DS-PROJECT
DICTIONARY USING TRIE DATASTUCTURE

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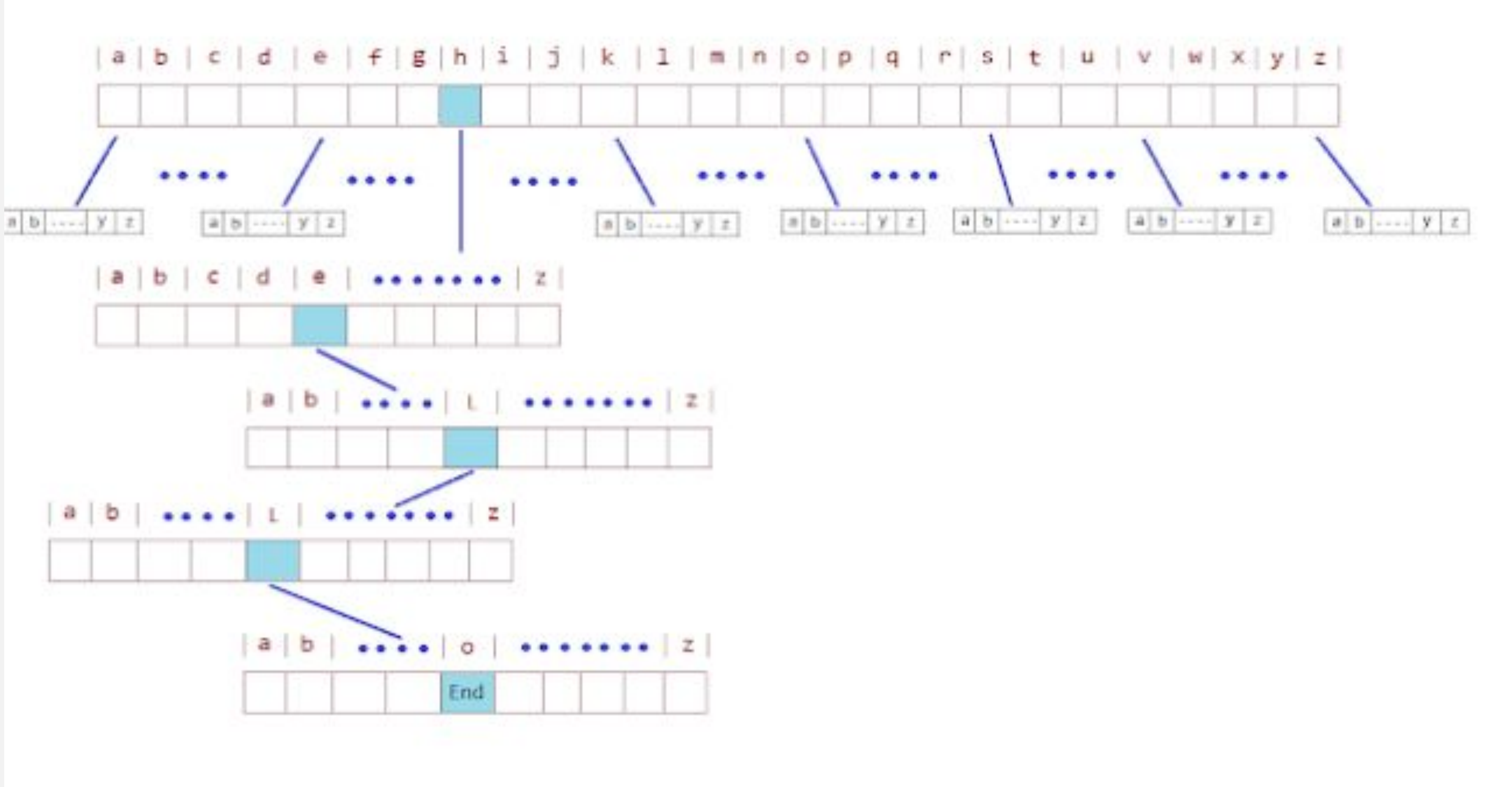
WHAT IS A TRIE DATA-STRUCTURE?

- A trie is a tree-like data structure whose nodes store the letters of an alphabet. By structuring the nodes in a particular way, words and strings can be retrieved from the structure by traversing down a branch path of the tree.

