S.CEON LEO STANLY

1415013-ECE

LC2-LOOP BASED PROBLEMS

**Activity 1:**

Design an algorithm to count the number of digits in a given number.

Solution:

Step 1:get the number and store it in “A”

Step 2:create a variable “count”

Step 3:

* when A is not zero(a!=0)
* divide A by 10 to eliminate the last digit
* increase count by 1
* repeat

Step 4:display count

**Activity 2:**

Design an algorithm to find the sum of all the digits in a given number.

Solution:

Step 1:get the number and store in “num”

Step 2:create a variable “sum” and initialize to 0

Step 3:

* while num is greater than 0(num>0)
* do num mod 10 and add it to sum (sum+=num%10)
* divide num by 10 (num=num/10)
* repeat

Step 4:display sum

**Activity 3:**

Design an algorithm which accepts a decimal integer and then displays its corresponding binary representation.

Solution :

Step 1:create variables decimal,r,binary and initialize them to zero

Step 2: create variables i=1

Step 3:get the decimal value and store it in decimal

Step 4:

* while decimal!=0
* do r=decimal%2
* do binary+=r\*i
* make the value i\*=10
* repeat

step 5:diplay binary

**Activity 5:**

Design an algorithm which accepts a number from the user and displays its smallest exact divisor other than one.

Step 1:get the number and store it in “num”

Step 2:if num%==0 then print “smallest exact divisor is 2”

Step 3:else use for loop

* create a temporary variable tmp= num%i
* increment i(++i)
* when tmp==0 break the process

step 4:print tmp as smallest divisor