**CIS 162 Lab 5**

**SimpleTime class**

**Objectives**

After completing this lab, you should be able to:

* write a class definition
* use conditional statements to solve problems

#### **Code**

Write the following program code.

1. Create a new class called SimpleTime
2. Define three integer instance variables to hold the hours, minutes and seconds. This will be military time where 0:00:00 is midnight and 13:30:00 is half past 1 p.m.
3. public SimpleTime (int h, int m, int s) - this constructor initializes the three instance variables to the input parameters
4. public SimpleTime ( ) - this default constructor initializes the three instance variables to midnight
5. public boolean isMidnight ( ) - return true if the current time is 0:00:00, otherwise return false
6. public boolean isNoon ( ) - return true if the current time is 12:00:00, otherwise return false
7. public boolean isLunchTime ( ) - return true if the current time is between 12:00:00 and 13:00:00 , otherwise return false
8. public String toString ( ) - use the three instance variables to build a String representation of the time. Examples: 14:12:56, 2:03:04, 9:00:00
9. public void increment ( ) - increases the current time by one second. Pay attention to end of rollovers of seconds and minutes.
10. Finish the main method provided for you and compare your results with the sample results
11. When everything is working download the SimpleTimeTest.java file. This is a JUnit class created to test the SimpleTime class automatically.

NOTES:

* I will explain during the lab how to run the SimpleTimeTest class
* Your solution must pass all the test cases to get full credit for the lab.

##### **Sample Results**

After writing and testing all methods, the following output should display to the terminal window by invoking the main ( ) method.

12:31:58  
is not midnight.  
is not noon.  
is lunch time.  
And the next 5 seconds are:   
12:31:59  
12:32:00  
12:32:01  
12:32:02  
12:32:03

Here is some starter code for the main method to test the SimpleTime class.

public static void main(){

SimpleTime st = new SimpleTime(12,31,58);

System.out.println(st.toString());

System.out.print("It is ");

if(!st.isMidnight())

System.out.print("not ");

System.out.println("midnight");

//do the same for noon

//do the same for lunch time

//also, increment it 5 times and print the new time

}

Here is an example of writing the code for one of the boolean methods:

public boolean isMidnight ( ) {

if (hours == 0 && minutes == 0 && seconds == 0)

return true;

else return false;

}

**Grading Criteria**

This lab is worth a possible 10 points. Show your instructor or lab assistant your working program when finished.