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C Program to Implement Hashing

```
#include<stdio.h>
#define size 7
int array[size];
void init()
{
   int i;
   for(i = 0; i < size; i++)
      array[i] = -1;
}

void insert(int val)
{
   int key = val % size;

   if(array[key] == -1)
   {
      array[key] = val;
      printf("%d inserted at array[%d]\n", val,key);
   }
   else
   {
      printf("Collision : array[%d] has element %d already!\n",key,array[key]);
      printf("Unable to insert %d\n",val);
   }
}
```

```
void del(int val)
{
   int key = val % size;
   if(array[key] == val)
      array[key] = -1;
   else
      printf("%d not present in the hash table\n",val);
}

void search(int val)
{
   int key = val % size;
   if(array[key] == val)
      printf("Search Found\n");
   else
      printf("Search Not Found\n");
}

void print()
{
   int i;
   for(i = 0; i < size; i++)
      printf("array[%d] = %d\n",i,array[i]);
}

int main()
{
   init();
   insert(10);
   insert(4);
```

```
    insert(2);
    insert(3);

    printf("Hash table\n");
    print();
    printf("\n");

    printf("Deleting value 10..\n");
    del(10);
    printf("After the deletion hash table\n");
    print();
    printf("\n");

    printf("Deleting value 5..\n");
    del(5);
    printf("After the deletion hash table\n");
    print();
    printf("\n");

    printf("Searching value 4..\n");
    search(4);
    printf("Searching value 10..\n");
    search(10);

    return 0;
}
```

Output :

10 inserted at array[3]

4 inserted at array[4]

2 inserted at array[2]

Collision : array[3] has element 10 already!

Unable to insert 3

Hash table

array[0] = -1

array[1] = -1

array[2] = 2

array[3] = 10

array[4] = 4

array[5] = -1

array[6] = -1

Deleting value 10..

After the deletion hash table

array[0] = -1

array[1] = -1

array[2] = 2

array[3] = -1

array[4] = 4

array[5] = -1

array[6] = -1

Deleting value 5..

5 not present in the hash table

After the deletion hash table

array[0] = -1

array[1] = -1

array[2] = 2

array[3] = -1

array[4] = 4

array[5] = -1

array[6] = -1

Searching value 4..

Search Found

Searching value 10..

Search Not Found