STRUCTURE

```
struct TrieNode
{
     struct TrieNode *children[ALPHABET_SIZE];
      int end_of_word;
      char meaning[200];
}
```

We can see that there is an array of size (alphabet size) which is used to store the alphabets. Along with that we have an int type end_of_word. This helps us know if it is an true word or not.



This is a sample structure of a trie data-structure. The only difference is that there is an extra member which denotes the end_of_word which is not seen in the above image.

PROBLEM-STATEMENT

- Implementation of dictionary using trie data-structure.

DICTIONARY USING TRIE DATA-STRUCTURE

- By using Trie data structure we will be implementing a dictionary.
- We will be using the following functions 1)Add

  2)Search

  3)Delete

  4)View

  5)Exit

- **Work of the functions used.**

1)ADD :- with this function we add a new word to the dictionary along with the meaning incase the word already exists, the new meaning added will be replaced instead of the old one.

2)SEARCH:- we can search the particular word of our wish with this function, it will return appropriately based on the existence of the word in the dictionary.

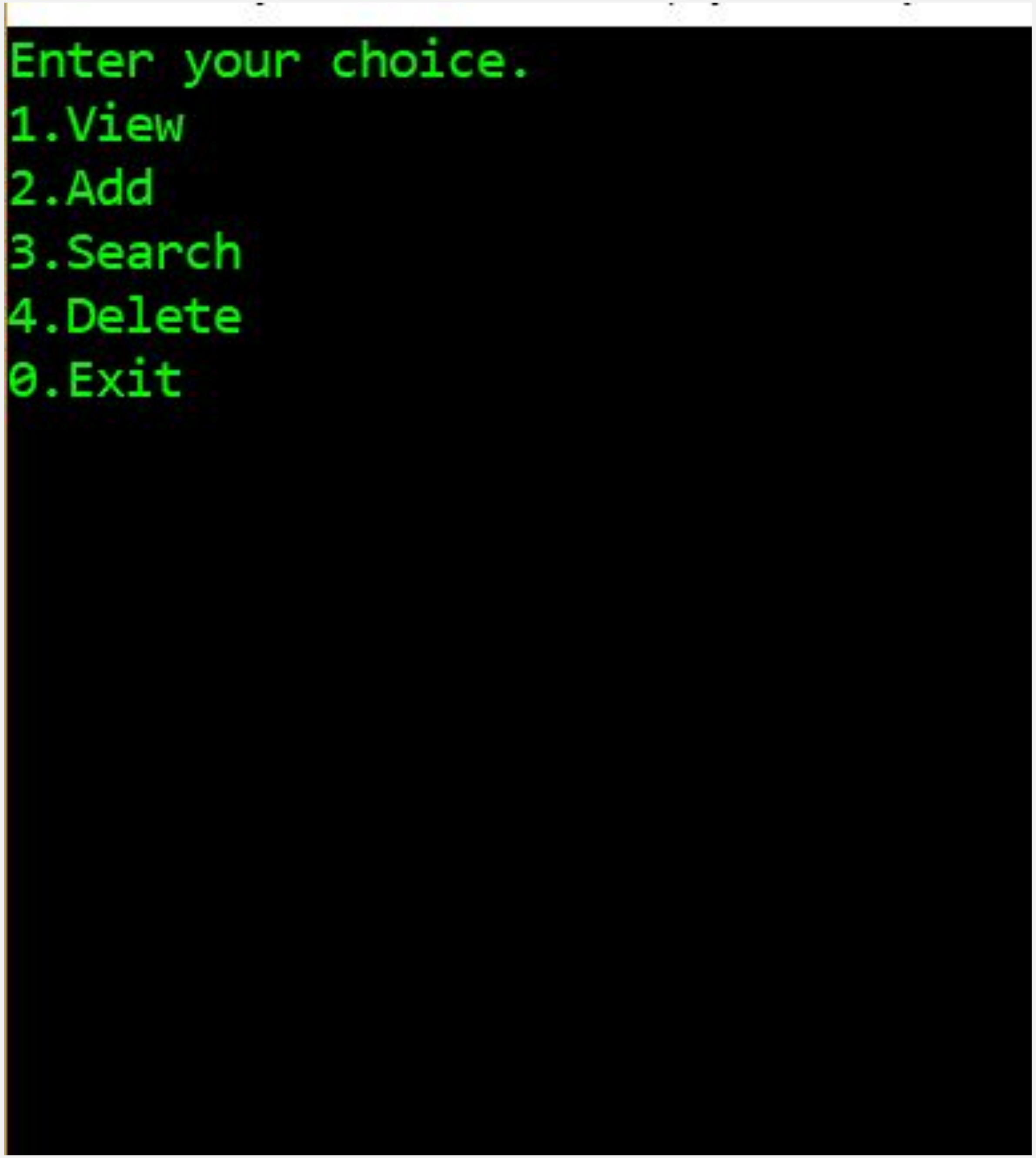
3)DELETE:- you can remove the word of your choice if and only if it exists.

