**CST8116 In-Lab Exercise 01 Section 332**

Learning Resources

* PowerPoint slides and Microsoft Word documents in lecture notes for Week 1.
* Hybrid 1 (installing Java and the Eclipse IDE).
* Required reading of Week 1:
  + Joyce Farrell. 2018. Programming Logic & Design Comprehensive. 9th Ed. Cengage Learning.  
    - Chapter 1
  + Cay Horstmann. 2019. Big Java Early Objects. 7th Ed. Wiley – Chapter 1 + end of chapter questions.

Learning Objectives

1. Practice how to design an algorithm using pseudocode and flowchart.
2. Practice the basics of Java programming by creating a simple program that outputs text to the console.

Task 1 – Problem Solving (3 points)

**General Instruction:   
1.** Use the **Lab Submission Template.docx** document to write your answers.2. Submit the completed document during the lab period for this assessment **- they will not be considered by the lab professor otherwise.**3. Thelab professor will take attendance. Students who are not attending will not receive marks for this in-lab exercise.

You were requested to write a program that will accept information about an employee paycheck, including the employee’s name, the base salary and bonus amount. The program will then calculate the total payment for the employee. The program will display the employee's name, and the total payment.

**Step 1:** Examine the following steps:

1. Get the employee’s name.
2. Get the base salary.
3. Calculate the total payment by adding the bonus and the base salary.
4. Get the bonus amount.
5. Display the employee’s name and the total payment.

**Step 2:** What logic error do you spot and how would you fix it?

***Use your MS Word document to provide your answer***

**Step 3:** Write pseudocode to plan and document your algorithm to solve the problem in Task 1.  
 Tip: Use notepad to write pseudocode to avoid MS Word formatting and spelling corrections.

**When done, place your pseudocode into your MS Word document**

Task 2 – Flowchart (3 points)

Using diagrams.net (Covered in Week 1 lecture notes) convert the corrected steps into a flowchart and place the flowchart as an image into your MS Word document.

Task 3 – Java Program (4 points)

Using Eclipse, create a project named In-Lab Exercise 01.

Create a class named **Myself** that outputs the following information about you:

**My name is:** *(your name will be shown here)*

**What I like about my home town:** (what you like will be shown here*)*

**What I dislike about my home town:** (*what you dislike will be shown here)*

Provide programmer comments in the source code file as demonstrated the lecture materials.

Take a screenshot of the Eclipse console showing the result of running the program and place this into your MS Word document.

You will need to upload your Java source code file with your MS Word document.  
Make sure to follow your lab professor’s submission guidelines and requirements.

Submission Requirements

* Use the provided MS Word Lab Exercise Template as you complete each task.
* **You will need to submit** **2 files**: your MS Word document and your Java source code file(s).

Grading

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| Criteria | Missing / Poorly Done (0) | Meets Expectations (3 to 4 points as indicated) |
| Task 1: Problem Solving | Missing / Poorly Done | Point(s): 3  The logic errors are spotted correctly.  Pseudocode has the correct sequence of steps. |
| Task 2: Flowchart | Missing / Poorly Done | Point(s): 3  Correct shapes are used for start, stop, declarations, input, processing, and output. Correct flow lines (sequence of steps). |
| Task 3: Java Program | Missing / Poorly Done | Point(s): 4  Screen shot shows program execution with the expected information displayed. The program has programmer comments as per lecture note guidelines. |

**Post-Lab Exercise 01 (Do not submit, can be done at home)**

* This optional practice is based on an older lab exercise and is not to be submitted for assessment or marks.
* The full sample solution will be provided, please attempt the optional practice first, then refer to the sample solution for extra help or to compare your answer.
* Reading the sample solution first, will not help you learn very much. It is important to attempt the optional practice first or to make a good attempt where time permits before seeing the solution.

Task 1 – Java Program

“A person would like a computer program that outputs the following shape using ASCII art.” Include your name on the screen as part of the output, replacing “your name” with your actual name as it appears in ACSIS.

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Program by *Your name*