COMP281 Assignment 1

This report is briefly talking about the solutions of problem 1014, 1025, 1026, 1030 and 1060.

The problem 1026 is aimed at deleting a specific character from a string and output the modified string. There are three stages for solving this problem. First, the array with size of 100 is created for storing the string and use the "scanf" to get the input from the user. Secondly, rewriting the array through "for" loop. If the element in array is same as the character that should be deleted, this element will be rewrite to the array as null. The other elements that is different from the character will be coped to the array in order. Finally, output the new array.

The problem 1014 is to calculate the area and circumference of multiple circles which radius difference of these round is 1. The variable r is equal to r1 and the value of r increase 1 for each loop. Using "for" loop to add the result of every circles. The "#define" is used to set the PI to 3.14. At last, the format "%.3f" is used to print as floating point which have 3 characters after decimal point.

The problem 1025 is to output the greatest common divisor and least common multiple of two positive integers. According to the formula of greatest common divisor and smallest common multiple from Wikipedia, two definitions for computing gcd and lmc can be created.
For two positive integers,
Gcd(a, a)= a;
Gcd(a, b)=gcd(a-b, b), if a>b;
Gcd(a, b)=gcd(a, b-a), if b>a;
Lcm(a, b)= |a*b|/ gcd(a, b);
Therefore, using if-else if-else command and recursion method to compute the great common divisor and get the result of least common multiple based on the value of gcd(a, b).

The problem 1060 is to print the list with all odd numbers in their corresponding place in the input and the even number sorted into ascending order. Two functional method isEven and bubbleSort are used to solve this problem. The isEven method is used to distinguish the odd or even. The bubbleSort nested a "for" loop into another "for" loop. The sort method will skip the odd number and compare the value of two even number and change the order of two integers into ascending order. At last, printing out the new evenly sorted list.

The problem 1030 is output the n-th digit after the decimal point of a/b. The variable a, b, n are three positive integers. The method called division (int a, int b, int n) is used to compute n-th integer. Based on the principle of long division, the dividend should multiply by ten if the dividend is smaller than divisor. Therefore, using the if-else command to distinguish two cases. if the dividend is larger than divisor, return division (a%b, b, n). For the method "division", using a "for" loop to do n-1 times modulo (the reminder divided by b). After the last loop is done, using the reminder*10/b to get the quotient which is the n-th integer.