Lab4 Project

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CSC615

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Overview:

IDE:	vim
Date:	May 18th 2009
Compiler:	SUN JDK 6.0 Linux 64bit (1.6)
Ant Makefile:	build.xml
Project URL:	http://github.com/tanxin/xin_csc615

Get SourceCode:

From Git (newest version):

```
tanxin@laptop ~/.workspace-java/csc615 $ git clone git://github.com/tanxin/xin_overlay.git
```

Compile:

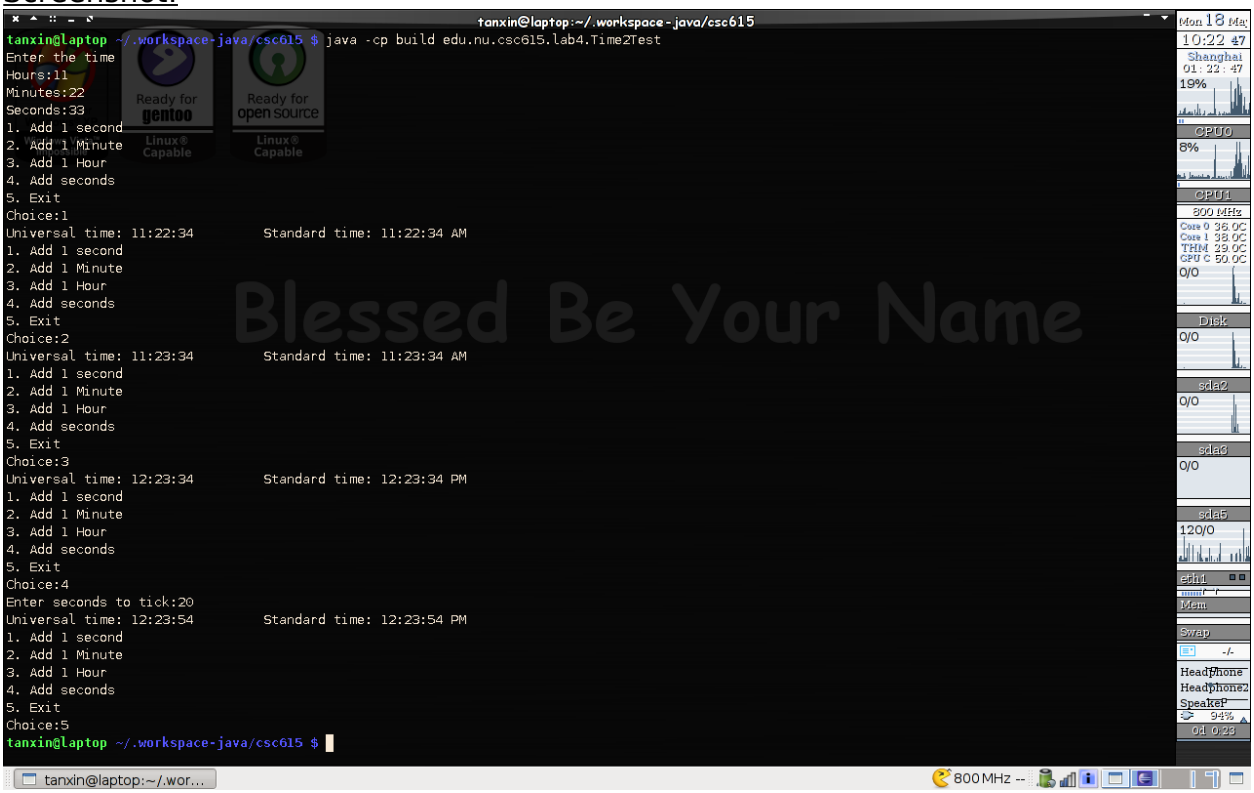
```
tanxin@laptop ~/.workspace-java/csc615 $ ant compile
Buildfile: build.xml

init:
    [mkdir] Created dir: /home/tanxin/documents/school/nu/CSC615/project/build

compile:
    [javac] Compiling 7 source files to /home/tanxin/documents/school/nu/CSC615/project/build

BUILD SUCCESSFUL
Total time: 1 second
```

Run:

```
tanxin@laptop ~/.workspace-java/csc615 $ java -cp build edu.nu.csc615.lab4.Time2Test
Enter the time
Hours:11
Minutes:22
Seconds:33
1. Add 1 second
2. Add 1 Minute
3. Add 1 Hour
4. Add seconds
5. Exit
Choice:1
Universal time: 11:22:34       Standard time: 11:22:34 AM
1. Add 1 second
2. Add 1 Minute
3. Add 1 Hour
4. Add seconds
5. Exit
```

```
        Choice:2
        Universal time: 11:23:34       Standard time: 11:23:34 AM
        1. Add 1 second
        2. Add 1 Minute
        3. Add 1 Hour
        4. Add seconds
        5. Exit
        Choice:3
        Universal time: 12:23:34       Standard time: 12:23:34 PM
        1. Add 1 second
        2. Add 1 Minute
        3. Add 1 Hour
        4. Add seconds
        5. Exit
        Choice:4
        Enter seconds to tick:20
        Universal time: 12:23:54       Standard time: 12:23:54 PM
        1. Add 1 second
        2. Add 1 Minute
        3. Add 1 Hour
        4. Add seconds
        5. Exit
        Choice:5
```

