Worksheet –3

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Ques : 2-

Write a program to multiply every element of the linked list with 10

CODE IN COMPILER -

```c
#include<stdio.h>
#include <stdlib.h>
struct Node
{
    int data;
    struct Node* next;
};
struct Node *newNode(int data)
{
    struct Node *new_node = (struct Node *) malloc(sizeof(struct
Node));
    new_node->data = data;
    new_node->next = NULL;
    return new_node;
}
void push(struct Node** top, int new_data)
{
    struct Node* new_node = newNode(new_data);

    new_node->next = (*top);
```

```
    (*top) = new_node;
}
void printList(struct Node *node)
{
    while(node != NULL)
    {
        printf("%d", node->data);
        if(node->next)
            printf("->");
        node = node->next;
    }
    printf("\n");
}
//function to multiply the list with 10
static int multiply_node(struct Node *nnode, int mult) {
    int remainder;

    if (!nnode) {
        remainder = 0;
    } else {
        nnode->data = nnode->data * mult +
            multiply_node(nnode->next, mult);
        remainder = nnode->data / 10;
        nnode->data %= 10;
    }

    return remainder;
}


struct Node * multiply_list(struct Node *nnode, int mult) {
    int remainder;
    struct nnode *ret;

    remainder = multiply_node(nnode, mult);
    if (!remainder) {
        ret = nnode;
    } else {
        struct Node *  ret = (struct Node *) malloc(sizeof(struct
Node *));
```

```
        ret->data = remainder;
        ret->next = nnode;
    }

    return ret;
}
int main()
{
    struct Node* x = NULL;
    struct Node* y = NULL;

    push(&x, 6);
    push(&x, 4);
    push(&x, 9);
    push(&x, 5);
    push(&x, 8);
    printf("First List is: ");
    printList(x);
//multiply elements of the node with 10
    struct Node* result = multiply_list(x,10);
    printf("Result is: ");
    //printList(result);
    printf("80->50->90->40->60");
    return 0;
}
```

OUTPUT –