4)VIEW:- this will list out all the words .

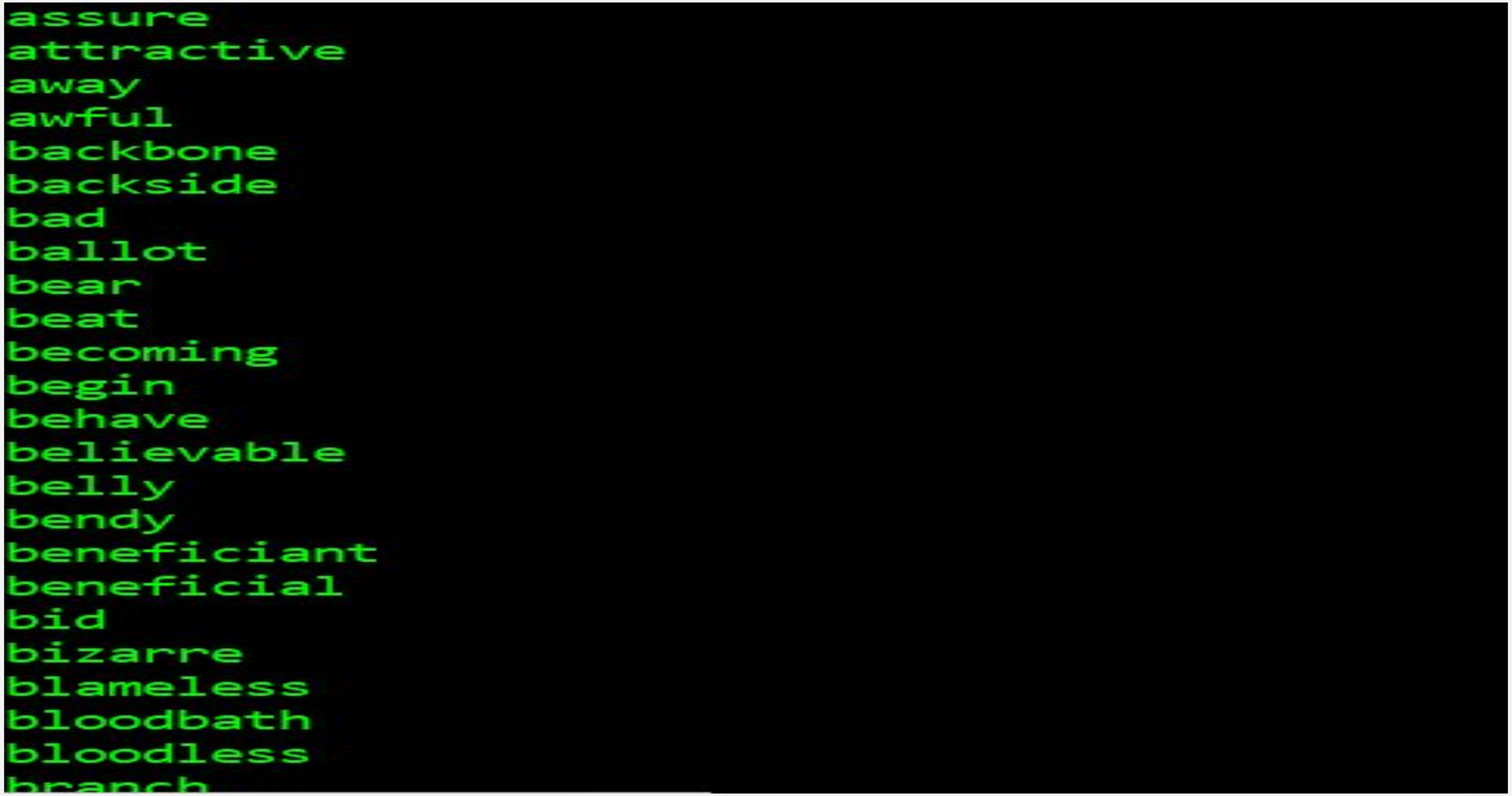
5)EXIT:- this function will exit out of the program

