MIDTERM PROJECT

MOBILE APPLICATION AND GAME DEVELOPMENT DEPARTMENT

INTRODUCTION TO C# PROGRAMMING

COHORTS: DIPLOMA IN MOBILE APPLICATION AND GAME DEVELOPMENT

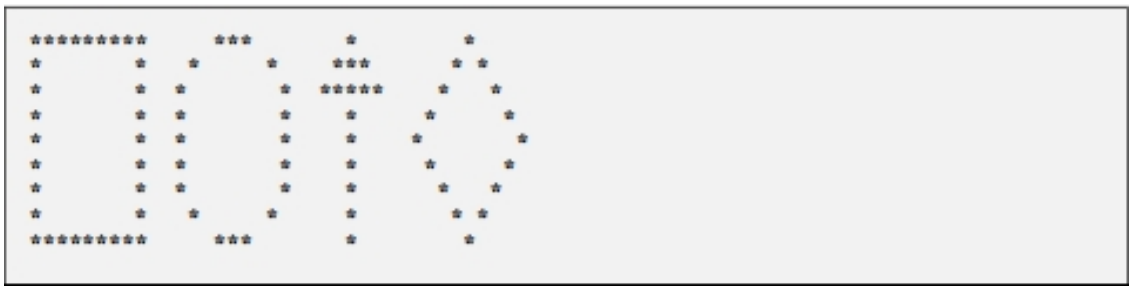
INSTRUCTOR: HILLARY CHESARO

DUE DATE: 24TH JUNE 2019

INSTRUCTIONS: *USE THE VISUAL STUDIO IDE FOR CREATING YOUR SOURCE FILES, SAVE INTO ONE FOLDER AND COMPRESS THE FOLDER INTO ZIP FORMAT AND RENAME THE FILE WITH YOUR REGISTRATION NO. THEN SEND TO THE RESPECTIVE GOOGLE CLASSROOM ACCOUNT WITH YOUR FULL NAMES AS THE HEADER FOR EVALUATION BEFORE THE DEADLINE. GOOD LUCK!*

1. **Write** a complete app named **product** that calculates and displays the product of three integers. **(4mks)**

2. **Write** an app named **shapes** that displays a box, an oval, an arrow and a diamond using asterisks (*), as follows **(10mks)**



3. **Write** C# statements in an app named **math** to accomplish each of the following tasks: **(5mks)**

   a) **Assign** the sum of x and y to z, and increment x by 1 with ++. Use only one statement and ensure that the original value of x is used in the statement.

   b) **Test** whether variable count is greater than 10. If it is, display "Count is greater than 10".

   c) **Decrement** the variable x by 1, then subtract it from the variable total. Use only one statement.

   d) **Calculate** the remainder after q is divided by divisor, and assign the result to q. Write this statement in two different ways.

4. **Write** an app named **iteration** that calculates and displays the sum of the integers from 1 to 10. Use a while statement to loop through the calculation and increment statements. The loop should terminate when the value of x becomes 11**.(5mks)**

5. Drivers are concerned with the mileage their automobiles get. One driver has kept track of several tankfuls of gasoline by recording the miles driven and gallons used for each tankful. **Develop** a C# app named **mileage** that will input the miles driven and gallons used (both as integers) for each tankful. The app should calculate and display the miles per gallon obtained for each thankful and display the combined miles per gallon obtained for all tankfuls up to this point. All averaging calculations should produce floating-point results. Display the results rounded to the nearest hundredth. Use the Console class's ReadLine method and sentinel-controlled repetition to obtain the data from the user**.(10mks)**

6. **Develop** a C# app named **credit** that will determine whether any of several department-store customers has exceeded the credit limit on a charge account. For each customer, the following facts are available:

   a) account number
   b) balance at the beginning of the month
   c) total of all items charged by the customer this month
   d) total of all credits applied to the customer's account this month
   e) allowed credit limit.

   The app should input all these facts as integers, calculate the new balance (= *beginning balance +charges – credits*), display the new balance and determine whether the new balance exceeds the customer's credit limit. For those customers whose credit limit is exceeded, the app should display the message "Credit limit exceeded". Use sentinel-controlled repetition to obtain the data for each account**.(10mks)**