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#include<stdio.h>

#define size 6

struct hash
{
int key;
struct hash *next;
}*ht[size], *newnode, *p;

void initially()
{
int i;
for(i=0; i<size; i++)
{
ht[i]=NULL;
}

}

void insert()
{
int hi, ele;
printf("Enter the value of Key");
scanf("%d", &ele);

hi=ele%size;

newnode=(struct hash*)malloc(sizeof(struct hash));
newnode->key = ele;
newnode->next=NULL;

if(ht[hi]==NULL)
{
ht[hi]=newnode;

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}
else
{
for(p=ht[hi];p->next !=NULL ;p=p->next);
p->next = newnode;
}
}

void find()
{
int i,n,flag=0;
printf("enter element want to find");
scanf("%d",&n);
for(p=ht[n%size];p!=NULL;p=p->next)
{
if(p->key==n)
{ flag=1;
break;
}
}

if(flag==1)
printf("found");
else
printf("not found");

}

void display()
{
int i;

printf("\n**The Hash table**\n\n HashTable[Hash Key]\t Chain of Key's\n");

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for(i=0;i<size;i++)
{
if(ht[i] != NULL)
{
printf("Hash_Table[%d] = ",i);

for(p=ht[i]; p != NULL; p =p->next)
printf("->%d ",p->key);
}
printf("\n\n");
}
}

main()
{
int cho,i,ele;

initially();

do
{
printf("\n** Main Menu **");
printf("\n1.Insert\n2.Find\n3.Display\n4.Exit\n");
printf("Enter your choice :");
scanf("%d",&cho);
switch(cho)
{
case 1:
insert();
break;
case 2:

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find();

break;

case 3:

display();

break;

case 4:

exit(0);

}

}while(cho!=4);

}

```

## Output:

```

"C:\Users\91911\OneDrive\Documents\Exams\ptr\seperate chaining.exe"

** Main Menu **
1.Insert
2.Find
3.Display
4.Exit
Enter your choice :1
Enter the value of Key5

** Main Menu **
1.Insert
2.Find
3.Display
4.Exit
Enter your choice :2
enter element want to find5
found
** Main Menu **
1.Insert
2.Find
3.Display
4.Exit
Enter your choice :3

**The Hash table**

HashTable[Hash Key]    Chain of Key's

Hash_Table[5] = ->5

** Main Menu **
1.Insert
2.Find
3.Display
4.Exit
Enter your choice :4
Process returned 0 (0x0)   execution time : 30.156 s
Press any key to continue.

```