BIL214 System Programming

Lab 6

Deadline: 28/10/2021 18:30 GMT +3

https://forms.gle/Z1kcBLRV8LiwJj3Z9

In this lab you're asked to write a program in C that lists every path in a given binary tree.

The program should be named **Traverse.c** and should work as following.

```
~$ ./Traverse
Enter a binary tree:
```

At this point, a breadth-first traversion of a complete binary tree should be entered.

This input can include any capital letter or number, and the maximum length should be 30. There can be duplicate characters and numbers.

```
 Enter a binary tree:
6273HS89
```

Your program should compute and list all of the possible paths that start on a node and end on a leaf. You should also indicate the layer that the node belongs in as there could be duplicates.

```
 Enter a binary tree:
6273H589

Paths:
Layer 0 | Node 6: 6239, 62H, 675, 678
Layer 1 | Node 2: 239, 2H
Layer 1 | Node 7: 75, 78
Layer 2 | Node 3: 39
Layer 2 | Node H: H
Layer 2 | Node 5: 5
Layer 2 | Node 8: 8
Layer 3 | Node 5: 9
```