```java
import java.text.SimpleDateFormat;

// Clock class responsible for displaying the current time and date
class Clock {
    private final SimpleDateFormat formatter = new SimpleDateFormat("HH:mm:ss dd-MM-yyyy");

    public synchronized void displayTime() {
        System.out.println(formatter.format(new Date()));
    }
}

// Thread for updating the time continuously
class TimeUpdater extends Thread {
    public TimeUpdater(Clock clock) {
        this.setPriority(Thread.MIN_PRIORITY); // Lower priority
    }

    @Override
    public void run() {
        while (true) {
            try {
                Thread.sleep(1000); // Update every second
            } catch (InterruptedException e) {
                System.out.println("TimeUpdater thread interrupted");
            }
        }
    }
}

// Thread for displaying the time
class TimeDisplay extends Thread {
    private final Clock clock;

    public TimeDisplay(Clock clock) {
        this.clock = clock;
        this.setPriority(Thread.MAX_PRIORITY); // Higher priority
    }

    @Override
    public void run() {
        while (true) {
            clock.displayTime();
            try {
                Thread.sleep(1000); // Update display every second
            } catch (InterruptedException e) {
                System.out.println("TimeDisplay thread interrupted");
            }
        }
    }
}
```

```java
 1  // Main class to run the clock application
 2  public class Main {
 3      public static void main(String[] args) {
 4          Clock clock = new Clock();
 5          TimeUpdater updater = new TimeUpdater(clock);
 6          TimeDisplay display = new TimeDisplay(clock);
 7
 8          updater.start();
 9          display.start();
10      }
11  }
```

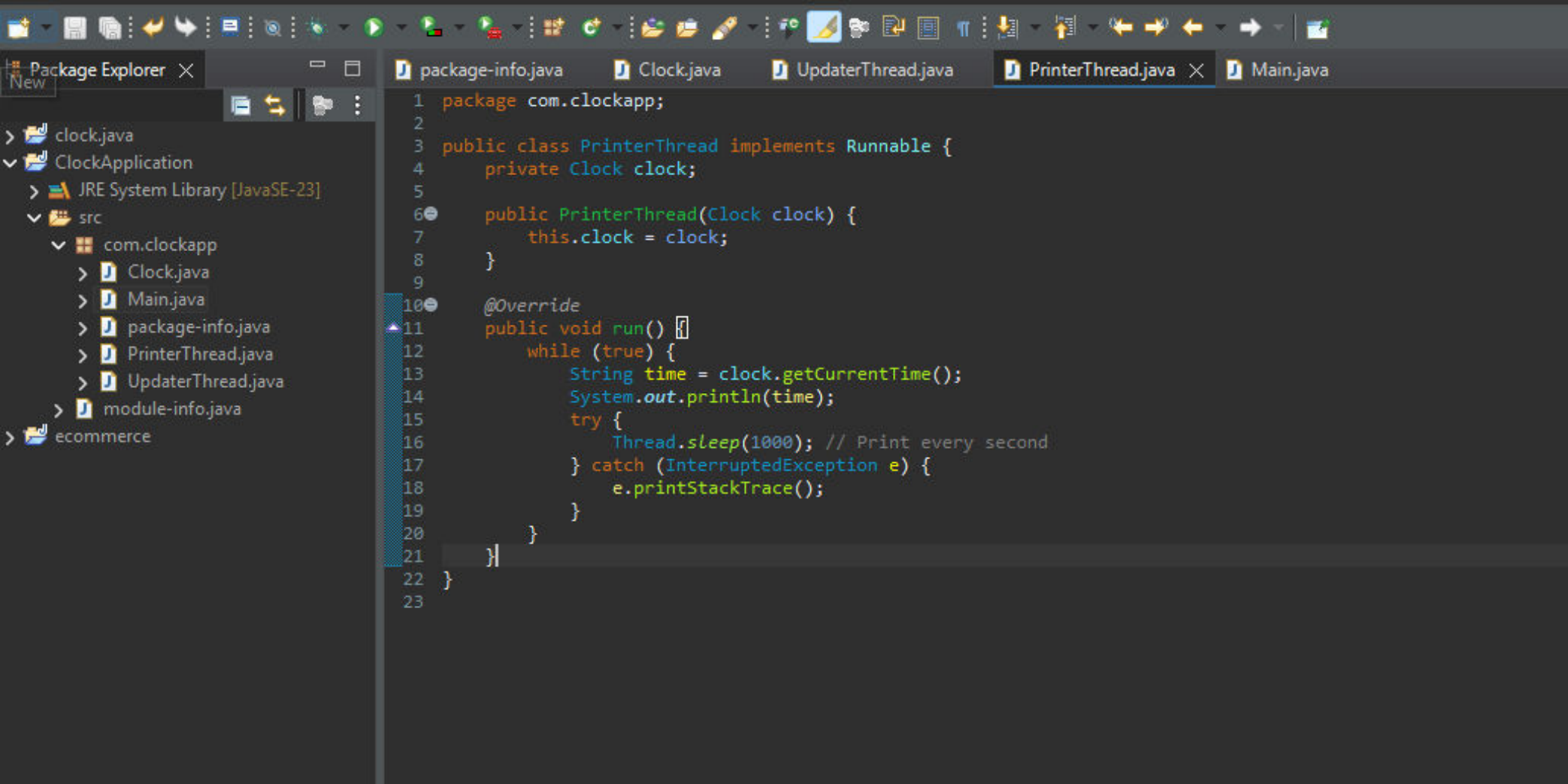Problems   @ Javadoc   Declaration   Console ✕