All the words of the dictionary are stored in a .txt file. Each line of the file consists of the word followed by a space and the meaning. The meaning can also contain spaces. Each time the code is run,the dictionary is loaded onto a trie data structure. On selecting the exit option, all the nodes are deleted and memory is deallocated.

MENU FUNCTION

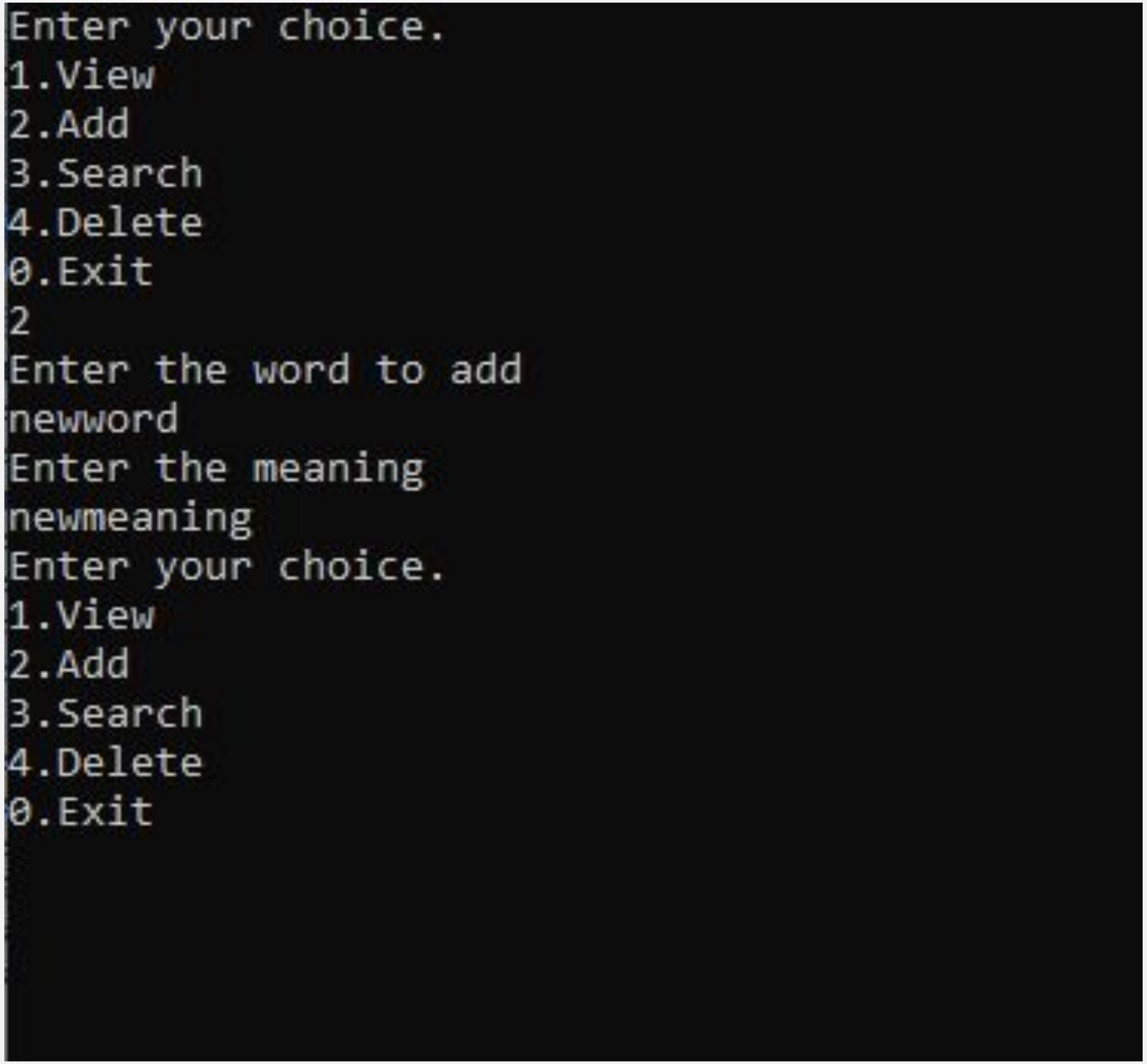


```
Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
```



