35              System.out.print("Enter Age: ");
36              int age = Integer.parseInt(scanner.nextLine());
37
38              System.out.print("Enter Phone Number: ");
39              String phoneNumber = scanner.nextLine();
40
41              User user = new User(firstName, lastName, age, phoneNumber);
42
43              try (FileWriter fw = new FileWriter(filePath, append: true)) {
```

Output:

```
/usr/lib/jvm/java-1.17.0-openjdk-amd64/bin/java -javaagent:/opt/intellij/lib/idea_rt.jar=33845 -Dfile.encoding=UTF-8 -classpath /home/aradhana/IdeaProjects/JavaAssignment2/out/production/JavaAssignment2 Assignment2
Enter First Name: Aradhana
Enter Last Name: mishra
Enter Age: 23
Enter Phone Number: 7754898421
User saved to file successfully.
Do you want to continue creating users? (Type QUIT to exit): QUIT
Goodbye!

Process finished with exit code 0
```

3. Write a program to count number of occurrences of a word in a file. The file name and word should be supplied through commandline.

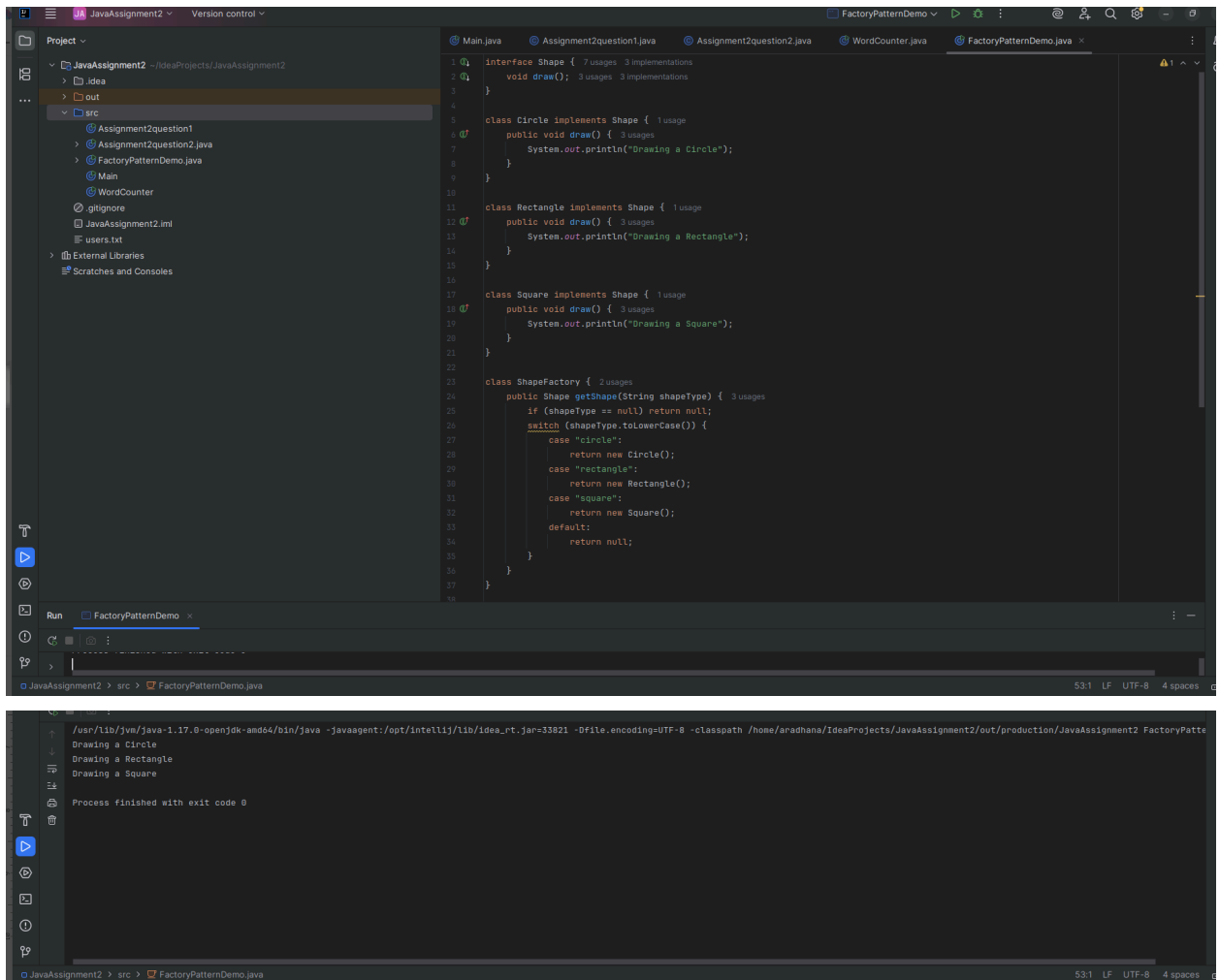


The screenshot shows the IntelliJ IDEA IDE with a project named 'JavaAssignment2'. The 'src' directory contains several files, including 'Assignment2Question3.java'. The code in this file is as follows:

```
1 import java.io.BufferedReader;
2 import java.io.FileReader;
3 import java.io.IOException;
4
5 public class Assignment2Question3 {
6     public static void main(String[] args) {
7         if (args.length < 2) {
8             System.out.println("Usage: java Assignment2Question2 <filename> <word>");
9             return;
10        }
11
12        String fileName = args[0];
13        String wordToFind = args[1];
14        int count = 0;
15
16        try {
17            BufferedReader reader = new BufferedReader(new FileReader(fileName));
18            String line;
19
20            while ((line = reader.readLine()) != null) {
21                String[] words = line.toLowerCase().split("\\s+");
22                for (String word : words) {
23                    if (word.equals(wordToFind.toLowerCase())) {
24                        count++;
25                    }
26                }
27            }
28
29            reader.close();
30            System.out.println("The word \"" + wordToFind + "\" appears " + count + " times in the file.");
31
32        } catch (IOException e) {
33            System.out.println("Error reading file: " + e.getMessage());
34        }
35    }
36 }
```

```
aradhana@TTNPL-aradhanaMishra: ~/IdeaProjects/JavaAssignment2
aradhana@TTNPL-aradhanaMishra:~$ cd javaassignment2
bash: cd: javaassignment2: No such file or directory
aradhana@TTNPL-aradhanaMishra:~$ cd JavaAssignment
bash: cd: JavaAssignment: No such file or directory
aradhana@TTNPL-aradhanaMishra:~$ find JavaAssignment2
find: 'JavaAssignment2': No such file or directory
aradhana@TTNPL-aradhanaMishra:~$ cd idea
bash: cd: idea: No such file or directory
aradhana@TTNPL-aradhanaMishra:~$ cd IdeaProject
bash: cd: IdeaProject: No such file or directory
aradhana@TTNPL-aradhanaMishra:~$ cd IdeaProjects
aradhana@TTNPL-aradhanaMishra:~/IdeaProjects$ cd JavaAssignment2
aradhana@TTNPL-aradhanaMishra:~/IdeaProjects/JavaAssignment2$ cd user.txt
bash: cd: user.txt: No such file or directory
aradhana@TTNPL-aradhanaMishra:~/IdeaProjects/JavaAssignment2$ cd src
aradhana@TTNPL-aradhanaMishra:~/IdeaProjects/JavaAssignment2/src$ user.txt
user.txt: command not found
aradhana@TTNPL-aradhanaMishra:~/IdeaProjects/JavaAssignment2/src$ cd ..
aradhana@TTNPL-aradhanaMishra:~/IdeaProjects/JavaAssignment2$ cat users.txt
Aradhana mishra, Age: 23, Phone: 7754898421
aradhana@TTNPL-aradhanaMishra:~/IdeaProjects/JavaAssignment2$
```

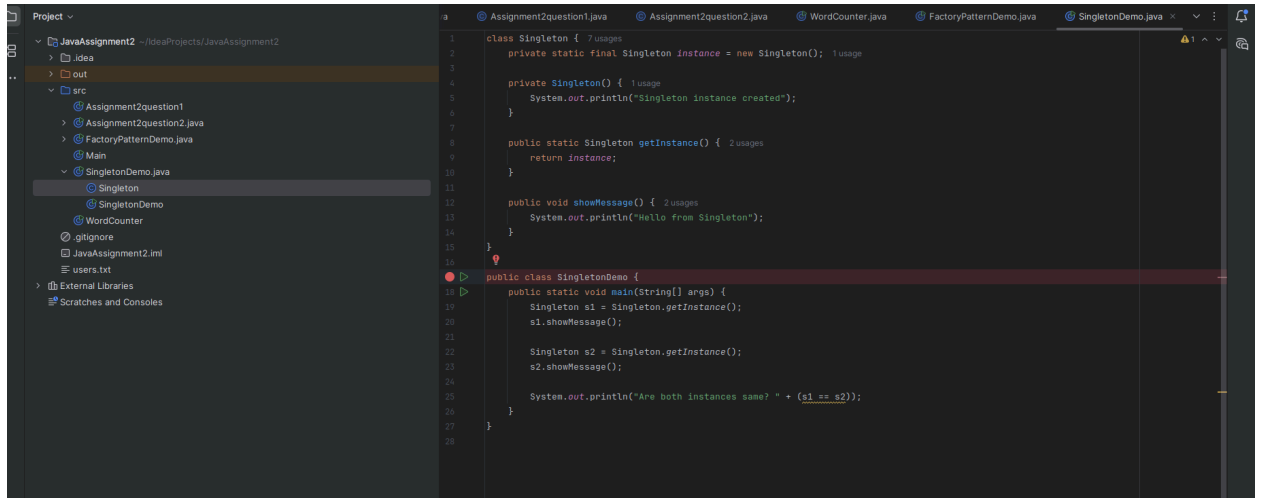
4. Write a program to show application of Factory Design Pattern.



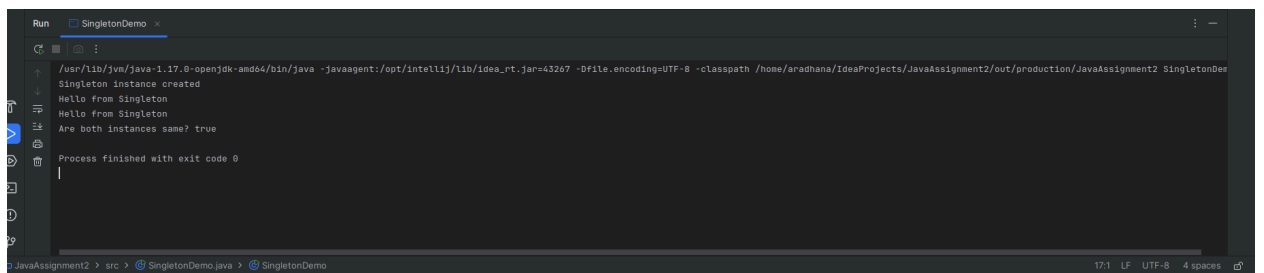
```
1 interface Shape {
2     void draw();
3 }
4
5 class Circle implements Shape {
6     public void draw() {
7         System.out.println("Drawing a Circle");
8     }
9 }
10
11 class Rectangle implements Shape {
12     public void draw() {
13         System.out.println("Drawing a Rectangle");
14     }
15 }
16
17 class Square implements Shape {
18     public void draw() {
19         System.out.println("Drawing a Square");
20     }
21 }
22
23 class ShapeFactory {
24     public Shape getShape(String shapeType) {
25         if (shapeType == null) return null;
26         switch (shapeType.toLowerCase()) {
27             case "circle":
28                 return new Circle();
29             case "rectangle":
30                 return new Rectangle();
31             case "square":
32                 return new Square();
33             default:
34                 return null;
35         }
36     }
37 }
```