Main (2) [Java Application] C:\Users\Yahya\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_23.0.2.v

```
10:18:09 13-02-2025
10:18:10 13-02-2025
10:18:11 13-02-2025
10:18:12 13-02-2025
10:18:13 13-02-2025
10:18:14 13-02-2025
10:18:15 13-02-2025
10:18:16 13-02-2025
10:18:17 13-02-2025
10:18:18 13-02-2025
10:18:19 13-02-2025
10:18:20 13-02-2025
10:18:21 13-02-2025
10:18:22 13-02-2025
10:18:23 13-02-2025
10:18:24 13-02-2025
10:18:25 13-02-2025
10:18:26 13-02-2025
10:18:27 13-02-2025
10:18:29 13-02-2025
10:18:30 13-02-2025
10:18:31 13-02-2025
10:18:32 13-02-2025
10:18:33 13-02-2025
10:18:34 13-02-2025
10:18:35 13-02-2025
10:18:36 13-02-2025
10:18:37 13-02-2025
10:18:38 13-02-2025
10:18:39 13-02-2025
10:18:40 13-02-2025
10:18:41 13-02-2025
10:18:42 13-02-2025
10:18:43 13-02-2025
10:18:44 13-02-2025
10:18:45 13-02-2025
10:18:46 13-02-2025
10:18:47 13-02-2025
10:18:48 13-02-2025
```

Package Explorer view:
- clock.java
- ClockApplication
  - JRE System Library [JavaSE-23]
  - src
    - com.clockapp
      - Clock.java
      - Main.java
      - package-info.java
      - PrinterThread.java
      - UpdaterThread.java
    - module-info.java
- ecommerce

```java
package com.clockapp;

import java.text.SimpleDateFormat;
import java.util.Date;

public class Clock {
    private String currentTime;

    public Clock() {
        updateTime();
    }

    public void updateTime() {
        SimpleDateFormat sdf = new SimpleDateFormat("HH:mm:ss dd-MM-yyyy");
        String newTime = sdf.format(new Date());
        synchronized (this) {
            currentTime = newTime;
        }
    }

    public String getCurrentTime() {
        synchronized (this) {
            return currentTime;
        }
    }
}
```

Package Explorer tree:
- clock.java
- ClockApplication
  - JRE System Library [JavaSE-23]
  - src
    - com.clockapp
      - Clock.java
      - Main.java
      - package-info.java
      - PrinterThread.java
      - UpdaterThread.java
    - module-info.java
- ecommerce

```java
package com.clockapp;

public class UpdaterThread implements Runnable {
    private Clock clock;

    public UpdaterThread(Clock clock) {
        this.clock = clock;
    }

    @Override
    public void run() {
        while (true) {
            clock.updateTime();
            try {
                Thread.sleep(1); // Frequent updates with minimal sleep
            } catch (InterruptedException e) {
                e.printStackTrace();
            }
        }
    }
}
```

```java
package com.clockapp;

public class PrinterThread implements Runnable {
    private Clock clock;

    public PrinterThread(Clock clock) {
        this.clock = clock;
    }

    @Override
    public void run() {
        while (true) {
            String time = clock.getCurrentTime();
            System.out.println(time);
            try {
                Thread.sleep(1000); // Print every second
            } catch (InterruptedException e) {
                e.printStackTrace();
            }
        }
    }
}
```

```
1  package com.clockapp;
2
3  public class Main {
4      public static void main(String[] args) {
5          Clock clock = new Clock();
6
7          Thread updater = new Thread(new UpdaterThread(clock));
8          Thread printer = new Thread(new PrinterThread(clock));
9
10         printer.setPriority(Thread.MAX_PRIORITY);
11         updater.setPriority(Thread.MIN_PRIORITY);
12
13         updater.start();
14         printer.start();
15     }
16 }
```

Package Explorer tree:

- clock.java
- ClockApplication
  - JRE System Library [JavaSE-23]
  - src
    - com.clockapp
      - Clock.java
      - Main.java
      - package-info.java
      - PrinterThread.java
      - UpdaterThread.java
    - module-info.java
- ecommerce

Problems   @ Javadoc   Declaration   Console ✕   Coverage

Main (3) [Java Application] C:\Users\Yahya\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_23.0.2.v202501

```
10:35:53 13-02-2025
10:35:54 13-02-2025
10:35:55 13-02-2025
10:35:56 13-02-2025
10:35:57 13-02-2025
10:35:58 13-02-2025
10:35:59 13-02-2025
10:36:00 13-02-2025
10:36:01 13-02-2025
10:36:02 13-02-2025
10:36:03 13-02-2025
10:36:04 13-02-2025
10:36:05 13-02-2025
10:36:06 13-02-2025
10:36:07 13-02-2025
10:36:08 13-02-2025
10:36:09 13-02-2025
10:36:10 13-02-2025
10:36:11 13-02-2025
10:36:12 13-02-2025
10:36:13 13-02-2025
10:36:14 13-02-2025
10:36:15 13-02-2025
10:36:16 13-02-2025
10:36:17 13-02-2025
```