**Computer Science 2**   **Lab # 07**



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**CS2 Section # \_\_3\_\_**

**Due:** Problem A by the **end of the lab** and Problems B by the end of **Saturday** of the same week.

**TOPIC:**

**Project A:**

**Problem Description:**

1) Problem A: MyProgrammingLab # 71045 (chapter 18, Programming Projects)

**Analysis:**

(Describe the problem including input and output in your own words. Type your answer in the following with **BLUE font color**)

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| **Write a recursive method that calculates the sum of 1/1 + ½ +1/3 … + 1/n. In the main method, call the sumSeries method and display each instance.** |

**Design:**

(Describe the major steps for solving the problem. Type your answer in the following with **BLUE font color**)

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| **sumSeries method**   * **Return type static double (in order to be used in the main)** * **Parameter type double (x)** * **Base case returns 1 when x = 1** * **Else returns 1/x + sumSeries(x-1)** * **Will continue to recall the method and add until x = 1**   **Main method**   * **Use scanner to get input from the user, basically asking for the number which you want to stop adding at** * **Use a for loop to be able to display each result** * **Use print f to get 2 decimal places** |

**Coding:** (Copy and Paste Source Code here. Type your answer in the following with **BLUE font color**)

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| import java.util.\*; public class SumSeries{  public static double sumSeries(double num){  if(num == 1)  return 1;  else  return 1.0/num + sumSeries(num-1.0);  }    public static void main(String[] args){  Scanner kb = new Scanner(System.in);  System.out.print("Enter the last positive integer you want m(i) to be calculated for:");  double input = kb.nextDouble();    for(int i=1; i<=input; i++){  System.out.print("m(" + i + ") = ");  System.out.printf("%.2f\n",sumSeries(i));  }  } } |

**Testing:** (Describe how you test this program. Type your answer in the following with **BLUE font color**)

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| **RUN three times, using the same input as in the sample runs:**  **Test 1:**  **...**  **Test 2:**  **…**  **Test 3:**  **…** |