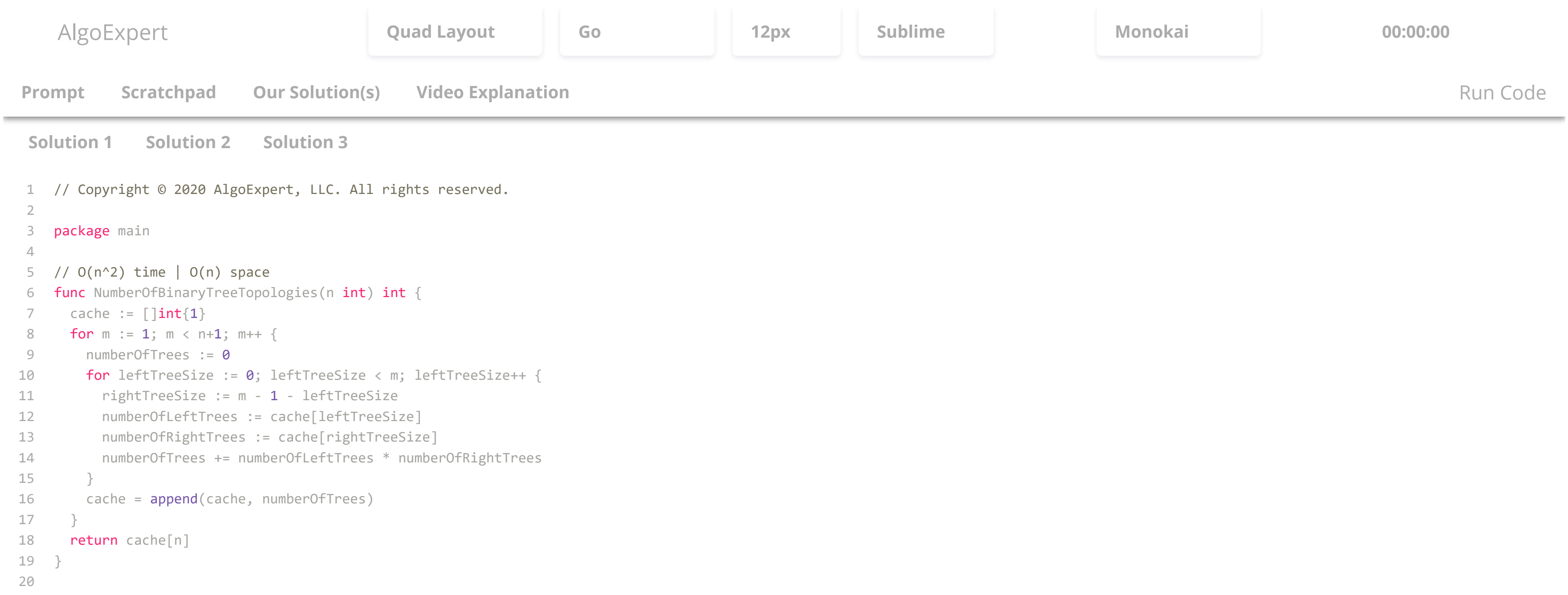

```go
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package main

// O(n^2) time | O(n) space
func NumberOfBinaryTreeTopologies(n int) int {
  cache := []int{1}
  for m := 1; m < n+1; m++ {
    numberOfTrees := 0
    for leftTreeSize := 0; leftTreeSize < m; leftTreeSize++ {
      rightTreeSize := m - 1 - leftTreeSize
      numberOfLeftTrees := cache[leftTreeSize]
      numberOfRightTrees := cache[rightTreeSize]
      numberOfTrees += numberOfLeftTrees * numberOfRightTrees
    }
    cache = append(cache, numberOfTrees)
  }
  return cache[n]
}

```