

Main.c

```
#include <stdio.h>
#include "ascii.h"
int main() {

    ASCII l;
    init_ASCII(&l);
    char ch;
    while(1) {
        printf("Enter character('0' to quit): ");
        ch = getchar();
        getchar();
        ASCII_of(&l, ch);
        printf("List after value function ASCII_of: \n");
        display_list(l);
        destroy_list(&l);
        printf("List after destroy function\n");
        display_list(l);
        if(ch == '0') {
            break;
        }
    }
    return 0;
}
```

ascii.c

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

void init_ASCII(ASCII *l) {

    l->front = NULL;
    l->rear = NULL;

    return;
}

int isListEmpty(ASCII l) {

    if(l.front) {
        return 0;
    }

    return 1;
}

void insert_at_beg(ASCII *l, int data) {
    node *nn;
```

```

nn = (node *)malloc(sizeof(node));

if(!nn) {
    return;
}
else {
    nn->data = data;
    nn->previous = NULL;
    nn->next = NULL;
}

if(isListEmpty(*l)) {
    l->front = nn;
    l->rear = nn;
}
else {
    l->front->previous = nn;
    nn->next = l->front;
    l->front = nn;
}

return;
}

void ASCII_of(ASCII *l, char ch) {

    int ascii_value = ch;

    while(ascii_value) {
        int digit = ascii_value % 10;
        insert_at_beg(l, digit);
        ascii_value /= 10;
    }

    return;
}

void display_list(ASCII l) {

    if(isListEmpty(l)) {
        printf("List is empty!\n");
        return;
    }

    node *p = l.front;
    printf("[");
    while(p) {
        printf("%d ", p->data);
        p = p->next;
    }
    printf("]\n");

    return;
}

```

```

}
void destroy_list(ASCII *l) {
    node *p;

    while(l->front) {
        p = l->front;
        l->front = l->front->next;
        free(p);
    }

    return;
}

```

ascii.h

```

typedef struct node {
    int data;
    struct node *next, *previous;
} node;

```

```

typedef struct ASCII {
    node *front, *rear;
} ASCII;

```

```

void init_ASCII(ASCII *l);
void ASCII_of(ASCII *l, char ch);
void display_list(ASCII l);
void destroy_list(ASCII *l);

```

OUTPUT

```
gcc -Wall -c main.c ascii.c ascii.h
```

```
[~/dsa/dsa/ascii_assignment]
```

```
krushna Ξ ∟ foss-lab - Ξ cc main.o ascii.o -o ascii
```

```
[~/dsa/dsa/ascii_assignment]
```

```
krushna Ξ ∟ foss-lab - Ξ ./ascii
```

```
Enter character('0' to quit): a
```

```
List after value function ASCII_of:
```

```
[9 7 ]
```

```
List after destroy function
```

```
List is empty!
```

```
Enter character('0' to quit): d
```

```
List after value function ASCII_of:
```

```
[1 0 0 ]
```

```
List after destroy function
```

```
List is empty!
```

```
Enter character('0' to quit): A
```

```
List after value function ASCII_of:
```

```
[6 5 ]
```

```
List after destroy function
```

```
List is empty!
```

```

Enter character('0' to quit): [
List after value function ASCII_of:
[9 1 ]
List after destroy function
List is empty!
Enter character('0' to quit): [
List after value function ASCII_of:
[9 1 ]
List after destroy function
List is empty!
Enter character('0' to quit): 0
List after value function ASCII_of:
[4 8 ]
List after destroy function
List is empty!

```

```

[~/dsa/dsa/ascii_assignment]
krushna ❏ ❏ foss-lab - ❏

```

```

krushna@krushna-Lenovo-V14-ILL:~/dsa/dsa/ascii_assignment
[~/dsa/dsa/ascii_assignment] moode.coep.org.in/moodle/mod/assign/view.php?id=46538&action=editsubmission
krushna ❏ ❏ foss-lab - ❏ gcc -Wall -c main.c ascii.c ascii.h
[~/dsa/dsa/ascii_assignment]
krushna ❏ ❏ foss-lab - ❏ cc main.o ascii.o -o ascii
[~/dsa/dsa/ascii_assignment]
krushna ❏ ❏ foss-lab - ❏ ./ascii
Enter character('0' to quit): a
List after value function ASCII_of:
[9 7 ]
List after destroy function
List is empty!
Enter character('0' to quit): d
List after value function ASCII_of:
[1 0 0 ]
List after destroy function
List is empty!
Enter character('0' to quit): A
List after value function ASCII_of:
[6 5 ]
List after destroy function
List is empty!
Enter character('0' to quit): [
List after value function ASCII_of:
[9 1 ]
List after destroy function
List is empty!
Enter character('0' to quit): [
List after value function ASCII_of:
[4 8 ]
List after destroy function
List is empty!
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```