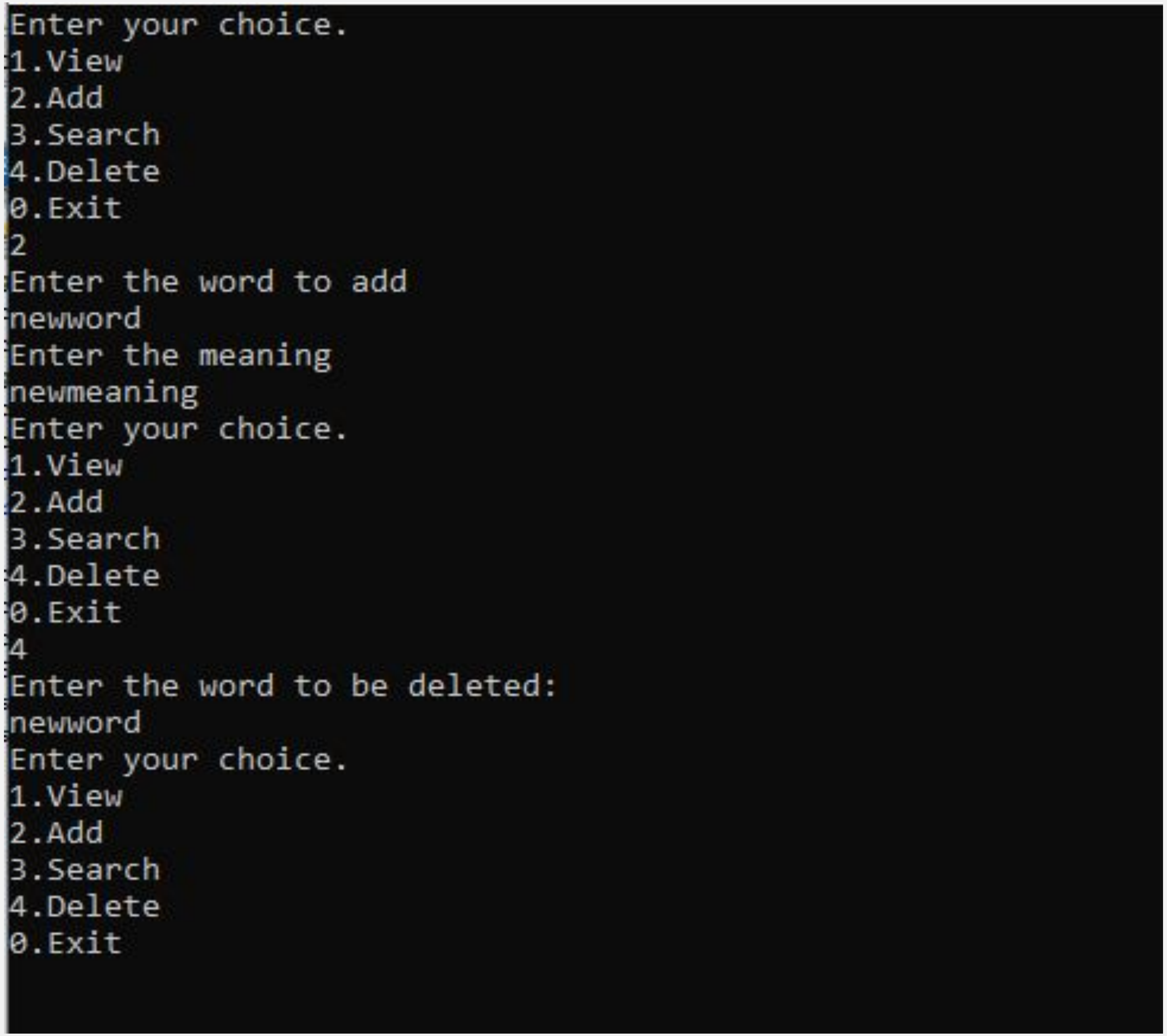
```
assure
attractive
away
awful
backbone
backside
bad
ballot
bear
beat
becoming
begin
behave
believable
belly
bendy
beneficiant
beneficial
bid
bizarre
blameless
bloodbath
bloodless
branch
```

