PROG621 2020 1 Practical 1

1. **Sum of Digits**
   Write a program that reads in a 3-digit integer and adds all the digits in the integer.do not use built in methods. Only use operators *, /, +, -. For example, if the integer is 932, the sum of digits is 9 + 3 + 2 = 14.

2. **Simple Ifs**

   Train tickets are charged as follows: If a person buys seven or more tickets, they cost R10.75 each, otherwise they cost R15 each. If a person buys 14 or more tickets, they get a discount of 10% on the total price. Write a program that calculates a customer's bill given the number of tickets they wish to purchase.

3. **Valid Dates**
   Write a program that inputs a date (Day, Month, Year - all integers) and determines if the date is valid. For e.g. 29 Feb is valid only if the year is a leap year and some months have 30 days and others have 31. A year is leap if it is a (multiple of 400) OR (a multiple of 4 AND NOT a multiple of 100).
4. **Leap Years**
   Write a program that displays all the leap years in the 21st century i.e. (from 2001 to 2100).

5. **Reverse a number**
   Write a program that inputs an integer in the range 0 to 999 (inclusive) and outputs the reverse of the number. Do not use loops or strings. Only use operators *, /, +, -.

6. **South African Lottery**
   Write a C++ program to ask a user to input 6 lottery numbers. These numbers should be between 1 and 52 (inclusive). There should be no duplicates. store these numbers in an array. 'for' loops usage is allowed in your solution. Neatly output the lottery numbers