/*linked list random deletion and insertion by value*/

```
#include<stdio.h>
#include<stdlib.h>
struct node
{
	int data;
	struct node*link;
};
struct node*header;
struct node*create_ll(struct node*);
struct node*display(struct node*);
struct node*insert_any(struct node*);
struct node*delete_any(struct node*);
int main()
{
	int choice=0;
	while(choice!=5)
	{
		printf("**main menu**\n");
		printf("1.create list\n2.display the list\n3.insert at any position\n4.delete from any position\n5.exit\n");
		printf("enter your choice\n");
		scanf("%d",&choice);
		switch(choice)
		{
			case 1:header=create_ll(header);
			break;
			case 2:header=display(header);
			break;
			case 3:header=insert_any(header);
			break;
```

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                        case 4:delete_any(header);
                        break;
                        case 5:exit(0);
                        default:
                                printf("invalid choice\n");
                }
        }
}
struct node*create_ll(struct node*header)
{
        struct node*new_node,*ptr;
        int item;
        printf("enter -1 to end\n");
        printf("enter the data: \n");
        scanf("%d",&item);
        while(item!=-1)
        {
                new_node=(struct node*)malloc(sizeof(struct node*));
                new_node->data=item;
                if(header==NULL)       //list is empty
                {
                        new_node->link=NULL;
                        header=new_node;
                }
                else
                {
                        ptr=header;
                        while(ptr->link!=NULL)
                        {
                                ptr=ptr->link;
                   }
```

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                                        ptr->link=new_node;
                                        new_node->link=NULL;
                        }
                        printf("enter the data: \n");
                        scanf("%d",&item);
                }
                printf("link list is created\n");
