

DATA STRUCTURES PROJECT REPORT

NOTEPAD

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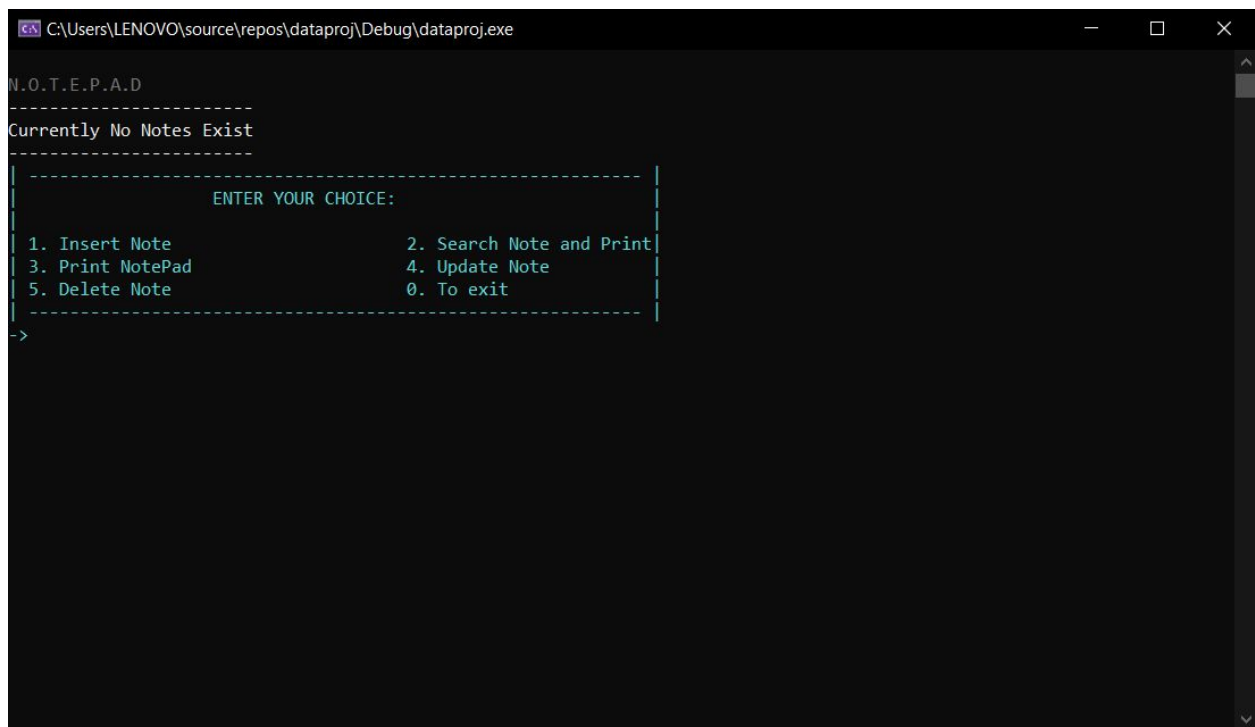
OVERVIEW:

We made a notepad using an AVL tree, the notes being the nodes of the tree and the nodes containing a doubly list with a char at each node of the list. It is, perhaps, a tree of lists.

Each char inserted in a note(node of an avl) is actually a node of the doubly linked list, i.e a doubly list of characters is the data of each node of the AVL. The key of the node of an AVL is a unique ID of the note that the user gives.

Notepad Functionalities :

How it looks initially



```
C:\Users\LENOVO\source\repos\dataproj\Debug\dataproj.exe
N.O.T.E.P.A.D
-----
Currently No Notes Exist
-----
|-----|
|          ENTER YOUR CHOICE:          |
|-----|
| 1. Insert Note          2. Search Note and Print |
| 3. Print NotePad       4. Update Note          |
| 5. Delete Note         0. To exit              |
|-----|
->
```

- **Insert**

- in a new notepad with no existing notes
- in an old notepad with multiple notes inserted already

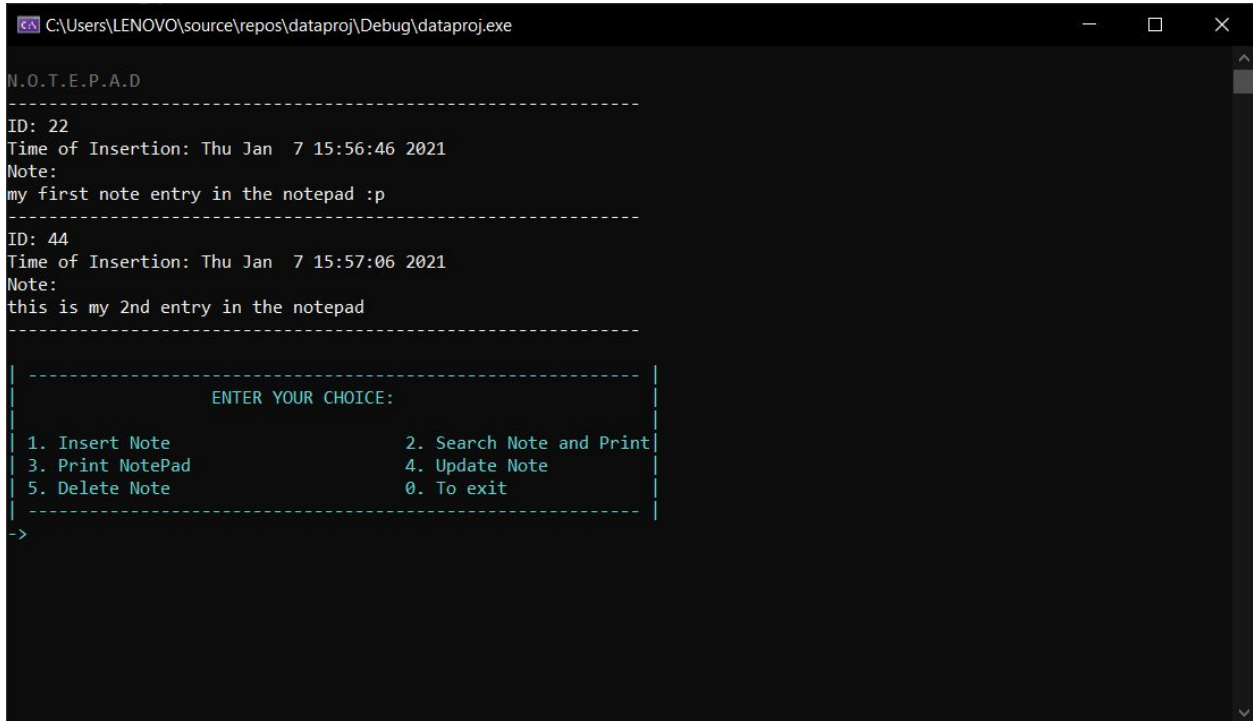
Before insertion:

```
C:\Users\LENOVO\source\repos\dataproj\Debug\dataproj.exe
N.O.T.E.P.A.D
-----
Currently No Notes Exist
-----
|-----|
|          ENTER YOUR CHOICE:          |
|-----|
| 1. Insert Note                      2. Search Note and Print |
| 3. Print NotePad                   4. Update Note             |
| 5. Delete Note                     0. To exit                  |
|-----|
-> 1
Enter ID of the note:
22
Press ESC(escape) to exit your note.
You can start writing your note
```

