Program 5 (Singly Linked List Insertion)

```
struct node {
    int data;
    struct nod *next;
};
struct node *head = NULL;

int length() {
    struct node* temp = head;
    int cnt = 0;

    while (temp -> next != NULL) {
        cnt++;
        temp = temp -> next;
    }
    return cnt;
}
void insert_at_head {
    if (head == NULL) {
        insert_at_end ();
        return;
    }
    struct node *newnode;
    int ele;
    printf("Enter data : ");
    scanf(" %d ", &ele);
    newnode = (struct node*) malloc
        (sizeof(struct node));
```

```
        new node -> data = ele;
        newnode -> next = head;
        head = newnode;
        printf("Element is inserted");
}

void insert_at_end() {
        struct node *new node, *temp;
        int item;
        new node = (struct node*) malloc
                (sizeof(struct node));
        printf("Enter data : ");
        scanf("%d", &item);

        newnode -> data = item;
        if (head == NULL) {
                new node -> next = NULL;
                head = new node;
                printf("Node Created \n");
        }
        else {
        temp = head;
        while( temp -> next != NULL) {
                temp = temp -> next;
        }
        temp -> next = newnode;
        newnode -> next = NULL;
        printf("Node created at end\n");
        }
}
```

```
void insert_any_pos(int pos) {
    if (head == NULL) {
        insert_at_first();
        return;
    }
    if (pos > length()) {
        insert_at_end();
        return;
    }

struct node *newnode, *temp;
temp = head;
int ele;
printf("Enter data : ");
scanf("%d", &ele);
int jump = 1;
while (jump <= pos - 1) {
    temp = temp->next;
    jump++;
}
newnode = (struct node *)malloc
                (sizeof(struct node));
newnode->data = ele;
newnode->next = temp->next;
temp->next = newnode;
printf("Node Created");
}
```