

This project, **ClockWithThreads**, is a simple Java application demonstrating the use of threads to display a continuously updating clock. It consists of the following key components:

1. **Clock Class**: Responsible for formatting and providing the current time and date.
2. **ClockPrinter Class**: A high-priority thread that prints the current time and date to the console every second.
3. **TimeUpdater Class**: A low-priority thread simulating a background task.
4. **Main Class**: Manages the lifecycle of threads and orchestrates the program flow.

The project showcases:

- Java threading basics with custom thread priorities.
- Continuous time updates displayed in a user-friendly format (**HH:mm:ss dd-MM-yyyy**).
- Thread-safe concurrency management using **AtomicBoolean** .

Instructions to Run and Test the Program

1. Extract the Folder:

- Unzip the folder named **ClockWithThreads** and navigate to its directory.

2. Compile and Run:

- Use the following command to compile and run the program:

```
javac -cp src src/com/clock/Main.java -d bin && java -cp bin  
com.clock.Main
```

- On Windows, replace forward slashes (/) with backslashes (\) in the paths.
- **Observe Output:**
 - The console will display the current time and date every second for 30 seconds.
 - Example output:

```
Current Time: 12:34:56 06-12-2024
```

```
Current Time: 12:34:57 06-12-2024
```

1. To Test:

- Modify the runtime in the `Main` class (default is 30 seconds).
- Observe thread behavior and priorities by adjusting thread priorities in `ClockPrinter` and `TimeUpdater`.

2. Terminate Execution:

- The program automatically stops after the configured duration. You can also terminate it manually using `Ctrl + C`.

This project demonstrates threading in Java and serves as an example of a real-life use case involving concurrency.

The Screenshots:

```
<adam178 @ archlinux in ~/U/a/c/w/ClockWithThreads>
└─> javac -cp src src/com/uopeople/clock/Main.java -d bin
<adam178 @ archlinux in ~/U/a/c/w/ClockWithThreads>
└─> java -cp bin com.uopeople.clock.Main
Current Time: 02:56:16 06-12-2024
Current Time: 02:56:17 06-12-2024
Current Time: 02:56:18 06-12-2024
Current Time: 02:56:19 06-12-2024
Current Time: 02:56:20 06-12-2024
Current Time: 02:56:21 06-12-2024
Current Time: 02:56:22 06-12-2024
Current Time: 02:56:23 06-12-2024
Current Time: 02:56:24 06-12-2024
Current Time: 02:56:25 06-12-2024
Current Time: 02:56:26 06-12-2024
Current Time: 02:56:27 06-12-2024
^C
```

```
<adam178 @ archlinux in ~/U/a/c/w/ClockWithThreads>  
└─» javac -cp src src/com/uopeople/clock/Main.java -d bin && java -cp bin com.uopeople.clock.Main  
Current Time: 02:56:42 06-12-2024  
Current Time: 02:56:43 06-12-2024  
Current Time: 02:56:44 06-12-2024  
Current Time: 02:56:45 06-12-2024  
Current Time: 02:56:46 06-12-2024  
Current Time: 02:56:47 06-12-2024  
Current Time: 02:56:48 06-12-2024  
Current Time: 02:56:49 06-12-2024  
Current Time: 02:56:50 06-12-2024  
Current Time: 02:56:51 06-12-2024  
Current Time: 02:56:52 06-12-2024  
Current Time: 02:56:53 06-12-2024  
Current Time: 02:56:54 06-12-2024  
Current Time: 02:56:55 06-12-2024  
Current Time: 02:56:56 06-12-2024  
Current Time: 02:56:57 06-12-2024  
Current Time: 02:56:58 06-12-2024  
Current Time: 02:56:59 06-12-2024  
Current Time: 02:57:00 06-12-2024  
Current Time: 02:57:01 06-12-2024  
Current Time: 02:57:02 06-12-2024  
Current Time: 02:57:03 06-12-2024  
Current Time: 02:57:04 06-12-2024  
Current Time: 02:57:05 06-12-2024  
Current Time: 02:57:06 06-12-2024  
Current Time: 02:57:07 06-12-2024  
Current Time: 02:57:08 06-12-2024  
Current Time: 02:57:09 06-12-2024  
Current Time: 02:57:10 06-12-2024  
Current Time: 02:57:11 06-12-2024  
Clock application terminated.  
<adam178 @ archlinux in ~/U/a/c/w/ClockWithThreads>
```