NAME : TANISHQ GUPTA

CLASS : SE

BATCH : A4

ROLL NO.: SEAD2116

CODE:

```cpp
#include<iostream>
#include<string.h>
using namespace std;
class HashFunction
 {
   typedef struct hash
        {       int key;
                int value;
        }hash;
        hash h[10];
  public:
        HashFunction();
        void insert();
        void display();
        int find(int);
        void Delete(int);
 };
HashFunction::HashFunction()
 {
        int i;
        for(i=0;i<10;i++)
         {
                h[i].key=-1;
```

```cpp
                    h[i].value=-1;

            }

   }
void HashFunction::Delete(int k)
 {
        int index=find(k);
        if(index==-1)
         {
                cout<<"\n\tKey Not Found";
         }
        else
         {
                h[index].key=-1;
                h[index].value=-1;
                cout<<"\n\tKey is Deleted";
         }
 }
int HashFunction::find(int k)
 {
        int i;
        for(i=0;i<10;i++)
         {
                if(h[i].key==k)
                 {
                cout<<"\n\t"<<h[i].key<<" is Found at "<<i<<" Location With Value "<<h[i].value;
                        return i;
                 }
         }
        if(i==10)
         {
                return -1;        }}
```

```cpp
void HashFunction::display()
{
        int i;
        cout<<"\n\t\tKey\tValue";
        for(i=0;i<10;i++)
         {
                cout<<"\n\th["<<i<<"]\t"<<h[i].key<<"\t"<<h[i].value;
         }
}
void HashFunction::insert()
{
        char ans;
        int k,v,hi,cnt=0,flag=0,i;
        do
         {              if(cnt>=10)
                {
                        cout<<"\n\tHash Table is FULL";
                        break;
                }
                cout<<"\n\tEnter a Key: ";
                cin>>k;
                cout<<"\n\tEnter a Value: ";
                cin>>v;
                hi=k%10;// hash function
                if(h[hi].key==-1)
                 {
                        h[hi].key=k;
                        h[hi].value=v;
                 }
            else
                {
```

```
                    for(i=hi+1;i<10;i++)
                    {
                            if(h[i].key==-1)
                            {
                                    h[i].key=k;
                                    h[i].value=v;
                                    flag=1;
                                    break;
                            }
                    }
                    for(i=0;i<hi && flag==0;i++)
                    {
                            if(h[i].key==-1)
                            {
                                    h[i].key=k;
                                    h[i].value=v;
                                    break;
                            }
                    }
                }
                flag=0;
            cnt++;
            cout<<"\n\t..... Do You Want to Insert More Key: ";
            cin>>ans;
        }while(ans=='y'||ans=='Y');
    }
main()
    {
        int ch,k,index;
        char ans;
        HashFunction obj;
```

```cpp
do
{
        cout<<"\n\t***** Dictionary (ADT) *****";
        cout<<"\n\t1. Insert\n\t2. Display\n\t3. Find\n\t4. Delete\n\t5. Exit";
        cout<<"\n\t..... Enter Your Choice: ";
        cin>>ch;
        switch(ch)
        {       case 1:  obj.insert();
                                break;
                case 2:  obj.display();
                                break;
                case 3:  cout<<"\n\tEnter a Key Which You Want to Search: ";
                                cin>>k;
                                index=obj.find(k);
                                if(index==-1)
                                 {
                                        cout<<"\n\tKey Not Found";
                                 }
                                break;
                case 4:  cout<<"\n\tEnter a Key Which You Want to Delete: ";
                                cin>>k;
                                obj.Delete(k);
                                break;
                case 5:
                                break;
        }
        cout<<"\n\t..... Do You Want to Continue in Main Menu: ";
        cin>>ans;
}while(ans=='y'||ans=='Y');
}
```

OUTPUT:

```
PS C:\Users\tanis\OneDrive\Desktop\Tanishq_Gupta_21168> g++ '.\9 DictionaryAVL.cpp'
PS C:\Users\tanis\OneDrive\Desktop\Tanishq_Gupta_21168> .\a.exe

-----Menu-----
1.Create
2.Display
3.Search
4.Update
5.Delete
6.Exit
Enter:: 1

Enter Keyword :: happy
Enter Meaning :: enjoy

Do u want to add more (y/n):y

Enter Keyword :: word
Enter Meaning :: meaning

Do u want to add more (y/n):n

-----Menu-----
1.Create
2.Display
3.Search
4.Update
5.Delete
6.Exit
Enter:: 2
Keyword          Meaning
----------------------
happy   -        enjoy
word    -        meaning
-----Menu-----
1.Create
2.Display
3.Search
4.Update
5.Delete
6.Exit
Enter:: 5

Enter Keyword which u want to delete :: word

-----Menu-----
1.Create
2.Display
3.Search
4.Update
5.Delete
6.Exit
Enter:: 2
Keyword          Meaning
----------------------
happy   -        enjoy
-----Menu-----
1.Create
2.Display
3.Search
4.Update
5.Delete
6.Exit
Enter:: 6
Thank You!
PS C:\Users\tanis\OneDrive\Desktop\Tanishq_Gupta_21168> |
```