

```
#include <stdio.h>

#include <stdlib.h>


#define TABLE_SIZE 10


// Node for linked list in Chaining
struct Node {
    int key;
    struct Node* next;
};


// Hash Table with Chaining
struct HashTable {
    struct Node* table[TABLE_SIZE];
};


// Simple hash function
int hash(int key) {
    return key % TABLE_SIZE;
}


// Initialize hash table
void initHashTable(struct HashTable* ht) {
    for (int i = 0; i < TABLE_SIZE; i++) {
        ht->table[i] = NULL;
    }
}


// Insert into hash table (Chaining)
void insertChaining(struct HashTable* ht, int key) {
    int index = hash(key);
```

```

struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));

newNode->key = key;

newNode->next = ht->table[index];

ht->table[index] = newNode;
}

```

// Search in hash table (Chaining)

```

int searchChaining(struct HashTable* ht, int key) {

    int index = hash(key);

    struct Node* temp = ht->table[index];

    while (temp) {

        if (temp->key == key) return 1;

        temp = temp->next;

    }

    return 0;

}

```

// Print hash table (Chaining)

```

void printChaining(struct HashTable* ht) {

    for (int i = 0; i < TABLE_SIZE; i++) {

        printf("Bucket %d: ", i);

        struct Node* temp = ht->table[i];

        while (temp) {

            printf("%d -> ", temp->key);

            temp = temp->next;

        }

        printf("NULL\n");

    }

}

```

```

int main() {

```

```

struct HashTable ht;

initHashTable(&ht);

insertChaining(&ht, 15);

insertChaining(&ht, 25);

insertChaining(&ht, 35);

printChaining(&ht);

printf("Found 25: %d\n", searchChaining(&ht, 25));

return 0;
}

```

```

owsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-v02hrog1.op2' '--stdout=Microsoft-MIEngine-Out-wxjuhym4.tcr' '-
-stderr=Microsoft-MIEngine-Error-ucuz0ciq.jeb' '--pid=Microsoft-MIEngine-Pid-m2rhwegv.d14' '--dbgExe=C:\msys64\ucrt6
4\bin\gdb.exe' '--interpreter=mi'
Bucket 0: NULL
Bucket 1: NULL
Bucket 2: NULL
Bucket 3: NULL
Bucket 4: NULL
Bucket 5: 35 -> 25 -> 15 -> NULL
Bucket 6: NULL
Bucket 7: NULL
Bucket 8: NULL
Bucket 9: NULL
Found 25: 1
PS C:\Users\bhand>

```