

29/1/2024

DOMS
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CONCATENATION:

```
void concatenate (struct node *a,  
                  struct node *b)
```

{

```
    if (a != NULL && b != NULL)
```

{

```
    if (a->next == NULL)
```

```
        a->next = b;
```

else

```
    concatenate (a->next, b);
```

}

else

{

printf ("Either a or b is NULL")

}

~~struct node * concat (struct node * start1,
 struct node * start2);~~

2

```
struct node * ptr;
```

```
if (start1 == NULL)
```

2

```
start1 = start2;
```

```
return start1;
```

3

```
if (start2 == NULL)
```

```
return start1;
```

```
ptr = start1;
```

```
while (ptr → link != NULL)
```

```
ptr = ptr → link;
```

```
ptr → link = start2;
```

```
return start1;
```

3

O/P:

Fist Linked List: 1 2 3

Second Linked List: 4 5

Concatenated linked list: 1 2 3 4 5

REVERSING

struct node * prev = NULL;

struct node * current = head;

struct node * next = NULL;

while (current != NULL)

{

next = current -> next;

current -> next = prev;

current = next;

3

* head -> ref = prev;

3

struct node * reverse (struct node * head){

O/P:

original linked list: 5 4 3 2 1

reversed linked list: 1 2 3 4 5

SORTING:

```
void insertion sort (struct node * head)
```

{

```
    struct node * sorted = NULL;
```

```
    struct node * current, head;
```

```
    while (current != NULL){
```

```
        struct node * next = current->next;
```

```
        sorted Insert (sorted, current);
```

```
        current = next;
```

}

```
head = sorted;
```

}

OIP:

Original linked list: 5 4 8 1 6

Sorted linked list: 1 4 5 6 8

⇒ STACK IMPLEMENTATION USING SINGLY LL

1 struct node * push (struct node * head, int value)

{

 struct Node * temp = (struct node *) malloc (sizeof (struct Node));

 temp → data = value;

 temp → next = head;

 head = temp;

 return head;

}

2 struct node * pop (struct node * head)

{

 if (head == NULL) {

 printf ("Stack is empty \n");

 return head;

}

```
struct node * temp = head;  
head = temp -> next;  
free (temp);  
return head;
```

3

void display (struct Node * head) {
~~Struct node * d = head;~~