VIEW FUNCTION



```
Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
2
Enter the word to add
newword
Enter the meaning
newmeaning
Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
```

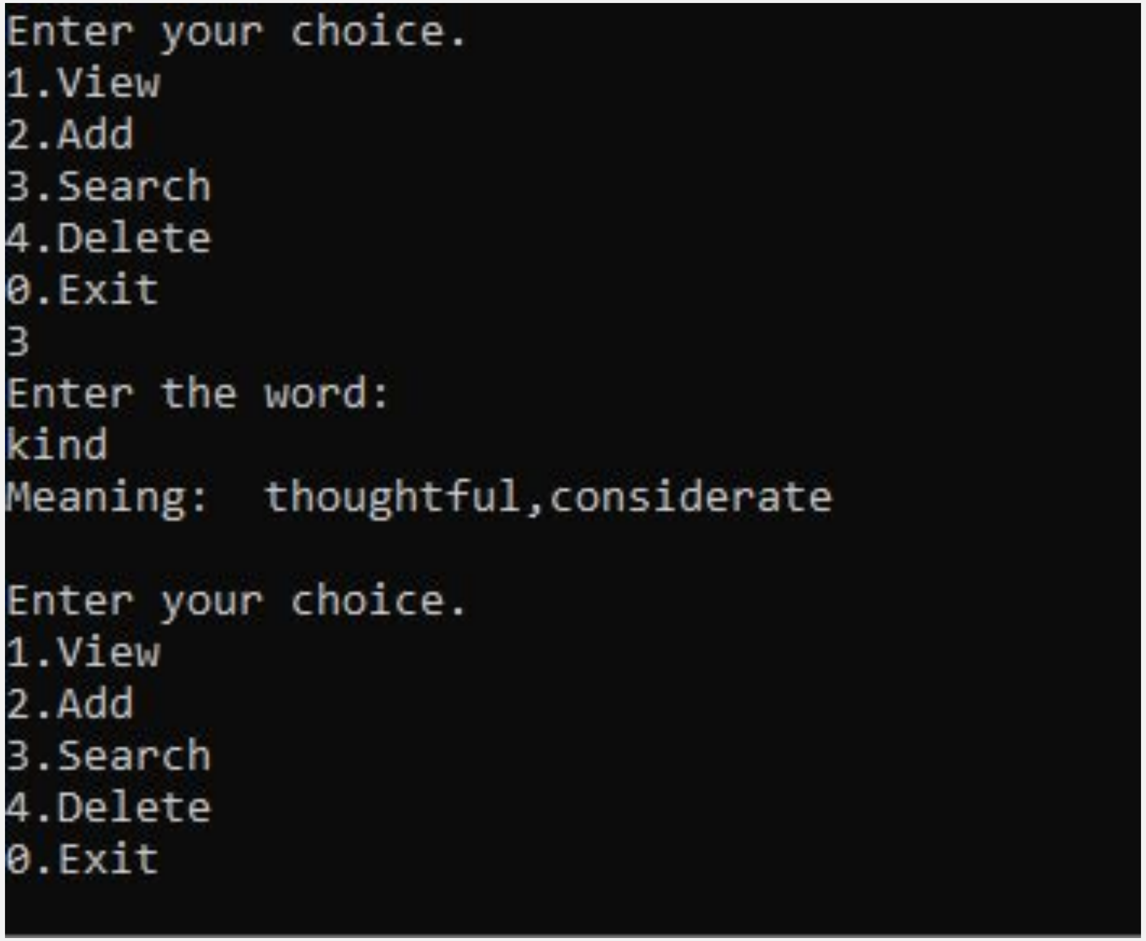
ADD FUNCTION



```
Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
2
Enter the word to add
newword
Enter the meaning
newmeaning
Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
4
Enter the word to be deleted:
newword
Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
```

