

# **Dates and Times**

## **Creating Dates and Times**

```
// there are four Date/Time types in java.time package
```

```
import java.time.*;
```

```
// in main() method
```

```
LocalDate now1 = LocalDate.now();
```

```
LocalTime now2 = LocalTime.now();
```

```
LocalDateTime now3 = LocalDateTime.now();
```

```
ZonedDateTime now4 = ZonedDateTime.now();
```

```
System.out.println(now1);
```

```
System.out.println(now2);
```

```
System.out.println(now3);
```

```
System.out.println(now4);
```

```
2023-04-16
```

```
12:12:51.372755660
```

```
2023-04-16T12:12:51.372980941
```

```
2023-04-16T12:12:51.373473327Z[GMT]
```

// creating local date:

```
LocalDate d1 = LocalDate.of(2022, Month.NOVEMBER, 2);
```

```
LocalDate d2 = LocalDate.of(2022, 11, 2);
```

```
System.out.println(d1);
```

=> 2022-11-02

// creating local time:

```
LocalTime t1 = LocalTime.of(21, 50);
```

```
LocalTime t2 = LocalTime.of(21, 50, 14);
```

```
LocalTime t3 = LocalTime.of(21, 50, 14, 145);
```

```
System.out.println(t3);
```

=> 21:50:14.000000145

// creating local date-time:

```
LocalDateTime dt1 = LocalDateTime.of(2022, Month.NOVEMBER, 2, 21, 50, 14);
```

```
LocalDate d1 = LocalDate.of(2022, Month.NOVEMBER, 2);
```

```
LocalTime t3 = LocalTime.of(21, 50, 14, 145);
```

```
LocalDateTime dt2 = LocalDateTime.of(d1, t3);
```

```
System.out.println(dt2);
```

=> 2022-11-02T21:50:14.000000145

// creating zoned date-time:

```
ZoneId zone = ZoneId.of("Europe/Zagreb");
```

```
ZonedDateTime z1 = ZonedDateTime.of(2022, 11, 2, 21, 50, 14, 145, zone);
```

```
System.out.println(z1);
```

=> 2022-11-02T21:50:14.000000145+01:00[Europe/Zagreb]

// for the exam, you need to know how to convert between time-zones:

2022-11-02T13:50+05:30[<zone>]

=> GMT 2022-11-02 7:20

2022-11-02T06:10-05:00[<zone>]

=> GMT 2022-11-02 11:20

// just remember to subtract the offset time

// (subtracting negative numbers is addition)