S Wood

Notre Dame Catholic Sixth Form College | Computer Science Dept.

A-Level Computer Science

Year 1 – Programming Challenges

Coding Challenges – **Volume 2**

Name:

Class:

**Coding Challenges – Volume TWO**

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# Program 1 – Removing letters from strings.

Write a program that removes the first and last characters from a string.

E.g. “Hello” 🡪 “ell”

Program Code goes here…

# Program 2 – The Farm Problem.

Write a program that will calculate how many legs exist on a farm where you have chickens (2 legs), cows (4 legs), pigs (4 legs) and farm workers (2 legs) on your farm. The user should enter how many of each they have.

Return the total number of legs on your farm.

Program Code goes here…

# Program 3 – Odd or Even input?

Write a program to take a number input and outputs "even" for even numbers and "odd" for odd numbers.

Program Code goes here…

# Program 4 – Multiple of ‘X’

Write a program that takes two integer inputs and returns true if the first number is divisible by the second, otherwise return false.

Program Code goes here…

# Program 5 – Area of a Triangle

Write a program that takes the base and height of a triangle and return its area.

Program Code goes here…

# Program 6 – Check String for spaces

Write a program that returns true if a string input contains any spaces.

Program Code goes here…

# Program 7 – Piece of Cake / Slice of Pie

Write a program that determines whether or not it's possible to split a cake/pie fairly given these three parameters/inputs:

* Total number of slices.
* Number of recipients.
* How many slices each person gets.

Program Code goes here…

# Program 8 – Missing Angle

Write a program to determine the missing angle in a triangle.

You are given 2 out of 3 of the angles in a triangle, in degrees.

The program should classify the missing angle as either "acute", "right", or "obtuse" based on its degrees.

* An acute angle is one smaller than 90 degrees.
* A right angle is one that is exactly 90 degrees.
* An obtuse angle is one greater than 90 degrees (but smaller than 180 degrees).

For example: (31, 20) should return "obtuse", since the missing angle would be 129 degrees, which makes it obtuse.

Program Code goes here…

# Program 9 – Biggest/Smallest number finder

Write a program to find the largest and lowest values from three integer values that the user inputs.

**Example:**

* Input first integer: 15
* Input second integer: 25
* Input third integer: 30

Output:

* Largest of three: 30
* Lowest of three: 15

Program Code goes here…

# Program 10 – Word Count.

Write a program that takes a string and outputs the word count. The string will be a sentence input by the user.

E.g. “This should be easy enough for you.” 🡪 7

“This one is shorter.” 🡪 4

Program Code goes here…

# Program 11 – Reverse the case

Write a program to reverse the case on a given string. All lower-cased letters should be upper-cased, and vice versa.

**Examples:**

* "Happy Birthday" 🡪 "hAPPY bIRTHDAY"
* "MANY THANKS" 🡪 "many thanks"
* "sPoNtAnEoUs" 🡪 "SpOnTaNeOuS".

Program Code goes here…

# Program 12 – Vowel Replacer

Write a program that replaces all the vowels in a string with a specified character. The program will take the string input first, followed by the character to replace all vowels.

**Examples:**

* "the aardvark", "#" 🡪 "th# ##rdv#rk"
* "minnie mouse", "?" 🡪 "m?nn?? m??s?"
* "shakespeare", "\*" 🡪 "sh\*k\*sp\*\*r\*"

**Notes**

All characters will be in lower case.

Program Code goes here…

# Program 13 – Hacker Speak

Write a program that takes a string as an argument and returns a coded (h4ck3r 5p34k) version of the string.

**Examples:**

* "javascript is cool" 🡪 "j4v45cr1pt 15 c00l"
* "programming is fun" 🡪 "pr0gr4mm1ng 15 fun"
* "become a coder" 🡪 "b3c0m3 4 c0d3r"

**Notes:**

In order to work properly, the function should replace:

"a" with 4, "e" with 3, "i" with 1, "o" with 0, and "s" with 5.

Program Code goes here…