```
./usr/lib/jvm/java-1.17.0-openjdk-amd64/bin/java -javaagent:/opt/intelliJ/lib/idea_rt.jar=33821 -Dfile.encoding=UTF-8 -classpath /home/aradhana/IdeaProjects/JavaAssignment2/out/production/JavaAssignment2 FactoryPatte
Drawing a Circle
Drawing a Rectangle
Drawing a Square
Process finished with exit code 0
```

5. Write a program to show application of Singleton Design Pattern.



```
1 class Singleton { 7 usages
2     private static final Singleton instance = new Singleton(); 1 usage
3
4     private Singleton() { 1 usage
5         System.out.println("Singleton instance created");
6     }
7
8     public static Singleton getInstance() { 2 usages
9         return instance;
10    }
11
12    public void showMessage() { 2 usages
13        System.out.println("Hello from Singleton");
14    }
15 }
16
17 public class SingletonDemo {
18     public static void main(String[] args) {
19         Singleton s1 = Singleton.getInstance();
20         s1.showMessage();
21
22         Singleton s2 = Singleton.getInstance();
23         s2.showMessage();
24
25         System.out.println("Are both instances same? " + (s1 == s2));
26     }
27 }
28
```



```
Run SingletonDemo x
+ /usr/lib/jvm/java-1.17.0-openjdk-amd64/bin/java -javaagent:/opt/intellij/lib/idea_rt.jar=43267 -Dfile.encoding=UTF-8 -classpath /home/aramdhan/IdeaProjects/JavaAssignment2/out/production/JavaAssignment2 SingletonDemo
+ Singleton instance created
+ Hello from Singleton
+ Hello from Singleton
+ Are both instances same? true
+ Process finished with exit code 0
+
JavaAssignment2 > src > SingletonDemo.java > SingletonDemo
17:1 LF UTF-8 4 spaces
```