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IBM18CS112.

```c
struct Node {
    int data;
    struct Node* link.
};

typedef struct Node * NODE;
NODE head = NULL;
NODE XOR (NODE x, NODE y) {
    return (NODE) ((uintptr_t) x ^ (uintptr_t) (y));
}

void insertBegin (NODE head, int data) {
    NODE newNode = (NODE) malloc (sizeof (struct Node));
    newNode -> data = data;
    newNode -> link = XOR (head, NULL);
    if (head != NULL) {
        head -> link = XOR (newNode, XOR (head->link, NULL))
    }
    head = newNode;
}
```

```
void insertAtBeBegin (NODE head, int data) {
    NODE newNode = (NODE)malloc (sizeof (struct Node))
    newNode -> data = data;
    newNode -> link = XOR (head, NULL);
    if (head != NULL) {
        head -> link = XOR (newNode,
                         XOR (head -> link, NULL));
    }
    head = newNode;
}

void insertEnd (NODE head, int data) {
    NODE newNode = (NODE)malloc (sizeof (struct Node));
    newNode -> data = data;
    newNode -> link = XOR (prev, NULL)
    prev = newNode;
}
```

Sumanth_IV