

## Logic Building Assignment : 41

**Consider below code snippet to solve given problem statements.**

```
#define TRUE 1
#define FALSE 0

typedef int BOOL;

struct node
{
    int Data;
    node *Next;
};

typedef struct node NODE;
typedef struct node* PNODE;
typedef struct node** PPNODE;

void InsertFirst(PPNODE Head , int no )
{
    PNODE newn = NULL;

    newn = (PNODE)malloc(sizeof(NODE));

    newn->Next = NULL;
    newn->Data = no;

    if (*Head == NULL)
    {
        *Head = newn;
    }
    else
    {
        newn -> Next = *Head;
        *Head = newn;
    }
}

int main()
{
    PNODE First = NULL;

    InsertFirst(&First, 101);
    InsertFirst(&First, 51);
    InsertFirst(&First, 21);
    InsertFirst(&First, 11);

    // Call all functions for below problem statements.

    return 0;
```

}

**1. Write a program which reverse each element of singly linked list.**

Function Prototype :

```
void Reverse( PNODE Head);
```

Input linked list : |11|->|28|->|17|->|41|->|6|->|89|

Output : |11|->|82|->|71|->|14|->|6|->|98|

**2. Write a program which display all palindrome elements of singly linked list.**

Function Prototype :

```
void DisplayPallindrome( PNODE Head);
```

Input linked list : |11|->|28|->|17|->|414|->|6|->|89|

Output : 11 6 414

**3. Write a program which display product of all digits of all element from singly linear linked list. (Don't consider 0)**

Function Prototype :

```
void DisplayProduct( PNODE Head);
```

Input linked list : |11|->|20|->|32|->|41|

Output : 1 2 6 4

**4. Write a program which display smallest digits of all element from singly linear linked list.**

Function Prototype :

```
void DisplaySmall( PNODE Head);
```

Input linked list : |11|->|250|->|532|->|415|

Output : 1 0 2 1

**5. Write a program which display largest digits of all element from singly linear linked list.**

Function Prototype :

```
void DisplayLarge( PNODE Head);
```

Input linked list : |11|->|250|->|532|->|419|

Output :            1        5        5        9

