DATE & TIME

Date and Time

- The java.time , java.util packages contains classes for representing date and time
- The java.time.LocalDate and the java.time.LocalTime classes provide a representation of date and time and java.time.LocalDateTime represents both date and time.
- Following are some of the important classes introduced in java.time package:-

- java.time.LocalDate
- java.time.LocalTime
- java.time.LocalDateTime
- Java.time.format.DateTimeFormatter
- Java.time.Duration

- **java.time.LocalDate** - class that represents Date (default format yyyy-mm-dd).

Some Methods of Java LocalDate class –

- static LocalDate now()
- plusDays(long daysToAdd)
- Month getMonth()
- int getYear()
- int lengthOfMonth()
- int lengthOfYear()
- int getDayOfMonth()
- boolean isLeapYear()

Example 1-

```java
import java.time.LocalDate; // first import that package/class
public class DateExample {

    public static void main(String[] args) {
        // now() method is used to get current date(YYYY-MM-DD)
        // it is a static that's why we call it by class name only
        System.out.println("Today date:"+LocalDate.now());

    }

}
```

Example 2-

```
import java.time.LocalDate; // first import that package/class
public class DateExample {

    public static void main(String[] args) {
        // now() method is used to get current date(YYYY-MM-DD)

        LocalDate date = LocalDate.now(); // current date using now()
        LocalDate yesterday = date.minusDays(1);
        LocalDate tommorrow = yesterday.plusDays(2);

        System.out.println("Yesterday date:"+yesterday);
        System.out.println("Today date:"+date);
        System.out.println("Tommorrow date:"+ tommorrow);

    }

}
```

- **java.time.LocalTime** - class that represents Time (default format is hour-minute-second).

Some Methods of Java LocalTime class –

- static LocalTime now()
- LocalTime of(int hour, int minute, int second)
- minusHours(long hoursToSubtract)
- minusMinutes(long minutesToSubtract)
- plusHours(long hoursToAdd)
- plusMinutes(long minutesToAdd)

Example 1 -

```
import java.time.LocalTime; // first import that package/class
public class DateExample {

    public static void main(String[] args) {
        // now() method is used to get current time(hh-mm-ss)

        System.out.println(LocalTime.now());

        System.out.println(LocalTime.of(8,23,42));

    }

}
```

Example 2 -

```
import java.time.LocalTime; // first import that package/class
public class DateExample {

    public static void main(String[] args) {
        // now() method is used to get current time(hh-mm-ss)
        LocalTime time =LocalTime.now();
        // current time
        System.out.println(time);
        //return a time after specified number of hours from time
        LocalTime time1 = time.minusHours(1);
        System.out.println(time1);
        //return a time after specified number of min from time
        LocalTime time2 = time1.minusMinutes(10);
        System.out.println(time2);

    }

}
```

- **java.time.LocalDateTime** - class that represents date and time both(default format is as yyyy-MM-dd HH-mm-ss).

- The java.util package represents date and time in java. It provide methods to deal with date and time in. Following are some of the important classes introduced in this package:-

- java.util.Date- this class represents both date and time. we will create an object of the Date class .
- Java.util.Calender - use the **getInstance()** method of the Calendar class to create the object , and use that object to call the **getTime()** method to get the current time.

Some Methods of java.util.Date class -

- long getTime() - returns the time
- boolean equals(Date date) -compaires current date with given date and return Boolean value(T/F).

Example -

```
import java.util.Date; // first import that package/class
public class DateExample {

    public static void main(String[] args) {
        Date date = new Date();// create object of Date class
        System.out.println(date); //display date and time
    }

}
```

Example -

```
import java.util.Calendar; // first import that package/class
public class DateExample {

    public static void main(String[] args) {
        Calendar dt= Calendar.getInstance();// create object of calendar class

        System.out.println(dt.getTime()); //display date and time
    }

}
```