1/1/2024

Singly linked list

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

struct Node {
    int data;
    struct Node* next;
};
void push(struct Node** head_ref, int new_data);
void append(struct Node** head_ref, int new_data);
void insertAfter(struct Node** prev_ref, int new_data);

struct Node* createNode(int value) {
    struct Node* newNode = (struct Node*)malloc(
    sizeof(struct Node));
    newnode->data = data;
    newnode->next = NULL;
    return newnode;
}
void insertatbeginning(struct Node** head, int data){
    struct Node* newnode = createnode(data);
    newNode->next = *head;
    *head = newnode;
}
```

```
void insertatBeginning (struct Node **head, int data)
{
struct Node* newnode = createNode(data);
newnode -> next = *head;
*head = newNode;
}
void insertatposition (struct Node **head, int data,
  if (position <= 0) {
    printf ("Invalid position. please enter a
    position great than 0\n");
    return;
  }
struct Node* newnode = createNode(data);
if (position == 1) {
  newNode -> next = *head;
  *head = newNode;
  return;
}
int main() {
  struct Node *head = NULL;
  int n, element;

  printf("Enter no of elements:");
  scanf("%d", &n);
```

```
for(int i=0; i<n; i++) {
    printf("Enter element %d:", i+1);
    scanf("%d", &element);
    insertAtEnd(&head, element);
}
int newData;
printf("Enter a new element at beginning:");
scanf("%d", &newData);
printf("Linked list after inserting at beginning :");
display(head);

int position;
printf("Enter the position to new element :");
scanf("%d", &position);
printf("insert into position:");
scanf("%d", &newData);
printf("Enter a new element to insert at the end");
scanf("%d", &newData);
display(head);
return 0;
}
```

Output:- Enter the number of elements :3

element 1 :24

element 2 : 76

element 3 : 34

Linked list : 24 → 76 → 74 → NULL

Enter a new element to insert at the beginning : 12

Enter the position to insert a new element : 12

Enter the new after insertion at end. : 12 → 55 → 24 → 26 → 74 → NULL