Assignment 8 INFORMATION ARCHITECTURE, FALL 2019

DUE : 10:00 AM SATURDAY, NOVEMBER 23

Problem 1. The following questions refer to the tree on page 10 of the lecture note 9:

- Which node is the root?
- What are the internal nodes?
- What are the siblings of node `TV`?
- What is the depth of node `International`?
- What is the height of the tree?

Problem 2. A tree `T` has 10 internal nodes. If every internal node in `T` has exactly 3 children, what is the number of external nodes?

Problem 3. Assume that all values in a binary tree `T` are integers. Write a Python program for finding the sum of all elements in a binary tree.

```
class Node:
    def __init__(self, value, left = None, right = None):
        self.value = value
        self.left = left
        self.right = right

def sum_BT(root): # root is the root node for T
    # implement this function
```

Problem 4. Draw a binary tree `T` that simultaneously satisfies the following:

- Each internal node of `T` stores a single character.
- A preorder traversal of `T` yields `EXAMFUN`.
- An inorder traversal of `T` yields `MAFXUEN`.