Lab 7

Task 1

If you go on a wonderful holiday leaving on **Wednesday** and you return home after 10 nights the day will be **Saturday**. Write a C++ program that asks for the starting day number (your leaving day for the holiday), and the length of your stay then the program will tell you the weekday you will return on.

Task 2

Write a C program to read temperature in centigrade and display a suitable message according to the temperature state below (You are not allowed to use any logical operator)

Temp < 0 then Freezing weather

Temp 0-10 then Very Cold weather

Temp 10-20 then Cold weather

Temp 20-30 then Normal in Temp

Temp 30-40 then Its Hot

Temp >=40 then Its Very Hot

Task 3

Write a program that swaps number using bitwise XOR (^) operator

int a = 10;

int b = 20;

After the operation, *a* should have 20 and *b* 10.

Hint: the operation completes in three statements.

Task 4

Write a C++ program to swap two numbers without using a temporary variable, only using bitwise XOR.

Task 5

Write a program which takes a 9-digit number input from user, converts it into its reverse and then display one of the following statements

- Original number is x steps bigger (where x is the difference between the two)
- Reversed number is x steps bigger
- Both numbers are equal; hence it is a palindrome.

Example

Enter a 9-digit number : 367548912

Reverse number: 219845763

Original number is 147,703,149 steps bigger

Enter a 9-digit number : 367548

It is not a 9-digit number. Please enter the correct number.

Enter a 9-digit number : 259757952

Reverse number: 259757952

Both numbers are equal; hence it is a palindrome

Task 6

Write a program that will ask the user to enter a digit character (i.e. '0' or '1' …. or '9'). If a user enters a non-digit character then the program should display a message to re-enter correct input. If a user enters a correct character (i.e. a digit character) then your program should convert that character to a same digit but in integer type. Do this for five inputs. Finally, add all digits and display their sum. Do not use any library function or loops.

Task 7

Write a program to check whether a specified bit (take input) of a number is ON or OFF
For example 12 has binary (00001100), and the bit numbers 2 & 3 are ON. All other bits are OFF.

Task 8

Write a C++ program to check if a number is even or odd using bitwise XOR.