**C# Program:**

1. **What data type is each of the following?**

A picture containing text

Description automatically generated

1. **Write (and evaluate) C# expressions that answer these questions:**

Text

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1. **Implement function triangleArea(a,b,c) that takes as input the lengths of the 3 sides of a triangle and returns the area of the triangle. By Heron's formula, the area of a triangle with side lengths a, b, and c is s(s - a)(s -b)(s -c) , where s = (a+b+c)/2**.

A screenshot of a computer

Description automatically generated with medium confidence

1. **Write a program in C# Sharp to separate odd and even integers in separate arrays.**

Text

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1. **A) Write a function inside(x,y,x1,y1,x2,y2) that returns True or False depending on whether the point (x,y) lies in the rectangle with lower left corner (x1,y1) and upper right corner (x2,y2)**

Text

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**B) Use function inside() from part a. to write an expression that tests whether the point (1,1) lies in both of the following rectangles: one with lower left corner (0.3, 0.5) and upper right corner (1.1, 0.7) and the other with lower left corner (0.5, 0.2) and upper right corner (1.1, 2)**

A screenshot of a computer

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**Python Program:**

1. **You can turn a word into pig-Latin using the following two rules (simplified): • If the word starts with a consonant, move that letter to the end and append 'ay'. For example, 'happy' becomes 'appyhay' and 'pencil' becomes 'encilpay'. • If the word starts with a vowel, simply append 'way' to the end of the word. For example, 'enter' becomes 'enterway' and 'other' becomes 'otherway' . For our purposes, there are 5 vowels: a, e, i, o, u (so we count y as a consonant). Write a function pig() that takes a word (i.e., a string) as input and returns its pig Latin form. Your function should still work if the input word contains upper case characters. Your output should always be lower case however.**

Graphical user interface, text, application

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Text

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1. **File bloodtype1.txt records blood-types of patients (A, B, AB, O or OO) at a clinic. Write a function bldcount() that reads the file with name name and reports (i.e., prints) how many patients there are in each blood type.**

Text

Description automatically generated

1. **Write a function curconv() that takes as input: 1. a currency represented using a string (e.g., 'JPY' for the Japanese Yen or 'EUR' for the Euro) 2. an amount and then converts and returns the amount in US dollars.**

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application

Description automatically generated

1. **Each of the following will cause an exception (an error). Identify what type of exception each will cause**

Text, application

Description automatically generated

1. **Encryption is the process of hiding the meaning of a text by substituting letters in the message with other letters, according to some system. If the process is successful, no one but the intended recipient can understand the encrypted message. Cryptanalysis refers to attempts to undo the encryption, even if some details of the encryption are unknown (for example, if an encrypted message has been intercepted). The first step of cryptanalysis is often to build up a table of letter frequencies in the encrypted text. Assume that the string letters is already defined as 'abcdefghijklmnopqrstuvwxyz'. Write a function called frequencies() that takes a string as its only parameter, and returns a list of integers, showing the number of times each character appears in the text. Your function may ignore any characters that are not in letters.**

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application

Description automatically generated