C-Programming Lab Sheet
I Year / I Part
Faculty: Computer/Electrical

Labsheet#5

Objectives:

- *To familiarize with different types of looping statement such as for, while, do…while, nesting loop.*

1. WAP to read integers **n1 and n2 (such that n1 < n2)** and display all **even numbers** between those two numbers.

2. WAP that reads an integer value for **n** then **sums the integers** from **n to 2n** if **n** is **non-negative**, or from **2n** to **n** if n is **negative**. Display the **sum**.

3. WAP that will generate every third integer beginning with **i=2** and continuing for all integers that are **less than 100**. Calculate the **sum** of these numbers that are exactly **divisible by 7**.

4. Write a computer program to display a **table of numbers**, its **square value** and its **cube values** from **1 to n-1**, where n is any number typed by user at the terminal.

5. WAP to find the sum of the following series,
y = $\sum \frac{1}{n^2}$ up to n term. **[5]**
$e^x = 1 + \frac{x^1}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} \ldots \frac{x^n}{n!}$

6. WAP to compute the **sine series.**
(hint: $\boldsymbol{x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots \frac{x^n}{n!}}$**)** up to n terms.

7. WAP to compute the **cosine series.**
(hint: $\boldsymbol{1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \cdots \frac{x^n}{n!}}$**)** up to n terms.

8. WAP to enter a number and print its reverse.
9. WAP to calculate **sum of digits** of an integer number.
10. WAP to check whether a given number is palindrome or not.
11. WAP to find sum of **last digit** and **first digit** of a given number.
12. WAP to check whether a given number is **Armstrong number or not.**
13. WAP to find **binary equivalent** of a decimal integer number.
14. WAP to read integer numbers from the users and find their sum until the user types ctrl+Z keys on the keyboard. Display the sum.

Patterns

Nested for loop

```
5 4 3 2 1
5 4 3 2
5 4 3
5 4
5
```

```
5
5 4
5 4 3
5 4 3 2
5 4 3 2 1
```

```
Programming
rogrammin
ogrammi
gramm
ram
a
```

```
k
wk
owk
howk
chowk
lchowk
ulchowk
pulchowk
```

```
P
PU
PUL
PULC
PULCH
PULCHO
PULCHOW
PULCHOWK
```

```
P
PU
PuL
PULC
PuLcH
PULCHO
PuLcHoW
PULCHOWK
```

```
P
Pu
PuL
PULC
PuLcH
PULCHO
puLcHoW
PULCHOWK
```

```
    *
   * * *
  * * * * *
 * * * * * * *
* * * * * * * * *
```

```
    1
   2 1 2
  3 2 1 2 3
 4 3 2 1 2 3 4
5 4 3 2 1 2 3 4 5
```

```
    1
   1 0 1
  1 0 1 0 1
 1 0 1 0 1 0 1
1 0 1 0 1 0 1 0 1
```

```
*
* *
* * *
* * * *
* * * * *
*
* *
* * *
* * * *
* * * * *
```

```
    *
   * * *
  * * * * *
 * * * * * * *
* * * * * * * * *
 * * * * * * *
  * * * * *
   * * * *
    * * *
     * *
      *
```

```
    *
   * * *
  * * * * *
 *  *  *  *
*   *   *   *
*    *    *
```

```
    N
   e e e
  p p p p p
 a a a a a a a
L L L L L L L L L
```

```
*
* *
* * *
* * * *
* * * * *
|
|
|
|
|
```