124. Permutations and Combinations BACKTRACKING

PROGRAM:-

```
def permute(nums):
    def backtrack(start):
        if start == len(nums):
            result.append(nums[:])
            return
        for i in range(start, len(nums)):
            nums[start], nums[i] = nums[i], nums[start]
            backtrack(start + 1)
            nums[start], nums[i] = nums[i], nums[start]

    result = []
    backtrack(0)
    return result

# Example usage
nums = [1, 2, 3]
print(permute(nums))  # Output: [[1, 2, 3], [1, 3, 2], [2, 1, 3], [2, 3, 1], [3, 1, 2], [3, 2, 1]]
```

OUTPUT:-

```
[[1, 2, 3], [1, 3, 2], [2, 1, 3], [2, 3, 1], [3, 2, 1], [3, 1, 2]]

=== Code Execution Successful ===
```

TIME COMPLEXITY:-O(n.n!)