SSN COLLEGE OF ENGINEERING
DEPARTMENT OF CSE

C PROGRAMMING LABORATORY (CS8261)

Ex. No. 3 Programs using looping constructs

1) Check whether a given number is Armstrong or not.
2) Design a calculator to perform the operations namely addition, subtraction, multiplication, division and square of a number. (Hint: Do as menu driven program)
3) Read the numbers until -1 is encountered. Also count the positive, negative and zeros entered by the user.
4) Test whether the given number is a power of 2.
5) Write a program that makes multiple transactions, define the transaction as '1' for deposit and '2' for withdrawal. Update the balance when you deposit or withdraw the amount. If the withdrawal mount is more than the available balance, give the user three chances For each transaction, display the balance amount except for negative balance. (Use while
statement)
6) Check whether a given number is STRONG number or not. (Hint: STRONG number: sum of the factorial of the digits of the given number = number itself)
7) Print the following patterns: (Use for statement)

```
1                          1
2 3                      1 2 1
4 5 6                  1 2 3 2 1
7 8 9 10             1 2 3 4 3 2 1
11 12 13 14 15     1 2 3 4 5 4 3 2 1
16 17 18 19 20 21 1 2 3 4 5 6 5 4 3 2 1
```

8) Calculate the parking charges of a vehicle. Enter the type of vehicle (as a character for eg. B for Bus) and number of hours. Read the hours and minutes when the vehicle enters the parking lot and also when it leaves. Calculate the difference between the two timings to calculate the number of hours and minutes for which the vehicle was parked. Finally calculate the parking charges based on the following rules and display the result.

	Rate till 3 hours	**Rate after 3 hours**
• Truck/Bus	Rs. 20/hour	Rs. 30/hour
• Car:	Rs. 10/hour	Rs. 20/hour
• Scooter/Cycle/Motor Cycle	Rs. 5/hour	Rs. 10/hour