1. A student buys various books at the start of the semester from a bookshop. Write pseudocode for a program which takes the total amount spent on books and the total number of books as input and outputs the average cost per book.
2. Write pseudocode for a program which takes a year as input (e.g. 2014) and determines whether or not it is a leap year. A leap year is a multiple of 4, and if it is a multiple of 100, it must also be a multiple of 400.
3. Write pseudocode for a program which takes 3 integer values, a b c, as input and prints their sum. However, if one of the values is the same as another of the values, it does not count towards the sum.
4. When squirrels get together for a party, they like to have nuts. A squirrel party is successful when the number of nuts is between 40 and 60, inclusive. Unless it is the weekend, in which case there is no upper bound on the number of nus. Write pseudocode of a program which inputs the number of nuts consumed at a party, and prints “True” if the party with the given values is successful, or “False” otherwise.
5. Write pseudo code that will perform the following.
   1. Read in 5 separate numbers.
   2. Calculate the average of the five numbers.
   3. Find the smallest (minimum) and largest (maximum) of the five entered numbers.
   4. Write out the results found from steps b and c with a message describing what they are.
6. Write pseudo code that reads in three numbers and writes them all in sorted order.
7. You are driving a little too fast, and a police officer stops you. Write pseudocode to compute the result, encoded as an integer value: 0=no ticket, 1=small ticket, 2=big ticket. If speed is 60 or less, the result is 0. If speed is between 61 and 80 inclusive, the result is 1. If speed is 81 or more, the result is 2. Unless it is your birthday -- on that day, your speed can be 5 higher in all cases.
8. Write pseudocode for a program that prints the numbers from 1 to 100. But for multiples of three print “Fizz” instead of the number and for the multiples of five print “Buzz”. For numbers which are multiples of both three and five print “FizzBuzz”.

**Iterations**

1. Write a loop to print this *fencepost*pattern. Such *fencepost* loops can be created by placing one *post* (i.e. |) outside your loop, and then alternating between *wires* (i.e. ==) and *posts* inside the loop.

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| |==|==|==|==| |

1. Write pseudocode for a program that takes an integer and uses a fencepost loop to print the factors of that number, separated by the word "and". For example, for the number 24, it should print the following output.

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| --- |
| 1 and 2 and 3 and 4 and 6 and 8 and 12 and 24 |

1. Write pseudocode for a program which repeatedly reads integers from the user, stopping only when the user enters -1, and returns the largest value input.
2. write a program that calculates the sum of numbers entered by a user one at a time. The program terminates when user enters -1.
3. Write pseudcode for a program that calculates the area of simple shapes. The Shape given as input can be circle, square, or right triangle.
4. Extend the previous program such that the users can calculate the area (of the 3 specified shapes) as many times as they want.
5. Write PC that takes in a +ve number N and prints the square of size N composed of '\*'.
6. Write PC that takes in a +ve number N and determines if it is a prime or not.
7. Q4. can be calculated from the infinite series given below:

Write a pseudo code that prints the value of after the first 100 terms, 200 terms and 300 terms. Write one pseudo code that prints all three values. Don’t write 3 different codes.

1. Write a program that takes in a +ve integer and prints its break up in terms of units, tens, hundreds etc. The number is not longer than 4 digits.

Input 2000 Output: 0 units, 0 tens, 0 hundreds, 2 thousands

Input 173 Output: 3 units, 7 tens, 1 hundreds