                return header;
}
struct node*display(struct node*header)
{
                printf("the linked list is below\n");
                struct node*ptr;
                ptr=header;
                while(ptr!=NULL)        //list is not empty
                {
                        printf("%d\n",ptr->data);
                        ptr=ptr->link;
    }
    return header;
}
struct node*insert_any(struct node*header)
{
                struct node*new_node,*ptr;
                int val,item;
                if(header==NULL)
                {
                        printf("overflow:insertion not possible\n");      //memory bank returns NULL
                }
                else
                {
```
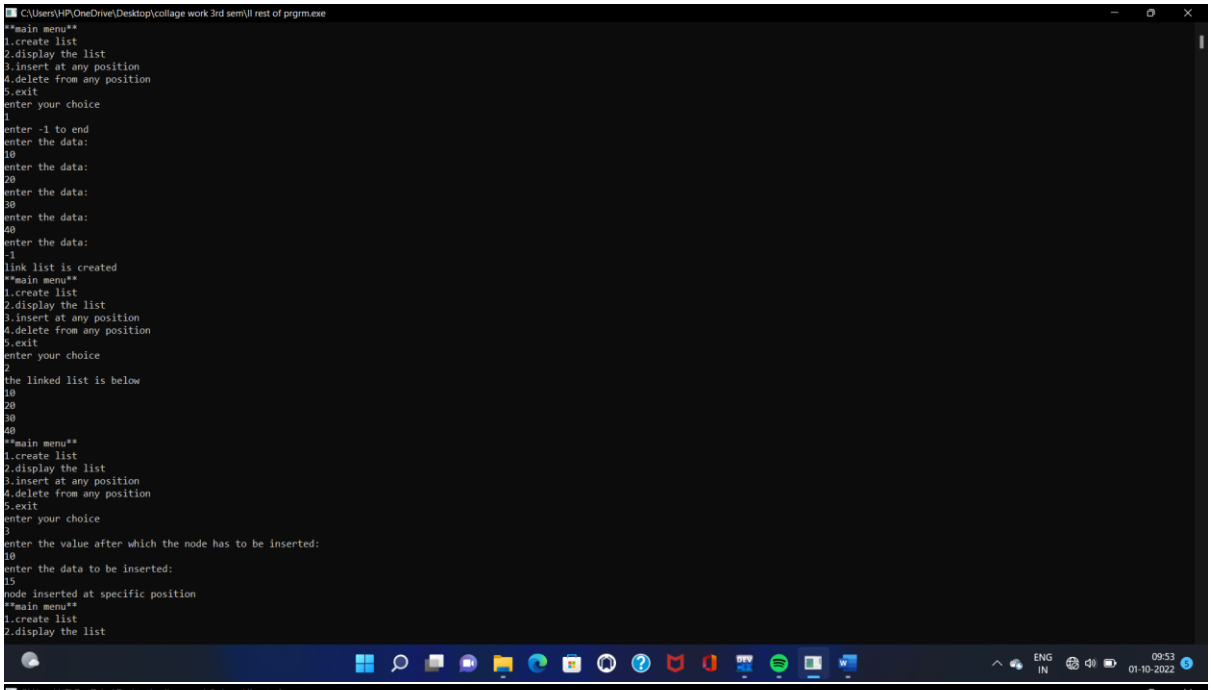
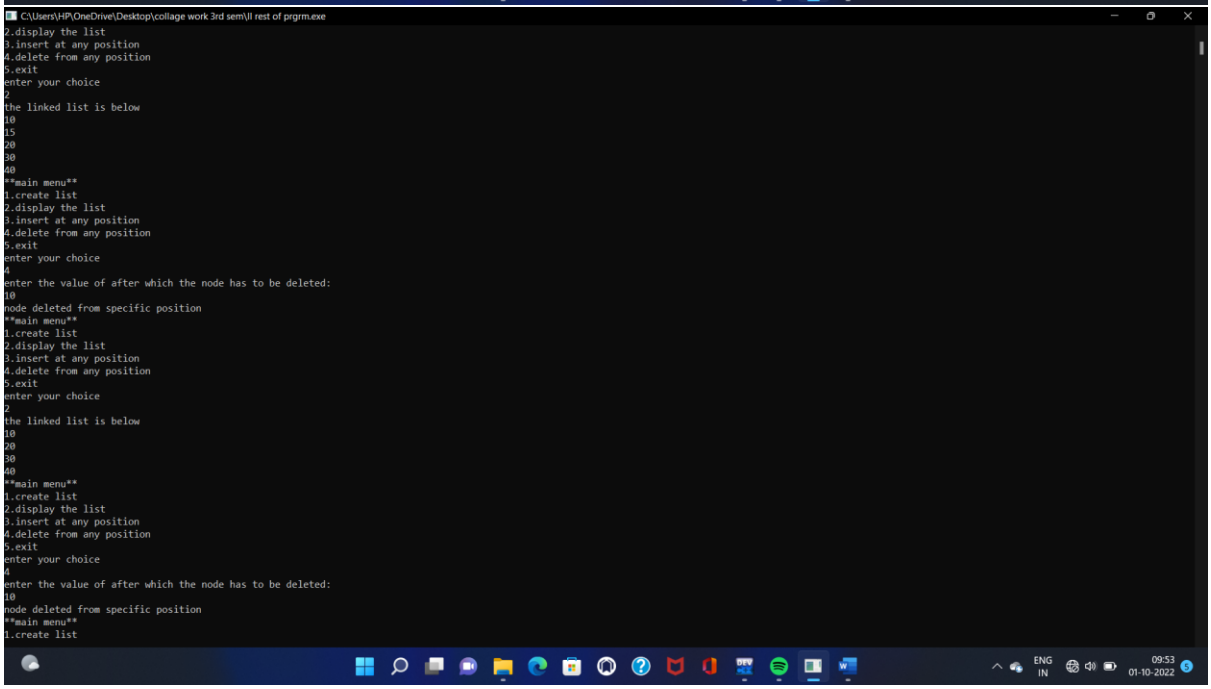
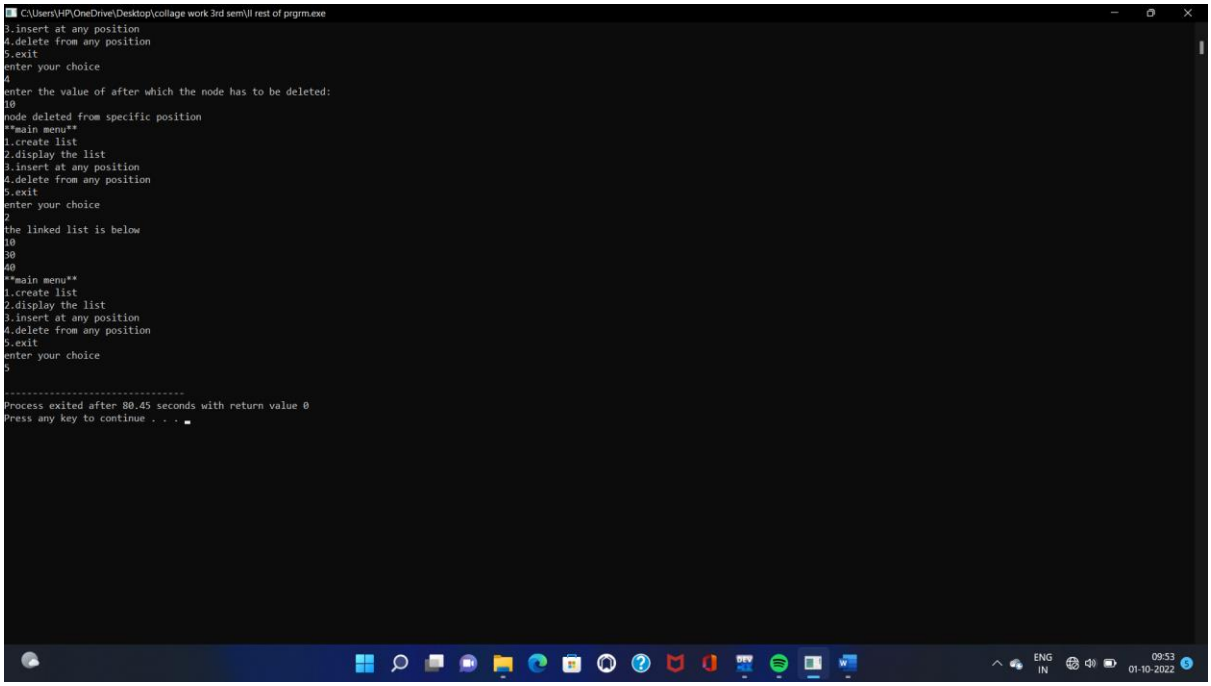

```
                printf("enter the value after which the node has to be inserted: \n");
            scanf("%d",&val);
            printf("enter the data to be inserted: \n");
            scanf("%d",&item);
                new_node=(struct node*)malloc(sizeof(struct node*));
                new_node->data=item;
                ptr=header;
                while(ptr->data!=val)
                {
                        ptr=ptr->link;
                }
                new_node->link=ptr->link;
                ptr->link=new_node;
                printf("node inserted at specific position\n");
                return header;
        }
}
struct node*delete_any(struct node*header)
{
        struct node*ptr,*ptr1;
        int val;
        if(header==NULL)
        {
                printf("deletion not possible\n");      //list is empty
        }
        else
        {
                printf("enter the value of after which the node has to be deleted: \n");
            scanf("%d",&val);
                ptr=header;
```

```
                while(ptr1->data!=val)          //when there is no ptr1,then its' data(NULL)
obviously not equal to val
            {
                ptr1=ptr;
                ptr=ptr->link;
            }
