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IF 03-01

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OTH

Source code

```
#include <stdio.h>
#include <stdlib.h>

typedef struct Node {
    int data;
    struct Node* prev;
    struct Node* next;
} Node;

Node* createNode(int data) {
    Node* newNode = (Node*)malloc(sizeof(Node));
    newNode->data = data;
    newNode->prev = newNode;
    newNode->next = newNode;
    return newNode;
}

void insertEnd(Node** head, int data) {
    Node* newNode = createNode(data);
    if (*head == NULL) {
        *head = newNode;
    } else {
        Node* last = (*head)->prev;
        newNode->next = *head;
        (*head)->prev = newNode;
        newNode->prev = last;
        last->next = newNode;
    }
}

void sortList(Node** head) {
    if (*head == NULL || (*head)->next == *head) return;

    Node* current = *head;
    do {
        Node* nextNode = current->next;
        while (nextNode != *head) {
```

```

        if (current->data > nextNode->data) {
            int temp = current->data;
            current->data = nextNode->data;
            nextNode->data = temp;
        }
        nextNode = nextNode->next;
    }
    current = current->next;
} while (current->next != *head);
}

void displayList(Node* head) {
    if (head == NULL) {
        printf("List kosong.\n");
        return;
    }
    Node* temp = head;
    do {
        printf("Alamat: %p, Data: %d\n", temp, temp->data);
        temp = temp->next;
    } while (temp != head);
    printf("\n");
}

int main() {
    Node* head = NULL;
    int N, data;

    printf("Masukkan jumlah data: ");
    scanf("%d", &N);

    for (int i = 0; i < N; i++) {
        printf("Masukkan data ke-%d: ", i+1);
        scanf("%d", &data);
        insertEnd(&head, data);
    }

    printf("List sebelum pengurutan:\n");
    displayList(head);

    sortList(&head);

    printf("List setelah pengurutan:\n");
    displayList(head);

    return 0;
}

```

Output

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS D:\ASD> cd "d:\ASD\" ; if ($?) { gcc othprak.c -o othprak } ; if ($?) { .\othprak }
Masukkan jumlah data: 6
Masukkan data ke-1: 5 5 3 8 1 6
Masukkan data ke-2: Masukkan data ke-3: Masukkan data ke-4: Masukkan data ke-5: Masukkan data ke-6: List sebelum pengurutan:
Alamat: 006B1588, Data: 5
Alamat: 006B15F0, Data: 5
Alamat: 006B1608, Data: 3
Alamat: 006B3400, Data: 1
Alamat: 006B3418, Data: 6

List setelah pengurutan:
Alamat: 006B1588, Data: 1
Alamat: 006B15F0, Data: 3
Alamat: 006B1608, Data: 5
Alamat: 006B33E8, Data: 5
Alamat: 006B3400, Data: 6
Alamat: 006B3418, Data: 8

PS D:\ASD> cd "d:\ASD\" ; if ($?) { gcc othprak.c -o othprak } ; if ($?) { .\othprak }
Masukkan jumlah data: 3 31 2 123
Masukkan data ke-1: Masukkan data ke-2: Masukkan data ke-3: List sebelum pengurutan:
Alamat: 00A815B8, Data: 31
Alamat: 00A815F0, Data: 2
Alamat: 00A81608, Data: 123

List setelah pengurutan:
Alamat: 00A815B8, Data: 2
Alamat: 00A815F0, Data: 31
Alamat: 00A81608, Data: 123

PS D:\ASD> |
```

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