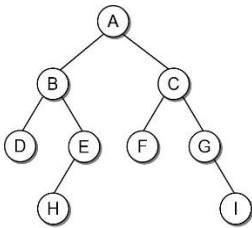


## CSCI 204 Binary Tree Activity 1

Student name(s) \_\_\_\_\_

1. Find two real life examples in which the binary tree data structure is appropriate. Briefly discuss reasons and why it is best to use the binary tree data structures, not other linear structures such as list, queue, or stack.
2. Given following binary tree we discussed in our lecture notes (Lecture 26: Introduction to Binary Trees)



- a. Manually “traverse” the tree with the help of a stack, following the algorithm given below. Write out what’s been printed.

```
Initialize the stack S to be empty
put the root (A in this case) on S
while S is not empty:
    n = S.pop()
    print(n)
    for all children c of n:
        S.push( c)
```

- b. Do the same, but using a queue as the data structure.