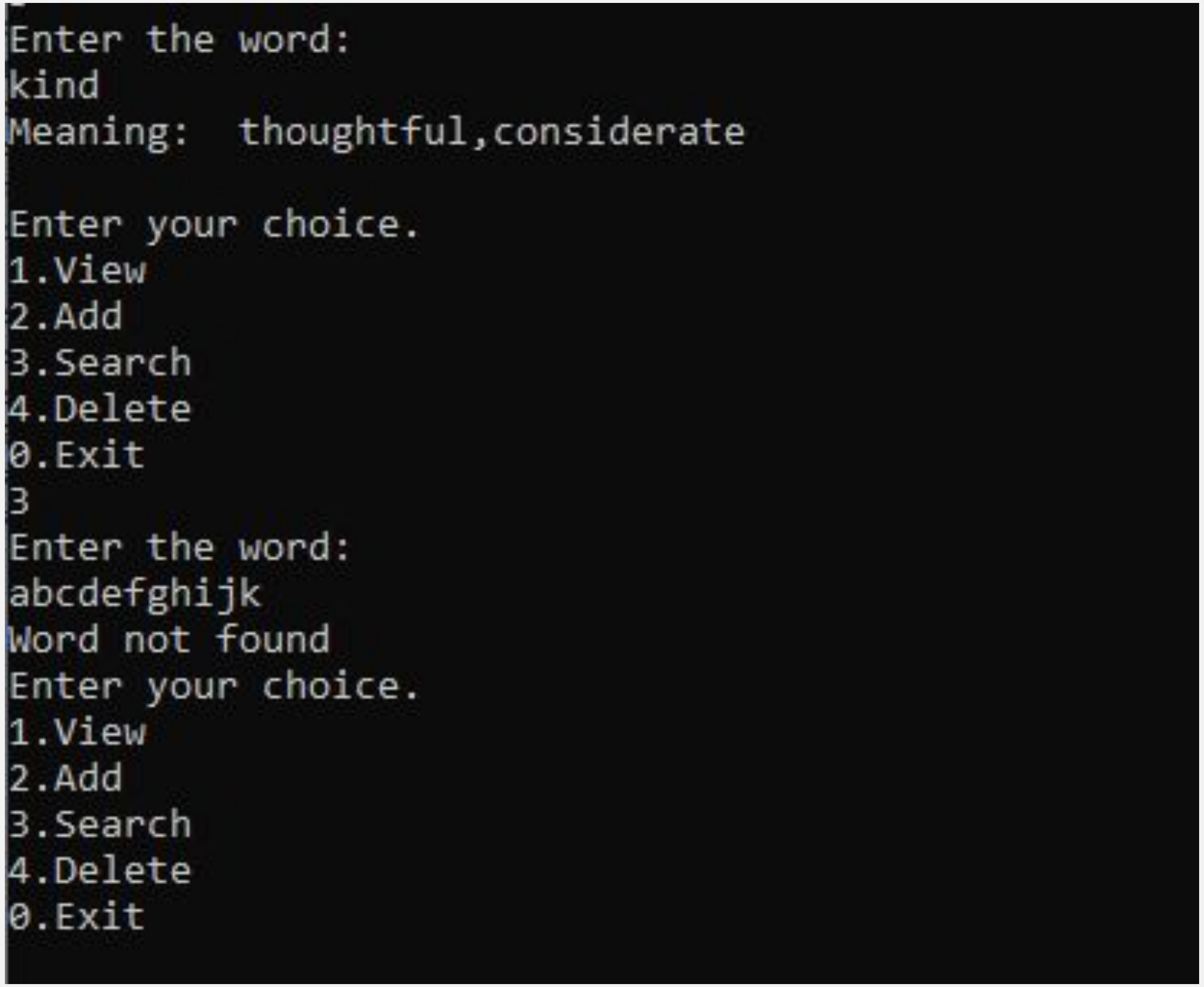
DELETE FUNCTION

SEARCH FUNCTION



```
Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
3
Enter the word:
kind
Meaning:  thoughtful,considerate

Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
```



```
Enter the word:
kind
Meaning:  thoughtful,considerate

Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
3
Enter the word:
abcdefghijk
Word not found
Enter your choice.
1.View
2.Add
3.Search
4.Delete
0.Exit
```

THANK YOU