After insertion:

```
C:\Users\LENOVO\source\repos\dataproj\Debug\dataproj.exe
N.O.T.E.P.A.D
|-----|
|          ENTER YOUR CHOICE:          |
|-----|
| 1. Insert Note                      2. Search Note and Print |
| 3. Print NotePad                   4. Update Note             |
| 5. Delete Note                     0. To exit                  |
|-----|
-> 3
-----
ID: 22
Time of Insertion: Thu Jan  7 15:56:46 2021
Note:
my first note entry in the notepad :p
-----
ID: 44
Time of Insertion: Thu Jan  7 15:57:06 2021
Note:
this is my 2nd entry in the notepad
-----
N.O.T.E.P.A.D
|-----|
|          ENTER YOUR CHOICE:          |
|-----|
| 1. Insert Note                      2. Search Note and Print |
```

After exiting the notepad and opening it again you get to view the already inserted notes like this:



```
C:\Users\LENOVO\source\repos\dataproj\Debug\dataproj.exe
N.O.T.E.P.A.D
-----
ID: 22
Time of Insertion: Thu Jan  7 15:56:46 2021
Note:
my first note entry in the notepad :p
-----
ID: 44
Time of Insertion: Thu Jan  7 15:57:06 2021
Note:
this is my 2nd entry in the notepad
-----

| ----- |
|          |
|  ENTER YOUR CHOICE:  |
|          |
| 1. Insert Note       | 2. Search Note and Print |
| 3. Print NotePad     | 4. Update Note           |
| 5. Delete Note       | 0. To exit              |
| ----- |
|>
```

The notes inserted in the AVL are saved in a file (NotePad.txt) before exiting. That means when a user enters 0, all the notes in the AVL are written in the file. This file also handles the updated and deleted notes. The note deleted or updated in the AVL (Notepad) is also updated or deleted in the file.

- **Update**
 - updates a recently added note
 - allows update of an already existing note

Before update:

```
N.O.T.E.P.A.D
-----
          ENTER YOUR CHOICE:
-----
1. Insert Note           2. Search Note and Print
3. Print NotePad        4. Update Note
5. Delete Note          0. To exit
-----
-> 4
Enter ID of note:
22
Press ESC(escape) to exit your note.
You can start writing your note
```

After update:

```
C:\Users\LENOVO\source\repos\dataproj\Debug\dataproj.exe
N.O.T.E.P.A.D
-----
          ENTER YOUR CHOICE:
-----
1. Insert Note           2. Search Note and Print
3. Print NotePad        4. Update Note
5. Delete Note          0. To exit
-----
-> 3
-----
ID: 22
Time of Insertion: Thu Jan  7 16:03:38 2021

Note:
my first note entry in the notepad :p and now i have updated it
-----
ID: 44
Time of Insertion: Thu Jan  7 15:57:06 2021
Note:
this is my 2nd entry in the notepad
-----
```

- **Delete**

-deletes any of the existing notes by giving the ID if the note to be deleted

```

Microsoft Visual Studio Debug Console

N.O.T.E.P.A.D
-----
                ENTER YOUR CHOICE:
-----
1. Insert Note           2. Search Note and Print
3. Print NotePad        4. Update Note
5. Delete Note          0. To exit
-----
-> 5
Enter ID of note:
22
Note is succesfully deleted
  
```

- **Display**

-the whole notepad

-any single note by search & display, giving the ID of the note to be printed

-you can display your note in any color you want

```

N.O.T.E.P.A.D
-----
                ENTER YOUR CHOICE:
-----
1. Insert Note           2. Search Note and Print
3. Print NotePad        4. Update Note
5. Delete Note          0. To exit
-----
-> 2
Enter ID of note:
22
-----
                Choose a color to print your note
1__for Blue             2__for Green           3__for Cyan
4__for Red              5__for Magenta          6__for Brown
9__for LightBlue        14__for Yellow          12__for LightRed
                        15__for white
-----
-> 12
ID: 22
Time of Insertion: Thu Jan  7 15:56:46 2021

Note:
my first note entry in the notepad :p
-----
  
```