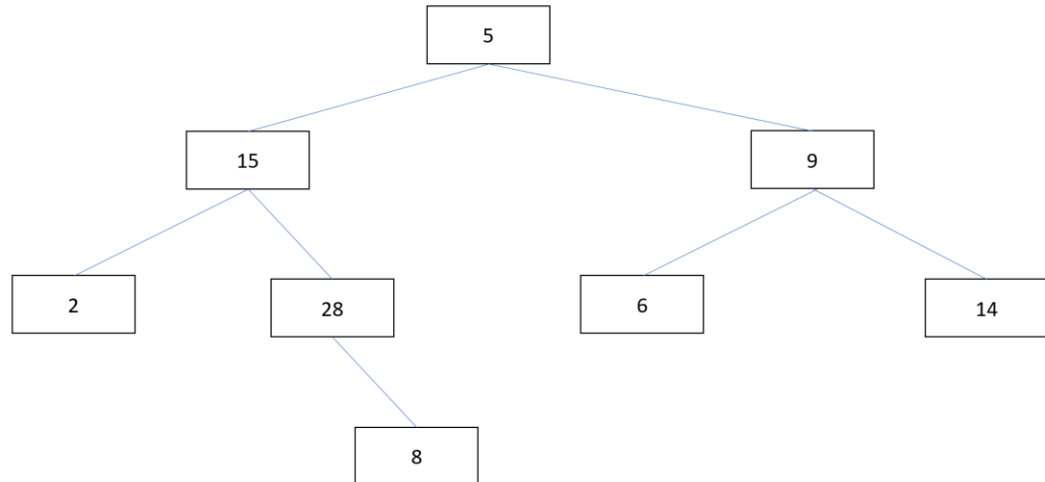


CS 161 Recitation
Worksheet: Week 6

1. Go over Quiz #5 answers.
2. Finish Worksheet 5 (especially anything about recursion).
3. See if you can figure out what the following **recursive algorithm** will print based off the binary tree (Don't be intimidated, try tracing through the algorithm):



```
printValue(square x)
    if square x does not exist
        return //(Don't print anything)
    printValue(x's left child)
    Print: Value of x
    printValue(x's right child)
```

4. Think of different ways you could arrange the last three lines in the recursive algorithm above and how does it change the order of the values printed.
5. What are pre-conditions and post-conditions? Post-conditions become important when the function in question has **reference parameters**. For each of the three following functions, **write down a brief description of their purpose, as well as their pre-conditions and post-conditions**.

```
double calc_average(double sum, int count) {
    return sum/count;
}
```

```
void swap_chars(string &str) {
    char first = str.at(0);
    str.at(0) = str.at(1);
    str.at(1) = first;
}
```

```
void update_average(double &average, int &count, double new_val) {
    double sum = average*count;
    sum += new_val;
    count += 1;
    average = sum/count;
}
```