        ptr1->link=ptr->link;
        free(ptr);
        printf("node deleted from specific position\n");
        return header;
        }
}
```


C:\Users\HP\OneDrive\Desktop\collage work 3rd sem\ll rest of prgrm.exe
main menu
1.create list
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
1
enter -1 to end
enter the data:
10
enter the data:
20
enter the data:
30
enter the data:
40
enter the data:
-1
link list is created
main menu
1.create list
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
2
the linked list is below
10
20
30
40
main menu
1.create list
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
3
enter the value after which the node has to be inserted:
10
enter the data to be inserted:
15
node inserted at specific position
main menu
1.create list
2.display the list
ENG
IN
09:53
01-10-2022


C:\Users\HP\OneDrive\Desktop\collage work 3rd sem\ll rest of prgrm.exe
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
2
the linked list is below
10
15
20
30
40
main menu
1.create list
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
4
enter the value of after which the node has to be deleted:
10
node deleted from specific position
main menu
1.create list
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
2
the linked list is below
10
20
30
40
main menu
1.create list
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
4
enter the value of after which the node has to be deleted:
10
node deleted from specific position
main menu
1.create list
ENG
IN
09:53
01-10-2022


C:\Users\HP\OneDrive\Desktop\collage work 3rd sem\ll rest of prgrm.exe
3.insert at any position
4.delete from any position
5.exit
enter your choice
4
enter the value of after which the node has to be deleted:
10
node deleted from specific position
main menu
1.create list
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
2
the linked list is below
10
30
40
main menu
1.create list
2.display the list
3.insert at any position
4.delete from any position
5.exit
enter your choice
5
Process exited after 80.45 seconds with return value 0
Press any key to continue . . .
ENG
IN
09:53
01-10-2022