陳奕嘉 E94115011 資訊115

No
Date 2024/12/16

Program Design HW8

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

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

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

void append(Node** head, int data){
    Node* newNode = createNode(data);
    if (*head == NULL) {
        *head = newNode;
        return;
    }
    Node* temp = *head;
    while (temp->next != NULL) {
        temp = temp->next;
    }
    temp->next = newNode;
}

void splitList(Node* head, Node** oddList, Node** evenList) {
    while (head != NULL) {
        if (head->data %2 == 1) {
            append(oddList, head->data);
        }
        else {
            append(evenList, head->data);
        }
        head = head->next;
    }
}

void printList(Node* head) {
    while (head != NULL) {
        printf("%d ->", head->data);
        head = head->next;
    }
    printf("NULL\n");
}

int main() {
    Node* head = NULL;
    Node* oddList = NULL;
    Node* evenList = NULL;

    append(&head, 1);
    append(&head, 3);
    append(&head, 2);
    append(&head, 4);

    splitList(head, &oddList, &evenList);
    printf("Odd value list: ");
    printList(oddList);
```

```
    printf("Even value list: ");
    printList(evenlist);

    return 0;
}

// output:
// Odd value list: 1 -> 3 -> NULL
// Even value list: 2 -> 4 -> NULL
```