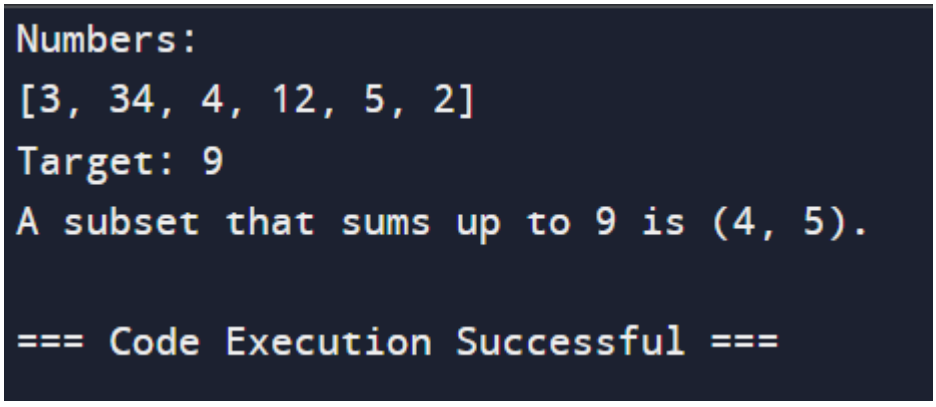
78.WRITE A PROGRAM OF EXHAUSTIVE SEARCH

PROGARM:-

```
from itertools import combinations

def exhaustive_search(numbers, target):
    # Iterate over all possible subset sizes
    for r in range(1, len(numbers) + 1):
        # Generate all subsets of size r
        for subset in combinations(numbers, r):
            # Check if the subset sums up to the target
            if sum(subset) == target:
                return subset
    return None

# Example usage
if __name__ == "__main__":
    numbers = [3, 34, 4, 12, 5, 2]
    target = 9

    print("Numbers:")
    print(numbers)
    print(f"Target: {target}")

    result = exhaustive_search(numbers, target)

    if result:
        print(f"A subset that sums up to {target} is {result}.")
    else:
        print(f"No subset sums up to {target}.")
```

OUTPUT:-



TIME COMPLEXITY:-O(n)