

## 78.Exhaustive Search

AIM: To find the closest combination by using exhaustive search algorithm

PROGRAM:

```
def exhaustive_search(target, numbers):  
    closest_sum = float('inf')  
    closest_combination = None  
    for i in range(len(numbers)):  
        for j in range(i+1, len(numbers)):  
            current_sum = numbers[i] + numbers[j]  
            if abs(target - current_sum) < abs(target - closest_sum):  
                closest_sum = current_sum  
                closest_combination = (numbers[i], numbers[j])  
  
    return closest_combination  
  
target = 10  
numbers = [1, 3, 6, 7, 9]  
closest_combination = exhaustive_search(target, numbers)  
print("Closest combination to the target:", closest_combination)
```

OUTPUT: **Closest combination to the target: (1, 9)**

TIME COMPLEXITY:  $O(n^2)$