

Day – 10 Recursion & Backtracking

Problem 1: Given an array arr of distinct integers, print all permutations of String/Array.

```
def permute(nums):
```

```
    def backtrack(start):
```

```
        if start == len(nums):
```

```
            result.append(nums[:])
```

```
        else:
```

```
            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]
```

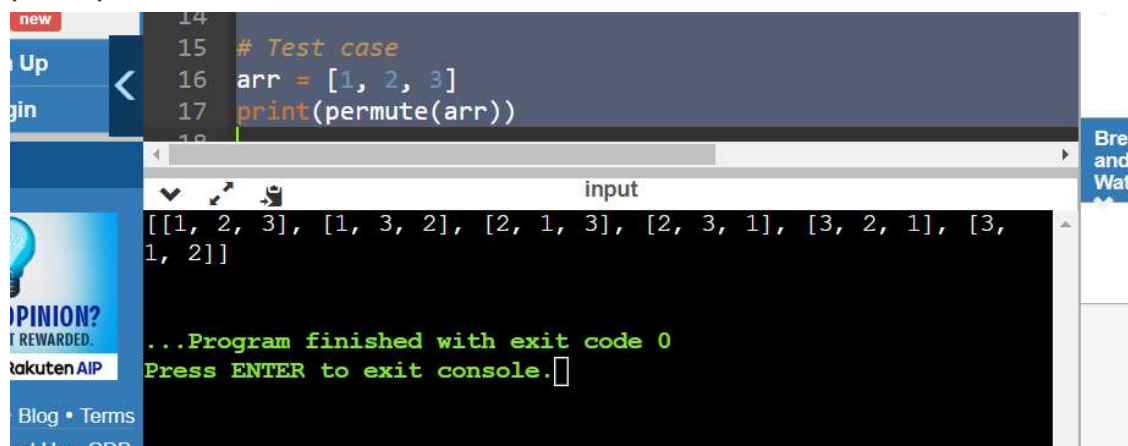
```
    result = []
```

```
    backtrack(0)
```

```
    return result
```

```
arr = [1, 2, 3]
```

```
print(permute(arr))
```



The screenshot shows a code editor with a dark theme. The code being executed is as follows:

```
14
15 # Test case
16 arr = [1, 2, 3]
17 print(permute(arr))
18
```

The output of the program is displayed in a console window below the code editor:

```
input
[[1, 2, 3], [1, 3, 2], [2, 1, 3], [2, 3, 1], [3, 2, 1], [3, 1, 2]]
...Program finished with exit code 0
Press ENTER to exit console.
```