

```
// Time.java
```

```
/**
 * Time is a class to model time.
 *
 * <pre>
 * Time t = new Time(1, 3, 4);
 * if (t.isNoon())
 *     System.out.println("It is noon ");
 * else
 *     System.out.println("It is not noon ");
 * </pre>
 *
 * @author Peng Gao (pgaooscar@gmail.com)
 * @version 0.1 8 November 2020
 */
```

```
class Time {
```

```
    /**
     * "h" is the score for hour "m" is the score for minute "s" is the score for
     * second
     */
    private int h = 0, m = 0, s = 0;
```

```
    //////////////////////////////////////
    // Hleping functions
    //////////////////////////////////////
```

```
    /**
     * helping function
     *
     * @param s string
     */
    private void trace(String s) {
        System.out.println(s);
    }
```

```
    //////////////////////////////////////
    // Manhr functions
    //////////////////////////////////////
```

```
    /**
     * A constructor of the class Time
     *
     * @param h1 The score for the time's hour
```

```

    * @param m1 The score for time's minute
    * @param s1 The score for the time's second
    */
public Time(int h1, int m1, int s1) {
    h = h1;
    m = m1;
    s = s1;
    trace("constructor");
}

```

```

////////////////////////////////////
// Access function
////////////////////////////////////
// get
/**
 * get hour
 *
 * @return h time hour
 */
public int getH() {
    return h;
}

```

```

/**
 * get minute
 *
 * @return m time minute
 */
public int getM() {
    return m;
}

```

```

/**
 * get second
 *
 * @return s time second
 */
public int getS() {
    return s;
}

```

```

// set
/**
 * set hour

```

```

*
* @param h1 The score for the time's hour
*/
public void setH(int h1) {
    h = h1;
}

/**
* set minute
*
* @param m1 The score for the time's minute
*/
public void setM(int m1) {
    m = m1;
}

/**
* set second
*
* @param s1 The score for the time's second
*/
public void setS(int s1) {
    s = s1;
}

// predicate
/**
* to check is the time is noon
*
* @return true if the time is noon; false otherwise
*/
public boolean isNoon() {
    return h == 12 && m == 0 && s == 0;
}

////////////////////////////////////
// Implementor functions
////////////////////////////////////
/**
* to reset the time to the zero
*/
public void resetClockToZero() {
    h = m = s = 0;
}

```

```

/**
 * to print out the object
 */
public String toString() {
    return ("Hour = " + h + "\n" + "Minute = " + m + "\n" + "Second = " + s);
}

/**
 * to test does it equals
 */
public boolean equals(Object obj) { // override equals()
    Time tstTime;

    if (!(obj instanceof Time))
        return false;
    tstTime = (Time) obj;

    return (h == tstTime.h && m == tstTime.m && s == tstTime.s);
}
}

```

```

// MyClass.java
/**
 * MyClass is a class to run the program
 *
 * we have two time, to check are they equal, are they at noon
 *
 * <pre>
 *
 * if (t.isNoon())
 *     System.out.println("It is noon ");
 * else
 *     System.out.println("It is not noon ");
 * if (now.equals(then))
 *     System.out.println("now and then are equal.");
 * else
 *     System.out.println("now and then are not equal.");
 *
 * </pre>
 */
public class MyClass {
    public static void main(String args[]) {
        Time now = new Time(12, 0, 10);
    }
}

```

```
Time then = new Time(11, 30, 25);

if (now.equals(then))
    System.out.println("now and then are equal.");
else
    System.out.println("now and then are not equal.");
/*
 * System.out.println("hour =" + now.getH()); System.out.println("minute =" +
 * now.getM()); System.out.println("second =" + now.getS());
 */
System.out.println(now);

if (now.isNoon())
    System.out.println("It is noon now.");
else
    System.out.println("It is not noon now.");

now.resetClockToZero();
}
}
```





