

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

typedef struct Node {
    int digit;
    struct Node* next;
    struct Node* prev;
} Node;

typedef struct ASCII {
    Node* head;
    Node* tail;
} ASCII;

void init_ASCII(ASCII* list) {
    list->head = NULL;
    list->tail = NULL;
}

void ASCII_of(ASCII* list, char character) {
    int ascii_value = (int)character;

    Node* new_node;
    int divisor = 100; // Start from the hundreds place

    while (divisor > 0) {
        int digit = ascii_value / divisor;
        if (digit > 0 || (list->head != NULL)) { // Avoid leading zeros
            new_node = (Node*)malloc(sizeof(Node));
            new_node->digit = digit;
            new_node->next = NULL;
            if (list->head == NULL) {
                list->head = new_node;
                list->tail = new_node;
            } else {
                new_node->prev = list->tail;
                list->tail->next = new_node;
                list->tail = new_node;
            }
        }
        divisor /= 10;
    }
}
```

```
new_node->prev = list->tail;

if (list->tail) {
    list->tail->next = new_node;
} else {
    list->head = new_node;
}
list->tail = new_node;
}

ascii_value %= divisor;
divisor /= 10;
}

}
```

```
void traverse(const ASCII* list) {
    Node* current = list->head;
    while (current != NULL) {
        printf("%d ", current->digit);
        current = current->next;
    }
    printf("\n");
}
```

```
void destroy(ASCII* list) {
    Node* current = list->head;
    Node* next_node;

    while (current != NULL) {
        next_node = current->next;
        free(current);
        current = next_node;
    }
}
```

```
}

list->head = NULL;

list->tail = NULL;

}

int main() {

    ASCII L1;

    init_ASCII(&L1);

    char character = 'A';

    ASCII_of(&L1, character);

    printf("Digits in ASCII of '%c': ", character);

    traverse(&L1);

    destroy(&L1);

    printf("After destruction: ");

    traverse(&L1);

    return 0;

}
```

```
Digits in ASCII of 'c': 9 9
After destruction:
PS C:\Users\OM MUNDE\om c\project> ^C
PS C:\Users\OM MUNDE\om c\project>
PS C:\Users\OM MUNDE\om c\project> & 'c:\Users\OM MUNDE\.vscode\
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-lonmqsb
Microsoft-MIEngine-Error-32upxw4x.mq3' '--pid=Microsoft-MIEngine-
n\gdb.exe' '--interpreter=mi'
Digits in ASCII of 'A': 6 5
After destruction:
PS C:\Users\OM MUNDE\om c\project> []
```