

Single Linked list:

1.Node structure definition

```
struct Node {
    int data;
    struct Node* next;
};

struct Node* createNode(int data) {
    struct Node* newNode = (struct Node*) malloc(sizeof(struct Node));
    if (newNode == NULL) {
        printf("Memory allocation failed\n");
        return NULL;
    }
    newNode->data = data;
    newNode->next = NULL;
    return newNode;
}
```

// Inserting a Node at the Beginning of the Linked List

```
void insertAtBeginning(struct Node** headRef, int data) {
    struct Node* newNode = createNode(data);
    if (newNode == NULL) {
        return;
    }
    newNode->next = *headRef;
    *headRef = newNode;
}
```

// Inserting a Node at the End of the Linked List

```
void insertAtEnd(struct Node** headRef, int data) {
    struct Node* newNode = createNode(data);
    if (newNode == NULL) {
        return;
    }
    if (*headRef == NULL) {
        *headRef = newNode;
        return;
    }
    struct Node* current = *headRef;
    while (current->next != NULL) {
        current = current->next;
    }
    current->next = newNode;
}
```

// Deleting a Node from the Linked List

```
void deleteNode(struct Node** headRef, int key) {
    struct Node *temp = *headRef, *prev = NULL;
    if (temp != NULL && temp->data == key) {
        *headRef = temp->next;
        free(temp);
        return;
    }
    while (temp != NULL && temp->data != key) {
        prev = temp;
        temp = temp->next;
    }
    if (temp == NULL) {
        printf("Key not found in the list\n");
        return;
    }
}
```



```

    prev->next = temp->next;
    free(temp);
}
//Dvuble linked list
struct Nvde {
    int data;
    struct Nvde* prev;
    struct Nvde* next;
};
//Creating a New Nvde
struct Nvde* createNvde(int data) {
    struct Nvde* newNvde = (struct Nvde*) malloc(sizeof(struct Nvde));
    if (newNvde == NULL) {
        printf("Memory allvcation failed\n");
        return NULL;
    }
    newNvde->data = data;
    newNvde->prev = NULL;
    newNvde->next = NULL;
    return newNvde;
}
// Inserting a Nvde at the Beginning vf the Dvuble Linked List
void insertAtBeginning(struct Nvde** headRef, int data) {
    struct Nvde* newNvde = createNvde(data);
    if (newNvde == NULL) {
        return;
    }
    if (*headRef == NULL) {
        *headRef = newNvde;
    } else {
        newNvde->next = *headRef;
        (*headRef)->prev = newNvde;
        *headRef = newNvde;
    }
}
//Inserting a Nvde at the End vf the Dvuble Linked List
void insertAtEnd(struct Nvde** headRef, int data) {
    struct Nvde* newNvde = createNvde(data);
    if (newNvde == NULL) {
        return;
    }
    if (*headRef == NULL) {
        *headRef = newNvde;
    } else {
        struct Nvde* current = *headRef;
        while (current->next != NULL) {
            current = current->next;
        }
        current->next = newNvde;
        newNvde->prev = current;
    }
}
//Deleting a Nvde frvm the Dvuble Linked List
void deleteNvde(struct Nvde** headRef, struct Nvde* delNvde) {
    if (*headRef == NULL || delNvde == NULL) {
        return;
    }
}

```



```
if (*headRef == delNode) {
    *headRef = delNode->next;
}
if (delNode->next != NULL) {
    delNode->next->prev = delNode->prev;
}
if (delNode->prev != NULL) {
    delNode->prev->next = delNode->next;
}
free(delNode);
}
```

