LINEAR PROBING

```
#include <stdio.h>
#define SIZE 5

int hash[SIZE];
int hashf(int data){
        return data%10;
}
void insert(int key){
        int in=hashf(key);
        int i=0;
        while(hash[(in+i)%SIZE]!=0)
                i++;
        hash[(in+i)%SIZE]=key;
}
int search(int key){
   int in=hashf(key);
   int i = 0;
   while(hash[(in+i)%SIZE]!=0) {
      if(hash[(in+i)%SIZE]==key)
         return 1;
      i++;
      if (i==SIZE)
                        break;
   }
   return 0;
}
void display(){
        int i;
   for(i=0;i<SIZE;i++)
      printf("%d : %d\n",i,hash[i]);
}
int main() {
   int choice, key;
   printf("\n1.Insert\n2.Display\n3.Search\n4.Exit\n");
   while (1){
        printf("enter the choice:");
      scanf("%d",&choice);
      if (choice==1){
         printf("Enter key: ");
         scanf("%d",&key);
         insert(key);
```

```
        }
                else if (choice==2) {
           display();
        }
                else if (choice==3) {
           printf("Enter key to search: ");
           scanf("%d",&key);
           if (search(key))
                                printf("Found\n");
           else
                                printf("Not Found\n");
        }
                else
                        break;
    }
    return 0;
}
```

OUTPUT:

```
1.Insert
2.Display
3.Search
4.Exit
enter the choice:1
Enter key: 2
enter the choice:1
Enter key: 3
enter the choice:1
Enter key: 4
enter the choice:1
Enter key: 44
enter the choice:1
Enter key: 5
enter the choice:2
0 : 44
1 : 5
2 : 2
3 : 3
4 : 4
enter the choice:
```