Screenshot:



Code List:

edu.nu.csc615.lab4.Time2Test.java

```
/**
 * Lab4
 *
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 *
 *
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 *
 *
 * @author  tanxin
 * Editor:  vim
 * Compile: sun-jdk-1.6.0.13 64bit
 * Date:    May 17th 2009
 * Makefile:build.xml (runa4)
 *
 * Copyright: Fig. 8.6: Time2Test.java
 */
package edu.nu.csc615.lab4;

import java.util.Scanner;

public class Time2Test
{
    public static void main( String args[] )
    {
        /* input buffer */
        int input;

        /* initialize time */
        Time2 t = new Time2();

        System.out.println("Enter the time");

        System.out.print("Hours:");
        Scanner scanner = new Scanner(System.in);
        t.setHour(scanner.nextInt());

        System.out.print("Minutes:");
        t.setMinute(scanner.nextInt());

        System.out.print("Seconds:");
        t.setSecond(scanner.nextInt());

        /* show menu in loop */
        while(true){
            System.out.println("1. Add 1 second");
            System.out.println("2. Add 1 Minute");
            System.out.println("3. Add 1 Hour");
            System.out.println("4. Add seconds");
            System.out.println("5. Exit");

            System.out.print("Choice:");
            input = scanner.nextInt();

            switch(input){
            /* add 1 second */
            case 1:
                t.setSecond(t.getSecond()+1);
                break;
            /* add 1 minute */
```

```
                    case 2:
                        t.setMinute(t.getMinute()+1);
                        break;
                    /* add 1 hour */
                    case 3:
                        t.setHour(t.getHour()+1);
                        break;
                    /* add particular seconds */
                    case 4:
                        System.out.print("Enter seconds to tick:");
                        input = scanner.nextInt();
                        t.setSecond(t.getSecond() + input);
                        break;
                    case 5:
                        System.exit(0);

                    default:
                        System.out.println("Wrong choice !!");
                    break;
                    }

                    /* output result */
                    System.out.printf( "Universal time: %s\t Standard time: %s\n", t.toUniversalString(), t.to-
String());
                }

            }
        }


        /**************************************************************************
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         *
```

edu.nu.csc615.lab4.Time.java

```
        package edu.nu.csc615.lab4;

        public class Time2
        {
           private int hour;   // 0 - 23
           private int minute; // 0 - 59
           private int second; // 0 - 59

           // Time2 no-argument constructor: initializes each instance variable
           // to zero; ensures that Time2 objects start in a consistent state
           public Time2()
           {
              this( 0, 0, 0 ); // invoke Time2 constructor with three arguments
           } // end Time2 no-argument constructor

           // Time2 constructor: hour supplied, minute and second defaulted to 0
           public Time2( int h )
           {
              this( h, 0, 0 ); // invoke Time2 constructor with three arguments
           } // end Time2 one-argument constructor

           // Time2 constructor: hour and minute supplied, second defaulted to 0
           public Time2( int h, int m )
```

```
   {
      this( h, m, 0 ); // invoke Time2 constructor with three arguments
   } // end Time2 two-argument constructor

   // Time2 constructor: hour, minute and second supplied
   public Time2( int h, int m, int s )
   {
      setTime( h, m, s ); // invoke setTime to validate time
   } // end Time2 three-argument constructor

   // Time2 constructor: another Time2 object supplied
   public Time2( Time2 time )
   {
      // invoke Time2 three-argument constructor
      this( time.getHour(), time.getMinute(), time.getSecond() );
   } // end Time2 constructor with a Time2 object argument

   // Set Methods
   // set a new time value using universal time; ensure that
   // the data remains consistent by setting invalid values to zero
   public void setTime( int h, int m, int s )
   {
      setHour( h );   // set the hour
      setMinute( m ); // set the minute
      setSecond( s ); // set the second
   } // end method setTime

   // validate and set hour
   public void setHour( int h )
   {
      hour = ( ( h >= 0 && h < 24 ) ? h : 0 );
   } // end method setHour

   // validate and set minute
   public void setMinute( int m )
   {
      minute = ( ( m >= 0 && m < 60 ) ? m : 0 );
   } // end method setMinute

   // validate and set second
   public void setSecond( int s )
   {
      second = ( ( s >= 0 && s < 60 ) ? s : 0 );
   } // end method setSecond

   // Get Methods
   // get hour value
   public int getHour()
   {
      return hour;
   } // end method getHour

   // get minute value
   public int getMinute()
   {
      return minute;
   } // end method getMinute

   // get second value
   public int getSecond()
   {
      return second;
   } // end method getSecond

   // convert to String in universal-time format (HH:MM:SS)
   public String toUniversalString()
   {
      return String.format(
         "%02d:%02d:%02d", getHour(), getMinute(), getSecond() );
   } // end method toUniversalString

   // convert to String in standard-time format (H:MM:SS AM or PM)
```

```
   public String toString()
   {
      return String.format( "%d:%02d:%02d %s",
         ( (getHour() == 0 || getHour() == 12) ? 12 : getHour() % 12 ),
         getMinute(), getSecond(), ( getHour() < 12 ? "AM" : "PM" ) );
   } // end method toString
} // end class Time2

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 *
```