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| Due Date: | By 11:55pm Friday September 27, 2019 |
| Evaluation: | 2% of final mark (see marking rubric at the end of handout) |
| Late Submission: | none accepted |
| Purpose: | The purpose of this assignment is to help you learn Java identifiers, assignments, input/output and if and if/else statements. |
| CEAB/CIPS Attributes: | Design/Problem analysis/Communication Skills |

General Guidelines When Writing Programs:

Include the following comments at the top of your source codes

```
// -----  
// Assignment (include number)  
// Written by: (include your name and student id)  
// For COMP 248 Section (your section) - Fall 2019  
// -----
```

- In a comment, give a general explanation of what your program does. As the programming questions get more complex, the explanations will get lengthier.
- Include comments in your program describing the main steps in your program. Focus in your comments rather on the why than the how.
- Display a welcome message.
- Display clear prompts for users when you are expecting the user to enter data from the keyboard.
- All output should be displayed with clear messages and in an easy to read format.
- End your program with a closing message so that the user knows that the program has terminated.

Question 1 - Display a message (4 pts)

Write a complete Java program that displays the following output exactly as in the sample output. You are to use a **single** *System.out.println()* statement to output the message:

```
Welcome to COMP 248 Java Programming!  
Let's use programming to have some coffee when you work!  
while (Working)  
{  
    CoffeeMug.Drink();  
    workTask.Execute();  
    if (coffeeMug == "Empty")  
    {  
        if (coffePot == "Empty")  
            coffeePot.Make();  
        coffeMug.Refill();  
    }  
    Enjoy your coffee!  
}
```

There is no need to declare any variables for this question.

Question 2 - Time Converter Program (8 points)

Write a java program that:

- prompts for and reads a **5-digit** number representing a time in seconds
- calculates and outputs the corresponding hours, minutes and seconds using the same format as in the sample outputs below.
- If the converted hours, minutes and seconds is a valid time (i.e., within the range 00:00:00 to 24:00:00) display the time as hh:mm:ss.
Note: if the hours, minutes or seconds are equal to 0, you should display 00.
- If the converted time is not valid, swap the **first and last** digits of the original input and output the corresponding hours, minutes and seconds.

Use 2 constant variables to store the number of minutes in an hour and the number of seconds in a minute.

Following are 4 sample screenshots to illustrate the expected behavior of your program. Assume a perfect user who will always enter a positive integer with 5 digits.

Note: Your program must display the same information and formatted the same.

```
*****
Welcome to Time Converter Program
*****

Please enter the seconds which will be converted: 86400

The correspond hours, minutes, seconds is 24 hrs, 0 mins, 0 secs.

The valid time is: 24:00:00.

Thank you for using the Time Converter Program!
```

```
*****
Welcome to Time Converter Program
*****

Please enter the seconds which will be converted: 12345

The correspond hours, minutes, seconds is 3 hrs, 25 mins, 45 secs.

The valid time is: 3:25:45.

Thank you for using the Time Converter Program!
```

```

*****
Welcome to Time Converter Program
*****

Please enter the seconds which will be converted: 98765

The correspond hours, minutes, seconds is 27 hrs, 26 mins, 5 secs.

There is no valid time of your input.

The swapped sequence of the input time is:58769

The correspond hours, minutes, seconds is 16 hrs, 19 mins, 29 secs.

Thank you for using the Time Converter Program!

```

```

*****
Welcome to Time Converter Program
*****

Please enter the seconds which will be converted: 98123

The correspond hours, minutes, seconds is 27 hrs, 15 mins, 23 secs.

There is no valid time of your input.

The swapped sequence of the input time is:38129

The correspond hours, minutes, seconds is 10 hrs, 35 mins, 29 secs.

Thank you for using the Time Converter Program!

```

Submitting Assignment 1

Please check your course Moodle webpage on how to submit the assignment.

Evaluation Criteria for Assignment 1 (20 points)

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|---------------------------------------|--|
| Source Code | |
| Comments for all 2 questions (5 pts.) | |

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|---|----------------|
| Description of the program (authors, date, purpose) | 2 pts. |
| Description of variables and constants | 1 pt. |
| Description of the algorithm | 2 pts. |
| Programming Style for all 2 questions (3 pts.) | |
| Use of significant names for identifiers | 1 pt. |
| Indentation and readability | 1 pt. |
| Welcome Banner or message/Closing message | 1 pt. |
| Question 1 (4 pts.) | |
| Display text using a SINGLE System.out.println() | 4 pts. |
| Question 2 (8 pts.) | |
| Prompting user | 1 pt. |
| Reading data | 2 pts. |
| Evaluating valid time | 2 pts. |
| Swapping two digits | 2 Pt. |
| Display result | 1 pt. |
| TOTAL | 20 pts. |